12-2021

Mental Health Treatment in Juvenile Correctional Facilities: Utilizing Assessment To Inform Treatment

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A Clinical Research Project submitted to the faculty of the Illinois School of Professional Psychology at National Louis University, Chicago Campus in partial fulfillment of the requirements for the degree of Doctor of Psychology in Clinical Psychology

Chicago, Illinois
December 2021

The Doctorate Program in Clinical Psychology

Illinois School of Professional Psychology
at National Louis University

CERTIFICATE OF APPROVAL

Clinical Research Project

This is to certify that the Clinical Research Project of

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has been approved by the CRP
Committee on

December 07, 2021

as satisfactory for the CRP requirement
for the Doctorate of Psychology degree
with a major in Clinical Psychology

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Dedication

In loving memory of my grandmother, G-babe, who was my anchor through all of my failures and successes and whose love and devotion will always be pivotal to my striving and achievements. I also want to dedicate this dissertation to my father, who unknowingly taught me the value of hard work and perseverance and whose interest in this, as in all my ventures, was never less than my own.

Acknowledgments

To my research chair, Dr. Robert Eme, I am proud of, and honored by, the opportunity to learn from you. The endless supply of knowledge you generously shared will continue to influence my clinical and professional path for years to come. Thank you for your continued faith in me. To my reader, Dr. Kammie Juzwin, your knowledge, commitment, and passion always inspired me. I am so very grateful for your mentorship, encouragement, and support throughout my doctoral journey.

The ability to integrate a "neuro" perspective into my research would not have been possible without the numerous learning opportunities provided to me throughout my employment at Landstrom Center. Thank you all.

Getting through this journey required more than academic support. My deepest gratitude to the Skierkiewicz Family, thank you for always going above and beyond to make me feel like part of your family when I was unable to be close to mine. Most importantly, none of this would have been possible without my family, whose unconditional support, understanding, and belief in me has always kept me motivated, even from 857 miles away. To my Dad and Anne, this achievement is a testament of your sacrifice, love, and unwavering support.

Abstract

Youth in juvenile correctional facilities face a wide range of mental health difficulties. Over the years, the juvenile justice system has prioritized the need for providing appropriate and effective treatment services to youth throughout their detainment. Despite these ongoing efforts, treatment practices in juvenile correctional facilities continue to fall short. This study will first focus on assessment practices within these facilities and the impact current practices have on diagnosis and subsequent treatment. Emphasis will be placed on the importance of comprehensive evaluations for informing diagnosis and determining the individual treatment needs of detained youth. An integrated approach to assessment will be proposed, and illustrative case examples will be used to depict the value and need for improved assessment practices in juvenile correctional facilities. The relevance of comprehensive mental health evaluations as it relates to meeting the individualized treatment needs of detained youth will be also be discussed.

Chapter 1: Introduction

Research addressing the vast mental health issues in juvenile offenders was nonexistent until the juvenile court system shifted from a punitive to rehabilitative approach (Underwood & Washington, 2016). Since this time, persistent efforts have been made to understand the complex nature of the psychiatric impairments in detained youth; however, despite acknowledging the presence and impact of mental health disorders within this population, evaluation procedures and evidence-based treatment standards have yet to be established. As a result, treatment approaches have fallen short and are largely insufficient, if not absent (Schubert & Mulvey, 2014).

Rates of mental health disorders in juvenile offenders are markedly higher than adolescents in the community, as research has estimated that approximately 70% of incarcerated youth are affected by mental health difficulties when compared to only 20% of adolescents in the community population (Meservey & Skowyra, 2015). Although statistics vary across the literature, the increased prevalence of psychiatric disorders among juvenile offenders remains a consistent pattern. As stated by Marsh (2016), disruptive behavior disorders, such as conduct disorder (CD) and attention deficit/hyperactivity disorder (ADHD), tend to be most prevalent, with anxiety, mood disorders, and substance use disorders also being frequent mental health concerns. Learning disabilities are also pronounced in this population (Kvarfordt et al., 2005). Youth's risk for trauma-related disorders is exacerbated due to their high rates of victimization leading to prevalence rates that are recognized to be as much as 8 times higher than the general population. Relatedly, 92.6% of youth in detention reported exposure to an adverse, potentially traumatizing event, with 84% experiencing more than

one adverse experience (Abram et al., 2004). Mental health difficulties associated with gang involvement are also pronounced (Wolf et al., 2019) with the impact of confinement further complicating the psychiatric presentation of detained juvenile offenders (Chabra, 2017).

This knowledge highlights the importance of accurate, well-formulated mental health diagnoses in order to facilitate appropriate interventions as opposed to a more "one size fits all" model of care. Informed decisions about treatment strategies for detained juveniles depend on accurate information about the actual needs of the youth and the ways in which they will respond to different interventions (Hoge, 1999). Unfortunately, there is a high rate of misdiagnosis and under/overtreatment for youthful offenders, which could have multiple consequences (Martin et al., 2016).

The use of standardized assessments constitutes the most important principle of best practice (Hoge, 2012) and should be a primary component of treatment regardless of setting. Assessment administration is a vital means for detecting mental health impairments in detained youth, especially when acknowledging the amplified presence and complicated nature of their clinical presentation. While screening measures are utilized upon a youth's entrance into the juvenile justice system, clinically meaningful results rarely lead to the administration of a more thorough assessment battery (Hoge, 2012, p. 157).

The primary goal of rehabilitation within juvenile justice is to reduce future recidivistic behavior; however, an estimated recidivism rate of 50% was identified for youth who are institutionalized and do not receive quality mental health services (Swank & Gagnon, 2016). While inconsistencies regarding the definition of "quality mental

health services" exist, such services can only be provided when a well-established diagnosis and subsequent deficits inform an individual's treatment. Hoge (2012) further substantiated this notion, as he stated, "Ample research now exists to show that justice systems that depend on structured and validated assessment procedures are more effective in producing reduced reoffending rates than those that do not use these procedures" (p. 157).

The preceding discussion establishes the critical importance of accurate diagnosis and effective treatment in juvenile offenders, as well as the limitations that exist in current practices. As such, the purpose of the following review is to address the weaknesses and shortcomings of mental health practices within juvenile correctional facilities while elaborating on the need for assessment and diagnosis when identifying the treatment needs of detained youth. The components that constitute effective and comprehensive evaluations for detained youth will be discussed, as well as their relevance to the understanding of antisocial behavior.

The remainder of this study is organized into five chapters and a bibliography. Chapter 2 delineates the research design and methodology of the study. Chapter 3 presents a thorough review of the literature that bridges the gap between mental health practices in juvenile corrections and the importance of diagnostic clarity through comprehensive mental health evaluations. A framework for mental health evaluations in juvenile corrections is outlined in Chapter 4. Two illustrative cases are provided in Chapter 5, as well as a discussion of the findings as they apply to the target population. Limitations of this study and the conclusion comprise the final chapter.

Chapter 2: Methodology

Research for the purpose of this study was obtained from databases including PsycINFO, PsycARTICLES, PsycBOOKS, and Academic Search Premier (EBSCOhost). First, a general search was conducted to locate reputable articles and journals related to psychology, juvenile offenders, and mental health practices within correctional facilities. The search consisted of a combination of the following key terminology: *juvenile corrections, mental health treatment, mental health assessment, neuropsychological assessment, psychological assessment, diagnostic practices, recidivism, antisocial behavior, incarcerated youth, youthful offenders, ADHD, conduct disorder, mental health treatment outcomes, proactive aggression, reactive aggression, executive functioning deficits, treatment amenability, antisocial behavior,* and *delinquency.*

Articles associated with community-based corrections and diversion programs were automatically excluded from this study, as mental health services provided in these contexts are inherently different in frequency, structure, and implementation. Furthermore, while increased rates of dual diagnosis are prevalent within this population, literature that solely referenced substance use disorders and treatment was also excluded. This research utilized literature that specifically focused on juvenile offenders, males or females aged 21 or under, who are incarcerated in correctional facilities throughout the United States.

Full-text, scholarly articles that were deemed useful and relevant to the research topic were reviewed. The reference lists of the articles were also analyzed, and efforts were made to identify and obtain articles that were appropriate to the topic of interest.

The academic journals that were associated with these citations were noted and subsequent searches were made within these journals to further locate additional research.

An electronic scan of books, or e-books, was also conducted through the university library database. Printed books that were accessible at the time of this study were similarly scanned. Attention was first given to the table of contents of each book, and chapters that were deemed useful for the purpose of this study were further analyzed. In-text citations were noted throughout each reviewed chapter. The reference lists contained in each book were then evaluated for relevance while the full references of each in-text citation were obtained, reviewed, and added to the research literature if deemed useful.

Chapter 3: Literature Review

Rehabilitation continues to be the primary goal of the juvenile justice system. Considerable attention has been given to rehabilitative models that mitigate a juvenile's risk for reoffending behavior. Adult criminal justice systems focus on criminogenic risk factors as a foundation for formulating effective and targeted rehabilitation programs (Wasserman et al., 2003). The risk-need-responsivity (RNR) model (Bonta & Andrews, 2007) is a well-known method for identifying and assessing criminal risk in adult and juvenile offenders to determine an individual's treatment needs (Singh et al, 2014).

The RNR model consists of three main principles. These include criminogenic risk, criminogenic need, and responsivity. According to Bonta and Andrews (2007), the risk principle states that "offender recidivism can be reduced if the level of treatment services provided to the offender is proportional to the offender's risk to reoffend" (p. 5). The need principle focuses on criminogenic needs, or dynamic risk factors that directly correlate to criminal behavior. The "Central Eight" (Bonta & Andrews, 2007) are the eight primary risk factors that are most predictive of criminal behavior and recidivism. These include a history of antisocial behavior, procriminal attitudes, antisocial personality patterns, procriminal associates, education and/or employment, family/marital factors, substance use, and leisure/recreation (Bonta & Andrews, 2007). Lastly, the responsivity principle focuses on the implementation of cognitive-behavioral treatments that decrease procriminal attitudes and behaviors (general responsivity) while considering the individual abilities and strengths of the offenders, or "noncriminogenic needs" (specific responsivity).

Mental Health in Rehabilitation

Youth with mental health concerns are known to score higher on administered risk assessments and have a greater number of criminogenic needs compared to youth with no mental health concerns (McCorminck, 2017). Furthermore, Elkington et al. (2015) concluded that youth with psychiatric disorders reported increased rates of violence 3 and 5 years postrelease from detention and found that mental health difficulties, such as anxiety disorders, mania/hypomania, depression, and disruptive behavioral disorders, were contemporaneous to violence over time (Elkington et al., 2015).

Despite this knowledge, the mental health of juvenile offenders is often neglected and interventions emphasizing rehabilitation are prioritized. Attempts to distinguish "what works" to mitigate reoffending behaviors of detained youth have concluded with inconsistent findings and studies that vary in research methodology, type of justice involvement of the sample population, definition of recidivism, and intervention under investigation.

Results of Pappas and Dent's (2021) recent metareview indicated that, in general, correctional treatments are successful, but there are a multitude of factors that can influence what works and for whom. For instance, interventions provided in secure settings or to serious/violent or sexual offenders were two moderators that were most strongly associated with recidivism reduction (Pappas & Dent, 2021). Surprisingly, although cognitive-behavioral treatments are considered "best practice" and cited as an efficacious intervention for reducing recidivistic behavior (Arvidson, 2019; Brazio et al., 2013; Desai et al., 2006; Henwood et al., 2015; Lipsey, 2009; Pappas & Dent, 2021),

multisystemic therapy (MST) was noted to have a comparatively greater impact on reducing reoffending above and beyond cognitive-behavioral interventions (Pappas & Dent, 2021). With that said, a single type of treatment will not be effective for each and every youth who comes into contact with the justice system.

The substantial rates of recidivism documented throughout the literature clearly indicate that there are aspects of antisocial behavior that are not being adequately addressed through correctional interventions alone. Rates of juvenile reoffending are estimated to range between 70%–90% (Thompson & Morris, 2016). Aizer and Doyle (2015) also found that youthful offenders were 41% more likely to be incarcerated in an adult facility by the age of 25. In line with these findings were outcomes of a study completed by the U.S. Department of Justice (Durose & Antenangeli, 2021) which focused on reoffending patterns over the course of 5 years in 92,100 adult prisoners released in 2012. Overall, 79% of the sample reentered prison for new charges within 5 years of release. Forty-three percent were found to have 10 prior arrests, with the first occurring prior to the age of 24 for 85% of the sample, and before the age of 17 for 30% of the sample. Notably, those with a first arrest prior to the age of 18 were more likely to recidivate compared to those whose first arrest occurred after the age of 18 (Durose & Antenangeli, 2021).

A focus on rehabilitation has limited applicability for treating the substantial and heterogeneous mental health problems of juvenile offenders, which are likely the root cause of the externalizing behavior problems inherent to this population. Although youth whose criminogenic and mental health needs are addressed simultaneously in treatment are less likely to recidivate (Basanta et al., 2018; McCormick et al., 2017; Skeem et al.,

2014), minimal reference has been made to the effectiveness of cognitive-behavioral therapy (CBT), or any other treatment modality, when implemented to youth with identified mental health concerns or as part of a more comprehensive mental health treatment plan. In fact, recent attempts to remedy the significant gap in the literature validated the importance of psychological treatment in reducing reoffending behavior (Beaudry et al., 2021). Notwithstanding the extensive support CBT receives for the treatment of offenders, Beaudry et al.'s (2021) meta-analysis, which involved only randomized controlled studies, found no significant association between CBT-based interventions and rates of recidivism (Beaudry et al., 2021).

Goshe (2019) referred to mental health treatment efforts for juvenile offenders as "myopic" due to the narrow view of rehabilitation that has ultimately "lost sight of the context in which delinquency develops and persists" (p. 561). Current rehabilitation efforts commonly utilize a "pills and programs" method consisting of CBT and an overuse of psychotropic medication (Goshe, 2019). Polypharmacy is identified as a relatively standard practice in juvenile corrections (Penn, 2008), which includes the use of "atypical antipsychotic drugs, mood stabilizers, sedative/hypnotics, stimulants, and other combinations of psychotropic agents for 'acting out' or to counter the adverse effects of other psychotropic agents" (p. 282). These medications are often prescribed without any formal evaluation or diagnosis, or any of the "medical protocols and procedures that protect the rights of patients" (Britton, 2016, p. 2).

The narrow perspective of correctional treatments fails to acknowledge that antisocial behavior, or conduct problems, can be the result of many different mental health disorders and that understanding the processes underlying the externalized

behaviors in detained youth is crucial for successful rehabilitation. Treatment must start with "diagnosing the condition that drives the problem" and subsequently "matching interventions to the causal process" (Steiner et al., 2003, pp. 299–300). Although mental health screening, assessment, and treatment have been mandatory components of juvenile justice reform since 2000 (Chabra, 2017), research regarding the use of standardized assessment procedures to identify the diagnoses and subsequent mental health needs of detained youth is virtually nonexistent.

Missed and Misdiagnosis

CD is the most frequently diagnosed condition within this population (Caldwell et al., 2019; Listenbee, 2012). Certainly, youth adjudicated to secure facilities are at an increased risk for disruptive behavioral problems; however, criminal behavior does not necessarily equate to a primary diagnosis of CD (Zeola et al., 2017). CD is a diagnosis that encompasses a range of severe antisocial and aggressive behaviors and is a known antecedent of the more pervasive diagnosis of antisocial personality disorder (Raine, 2018).

For such a diagnosis to be considered, the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association [APA], 2013) requires "a repetitive and persistent pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated" (p. 469). In order to meet Criterion A, three of 15 criteria must have been present in the past 12 months, with at least one occurring in the last 6 months. According to the *DSM-5*, these criteria include antisocial behaviors involving aggression to people and animals (e.g., bullying, physical cruelty, stealing), destruction of property, deceitfulness/theft (e.g., lying,

trespassing/breaking into others' property), and/or a serious violation of the rules, such as running away, breaking curfew, and truancy (p. 469). Criterion B further requires that "the disturbance in behavior causes clinically significant impairment in social, academic, or occupational functioning" (APA, 2013, p. 470).

The rates of CD documented throughout the literature are astonishing. Caldwell et al. (2019) concluded that ADHD was present in 39% of youth in this sample, oppositional defiant disorder (ODD) in 47%, and CD in 95%. Mood disorder symptoms were found in 19%, which largely related to depression, while 1% were classified with a psychotic disorder and 13% with an anxiety disorder. Posttraumatic stress disorder (PTSD) was reported in 6% of the sample, which is certainly lower than what would be expected in detained youth. Incarcerated youth are often raised in disadvantaged neighborhoods and therefore are at a heightened risk for exposure to multiple adverse experiences (Listenbee, 2012), including sexual, physical, or emotional abuse; exposure to domestic or community violence; and abandonment or neglect (Finkelhor et al., 2005; Ford et al., 2008; Wolf et al., 2018).

The clinical presentation of incarcerated youth is complex and complicated by several secondary factors, such as the impact of gang involvement, the detrimental nature of detainment, and the presence of co-occurring disorders. Youth in correctional facilities are known to suffer from a range of difficulties, including mood disorders, anxiety disorders, learning disabilities, trauma-related disorders, intellectual disabilities, and neurodevelopmental disorders (Marsh, 2016), all of which can co-occur with CD and exacerbate behavioral difficulties. A diagnosis of CD should not be discounted as a primary concern for some; however, it may not be the primary, or most debilitating,

problem for many youth. In fact, when controlling for symptoms of CD, 70% of females and 60% of males continued to meet criteria for another psychiatric diagnosis (Teplin et al., 2002).

Although the *DSM-5* (APA, 2013) serves as a guide for clinicians, it is fundamentally flawed. There is significant symptom overlap across many of the *DSM-5* disorders, especially those whose overt behaviors can lead to misconduct and delinquency. In particular, behaviors including irritability, anger, physical and verbal aggression, truancy, lying, property destruction disruptiveness, low frustration tolerance, and recklessness are often found in youth with CD, but can also be the result of ADHD, PTSD, adjustment disorder, bipolar spectrum disorder, prenatal alcohol exposure, or even autism spectrum disorder. With that in mind, while each of these diagnoses can lead to conduct problems, it would be incorrect to preclude a primary diagnosis of CD.

Hofmann (2014) described the *DSM-5* as a "complex system" because "each disorder is defined by a number of interrelated symptoms and no symptom is specific to any particular disorder" (p. 580), which leads to an increased likelihood of false-positive diagnoses. Ultimately, the *DSM-5* assumes that mental disorders are distinct from one another and that a disorder is present when an individual meets an arbitrary number of behaviorally defined criteria (Koziol et al., 2013). Its overlapping symptoms and lack of acknowledgement for etiological factors (Angold et al., 1999) makes it difficult to determine the primary diagnosis due to high rates of comorbidity (Hyman, 2010; Wakefield, 2016).

As such, the overrepresentation of CD diagnoses for detained youth could very well be the result of current diagnostic practices combined with the inherent flaws of the

DSM-5 behavioral criteria. Clinician bias is also known to unconsciously skew clinical judgment, especially in the absence of complete and accurate information. Racial disproportionality in mental health diagnoses across racial and ethnic groups is further evidenced in the literature, whereby Black males are more likely than White and Hispanic youth to be diagnosed with CD than any other behavioral disorder (Baglivio et al., 2017; Fabrega et al., 1993; Liang et al., 2016; Mizock & Harkins, 2011). According to research, detained youth are also more likely to receive a CD diagnosis (Drerup et al., 2008) over any other psychiatric disorder, with some estimates nearing 40% for this population (Teplin et al., 2002).

Assessment Practices in Juvenile Corrections

Diagnostic accuracy is the foundation of successful treatment, yet the current methods utilized by the juvenile justice system to diagnose and identify the treatment needs of youthful offenders are either flawed, not conducted at all, or are conducted by unqualified staff (Swank & Gagnon, 2016). Based on the available literature, screening measures appear to be the primary method used to identify the mental health issues of youth during the intake process. However, there are marked distinctions between "screening" and "assessment" that warrant clarification.

Screening primarily includes the completion of brief self-report, symptom-based instruments that are administered to every youth during the intake process. These measures are a cost-effective, efficient, and quick way to identify those in need of immediate clinical attention, such as when suicide precautions are necessary. More generally, screening measures are utilized to detect the possibility that a condition exists; however, they are not sufficient for making diagnostic or treatment decisions when used

as standalone measures (Carlson, 2013; Grisso et al., 2005, p. 95). With regard to diagnostic efficiency, screening measures are inherently known to have high sensitivity and only low to moderate specificity, which translates into an increased number of false-positive diagnoses.

Poor diagnostic conclusions are made when they are based on scores from even well-validated screening measures due to lack of specificity for diagnosis. For example, while an individual might present with symptoms of depression, administering a screening measure would detect the presence of depressed symptoms, yet fail to detect other possible conditions with similar clinical presentations. Furthermore, screening measures are rarely equipped with embedded validity scales to detect noncredible responding, such as the underreporting or overreporting of symptomatology. Response distortion should be a primary consideration when reviewing screening measure results within this population, especially because outcomes on these measures lead to treatment-based decisions.

According to the American Psychological Association (2014), screening measures:

- can indicate a need for further evaluation or preliminary intervention;
- may be administered as part of a routine clinical visit ;
- are used to monitor treatment progress, outcome, or change in symptoms over time;
- may be administered by clinicians, support staff with appropriate training, an electronic device (such as a computer), or self-administered;

- entail that support staff follow established protocol for scoring with a preestablished cut-off score and guidelines for individuals who score positive; and
- are neither definitively diagnostic nor a definitive indication of a specific condition or disorder .

Alternatively, psychological assessment involves the integration of data obtained from an administered battery of psychological tests. These data are integrated with information from additional sources, which should include behavioral observations, background information, and health/mental health records (Bornstein, 2017). Ultimately, assessments offer a comprehensive understanding of a person's functioning to inform diagnosis. As stated by the American Psychological Association (2014), assessment:

- can aid in diagnosis/treatment planning in a culturally competent manner;
- can identify psychological problems and conditions, indicate their severity, and provide treatment recommendations;
- integrates results from multiple psychological tests, clinical interviews, behavioral observations, clinical record reviews, and collateral information;
- may include screening measures that are used in conjunction with other information from the assessment, providing a broader context for interpreting results;
- may use screening results to determine the choice of instruments for assessments; and
- may cover domains of functioning, such as memory and language, visual and verbal problem solving, executive functioning, adaptive functioning,

psychological status, capacity for self-care, relevant psychosocial history, and others needed to respond to the referral questions.

A standard psychological assessment typically includes (a) a thorough clinical interview, (b) a measure of broad cognitive ability, and (c) measures for evaluating emotional and personality functioning, including a self-report inventory, in addition to narrow, symptom focused measures, or projective techniques (Wright, 2011). As information is obtained and hypotheses are reformulated, additional measures should be added to the test battery.

A single research study was found when attempting to locate literature addressing the assessment practices used in the juvenile justice system generally, and secure correctional facilities specifically. Swank and Gagnon (2017) evaluated the mental health screening and assessment procedures in juvenile correctional facilities across the United States. Of the 189 facilities that met inclusion criteria for the study, less than half participated by completing the survey (n = 94, 49.7%) while only 20 facilities (21%) specified "formal" instruments administered when conducting "more extensive mental health assessments" (Table 1). Because this was the first study to generate a list of administered measures, for the purposes of the current research, these results will serve as a guide for conceptualizing current assessment practices in juvenile correctional facilities.

Based on results of Swank and Gagnon (2017), a total of 38 instruments were specified by the 20 facilities. Substance abuse and suicide risk measures are commonly administered in the absence of comprehensive psychological assessments and therefore will not be discussed. Of the measures identified in Table 1, the Youth Level of Service/Case Management Inventory (YLS/CMI; Hoge & Andrews, 2011) and Youth

Assessment Screening Instrument (YASI; Orbis Partners, Inc., 2007) are intended to identify a youth's risk level and treatment needs as it relates specifically to rehabilitation efforts rather than for the identification of mental health symptoms. The Structured Assessment of Violence Risk in Youth (SAVRY; Borum et al., 2006) is based on professional judgment and utilized to identify an adolescent's risk for committing future violent acts and assist with risk management and intervention planning (Powell, 2010). This measure is typically utilized during court ordered risk assessments and not typically included in a standard test battery.

Table 1

Formal, Extensive Mental Health Assessments Used by Juvenile Correctional Facilities

Area	Assessment	n
General Assessment		
	Global Appraisal of Needs	1
	Massachusetts Youth Screening Instrument	2
	Millon Adolescent Clinical Inventory	1
	Mini International Neuropsychiatric Interview	3
	Patient Health Questionnaire	1
	Structured Clinical Interview for DSM	1
	Voice Diagnostic Interview Schedule for Children	1
	Youth Assessment Screening Instrument	1
ADHD		
	Conners for ADHD	2
	Vanderbilt ADHD Scales	1
Depression and Anxiety		
	Beck Depression Inventory	4
	Burns Anxiety and Depression Inventories	1
	Center for Epidemiologic Studies Depression Scales	1
	Reynolds Adolescent Depression Scale -2	1
	Screen for Child Anxiety Related Disorders	1
Personality		
	Jesness Inventory	1
	Millon Adolescent Personality Inventory	2
	Minnesota Multiphasic Personality Inventory – Adolescent	4
	Personality Assessment Inventory	1
	Personality Inventory for Youth	1
	Sixteen Personality Factors	1
Violence/Anger		
	Structured Assessment of Violence Risk in Youth	2
Trauma		
	Trauma Symptom Checklist for Children	3
	Trauma Symptom Inventory	3
	Life Events Checklist	2
	PTSD Checklist – Civilian	2

Area	Assessment	n
Intelligence		
	Kaufman Brief Intelligence Test	2
	Wechsler Abbreviated Scale of Intelligence	2
	Wechsler Intelligence Scale for Children	1
Academics		
	Woodcock-Johnson Test of Achievement	1
Other		
	Adolescent Dissociative Experiences Scale	1
	Bender Visual-Motor Gestalt Test	1
	Youth Level of Service/Case Management Inventory	1

Note. Adapted with permission from "A National Survey of Mental Health Screening and Assessment Practices in Juvenile Correctional Facilities," by J. Swank and J. Gagnon, 2017, *Journal of Research and Practice in Children Services, 46,* p. 387.

Broad Symptom Measures

The Global Appraisal of Individual Needs (GAIN; Dennis, 1999) was identified; however, there are multiple versions and the specific measure was not identified. The GAIN – Initial (GAIN-I) is quite comprehensive and would provide valuable information pertaining to treatment approach if utilized as part of the initial intake process. Alternatively, the GAIN – Short Screener (GAIN-SS) is relatively brief and quick to administer, though it could be useful when attempting to identify the presence of both substance use and co-occurring mental health disorders.

The Mini International Neuropsychiatric Interview (MINI; Sheehan et al., 1998) is classified as a structured diagnostic interview intended to detect Axis-I disorders. Psychometric properties of the MINI are favorable; however, it does not offer information regarding symptom severity, nor does it provide information regarding cognitive functioning. As such, using this measure as an initial screener is beneficial but not diagnostic when administered as a standalone assessment, as it may provide unnecessary referrals for treatment (Peters et al., 2008)

Increased recognition of the high rates of mental health impairments faced by youthful offenders facilitated efforts to improve the nonstandardized and general absence of screenings within these facilities. Emerging from efforts to improve the nonstandardized and overall absence of screening measures within juvenile justice facilities was the Massachusetts Youth Screening Instrument – Second Version (MAYSI-2; Grisso & Barnum, 2001). The MAYSI-2 is a brief mental health screening tool that is normed for use in juvenile correctional facilities. It is intended to be used at the point of intake to identify the potential need for "immediate services," such as a more extensive psychological evaluation or crisis intervention. It is considered a cross-cutting self-report inventory of mental health symptoms, but it is not consistent with diagnoses contained in the *DSM-5* (APA, 2013).

The MAYSI-2 is not a diagnostic tool, nor is it appropriate for treatment planning purposes (Grisso et al., 2012) for several reasons. First, it fails to consider situational factors influencing a youth's endorsements at the time of their entry into detention (Archer et al., 2010), likely leading to treatment decisions on symptoms that are reflective of state, rather than trait, symptomatology. The MAYSI-2 has low specificity, leading to decisions based on false-positive symptoms if used as a standalone method of determining diagnosis. Therefore, without a follow-up evaluation of symptoms, treatment would be provided to youth who were falsely classified as having mental health symptoms. Furthermore, the MAYSI-2 is not equipped with embedded validity scales, which makes it impossible to detect potential under or overreporting of symptomatology. This is particularly relevant to justice-involved youth, as biased responding is

increasingly likely due to a lack of insight or an unwillingness to disclose the presence of mental health difficulties (Floyd & Tobin, 2010; Swank & Gagnon, 2017).

Of additional relevance to this population, Archer et al. (2010) determined that the Traumatic Experiences (TE) scale of the MAYSI-2 lacks a statistically significant relationship to reported sexual or physical abuse in male youth. Ford et al. (2012) also concluded that more than symptom presentation and elevations on the MAYSI-2 TE scale is needed when it comes to identifying detained youth with complex trauma histories. Ultimately, the MAYSI-2 TE scale is regarded as having subpar specificity and sensitivity (Ford et al., 2008; Kerig et al., 2011), which makes it even more problematic if the presence of trauma was ruled in or out as a diagnosis based on results of this measure.

Achievement and Cognitive Measures

Achievement and cognitive measures were reported as well. Only one facility identified administering an outdated version of the Woodcock Johnson Tests of Achievement, which is currently in its fourth edition (WJ-IV; Schrank et al., 2014). The Bender Visual-Motor Gestalt Test – II (Brannigan, 2003) was identified by one facility and is a measure of visual/perceptual-motor integration that is often integrated into neuropsychological test batteries.

Three different measures of intelligence were identified in Swank and Gagnon (2017). Two of these are shortened versions of more extensive tests including the Weschler Abbreviated Scale of Intelligence – Second Edition (WASI-II; Wechsler & Zhou, 2011) and the Kaufman Brief Intelligence Test – Second Edition (KBIT-II; Kaufman & Kaufman, 2004). Both measures provide composite scores for verbal and nonverbal abilities, as well as an overall estimate of general intelligence. Understanding

the cognitive functioning of detained youth is highly relevant to their treatment success and administration of even brief cognitive measures offers valuable information regarding their individual needs. Administration of the full intelligence tests allows for a more comprehensive picture of a youth's strengths and weaknesses; however, only one facility reported administering the Wechsler Intelligence Scale for Children – Fourth Edition (WISC-IV; Wechsler, 2003), which was replaced by its predecessor in 2014 (WISC-V; Wechsler, 2014) and is therefore outdated.

Personality/Emotional Functioning

The Millon Adolescent Personality Inventory (MAPI; Millon et al., 1982) is an outdated measure and has since been replaced by the MACI, which was also expanded to include measurement of psychopathology (Baum et al., 2009). Furthermore, the MAPI has minimal utility for delineating the vast and complex mental health issues within juvenile justice populations, as it was normed on samples of adolescents that were primarily free of clinical difficulties. Specifically, the "clinical" population consisted of 430 adolescents who were involved in inpatient or outpatient evaluations, or treatment services, and the "normal" sample was comprised of 2,157 adolescents from varying socioeconomic backgrounds. As stated by Cansler (1986), the MAPI is a useful test "particularly when information about normal functioning is sought" (p. 470).

Similar to the MAPI, the 16 Personality Factors Questionnaire (16PF; Cattell et al., 1993) is not clinically meaningful for use with juvenile offenders, as it is considered an assessment of "normal" personality and is inadequate for measuring the constructs of abnormal personality functioning (Carrington-Rotto, 1995; McLellan, 1995).

Several of the measures listed in Table 1 could be useful for determining a youth's current mental health functioning when integrated into a comprehensive assessment. These measures include the Personality Assessment Inventory (PAI; Morey, 2007b) or its adolescent counterpart (PAI-A; Morey, 2007a), the Minnesota Multiphasic Personality Inventory – Adolescent (MMPI-A; Butcher et al., 1992), and the Millon Adolescent Clinical Inventory (MACI; Millon et al., 1993), which is now on its second edition (MACI-II; Millon et al., 2020). While these measures have psychometric qualities that may make one more applicable than the other depending on the testing concern, all are well-validated, global inventories of personality and psychopathology. They are equipped with embedded validity scales to detect response distortion and can add invaluable information regarding personality and emotional functioning when integrated into a comprehensive assessment battery.

The Jesness Inventory – Revised (JI-R; Jesness, 2003) was created specifically for use with juvenile delinquents. It was normed on 3,421 nondelinquent youth from within the school system, as well as 949 delinquent youth who were entering detention through a reception or intake center. While there are weaknesses in the JI-R's ability to detect random responding (Pinsoneault, 2006), it provides useful information regarding personality functioning and subsequent treatment implications for youth and is therefore a useful measure to include when formulating a comprehensive test battery for detained youth.

The Personality Inventory for Youth (PIY; Lacher & Gruber, 1995) is a true/false self-report measure that assesses emotional and behavioral adjustment difficulties in adolescents aged 9–18 years old. Norms of the PIY are based on a sample of 2,327

regular education students with a sample of 1,178 clinically referred students being used for individual scale development. Females and higher socioeconomic status families were reportedly overrepresented in the sample with children from single-parent homes being underrepresented. Despite statistically significant differences being found on at least one scale for each of the tested variables when using a demographically balanced subsample, the author only generated separate norms for gender. As such, caution needs to be taken when administering this measure in a population that is largely comprised of males from diverse backgrounds. A "weak correspondence" was identified between clinician-rated ODD or CD and associated scales of the PIY in a sample of detained youth (Branson & Cornell, 2008) while another study found that the PIY has a limited ability to differentiate juvenile delinquents from other groups (Tyndall, 2001).

The PIY does have positive qualities that would make it useful with juvenile delinquents, such as its third grade reading level, four embedded validity scales to detect invalid profiles and response bias, in addition to its sufficient criterion, content, and construct validity (DeStefano, 1995). There was also some indication of the PIY's usefulness in determining the presence of mood difficulties, particularly depression and bipolar disorder. Regardless, as with all measures, the PIY can quickly lead to misdiagnosis when used as a standalone measure and caution should be taken when interpreting results, even when used in conjunction with additional assessment instruments.

Trauma

The Trauma Symptom Inventory – Second Edition (TSI-2; Briere, 2011) measures both acute and chronic traumatic stress symptoms in adults aged 18–90 years

old. The TSI-2 includes validity scales to measure the misrepresentation and overreporting of trauma symptomatology and is known to have strong psychometric properties, which makes it a useful and reliable instrument (Kulstad, 2011). However, its standardization sample is based on a nonclinical population, and although psychometrics of the TSI-2 were assessed across clinical and college samples, as well as a sample of incarcerated women, there do not appear to be studies validating its use for male youthful offenders. Furthermore, the TSI-2 is normed on individuals aged 18 and over, which limits its usefulness for a significant portion of the juvenile population. With that said, the Trauma Symptom Checklist for Children (TSCC; Briere, 1996) is intended for children and adolescents aged 8–16, which makes it more applicable for a majority of the target population. The TSCC is known for assessing complex trauma, has a large normative sample, and includes scales to detect skewed response styles. However, this measure has not yet been researched for use with juvenile offenders. Items of the TSCC are also highly face valid and the symptoms being assessed are not fully reflective of PTSD criteria identified by the *DSM-5* (APA, 2013), as there appears to be an overemphasis on intrusive symptoms (Ohan et al., 2002). Overall, the TSCC has questionable use for detained youth when used as the sole means for determining symptom presentation (Boyle, 2003), though the findings may be useful when integrated into a comprehensive evaluation.

The Life Events Checklist (LEC; Weathers, Blake, et al., 2013) and Posttraumatic Checklist for DSM-5 (PCL-5; Weathers, Litz, et al., 2013) are screening measures consistent with *DSM-5* (APA, 2013) criteria for PTSD. The LEC and PCL are typically used in tandem, as the LEC assists with identifying potential exposure to traumatic events

that would meet Criterion A of the *DSM-5*. Once established, the PCL is then completed to determine whether the presence and severity of reported symptoms meet the cutoff for significance.

There are no current studies that evaluate the reliability of the LEC or PCL-5 for detecting possible PTSD in detained youth, as such consideration is largely geared toward community and military personnel (Blevins et al., 2015; Bovin et al., 2016; Wortmann et al., 2016). Ultimately, administration of a trauma screening measure to detained youth is unlikely to be very useful, especially because a majority of the population would endorse experiencing trauma-related events. As a result, measures that only screen for trauma-related symptoms would hardly assist with "triaging" youth to determine their needs upon intake.

Depression/Anxiety

Several screening measures for depression and generalized anxiety were identified. The Beck Depression Inventory-II (BDI-II; Beck et al., 1996) consists of 21 items measuring symptoms of a depressed mood and is consistent with *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; APA, 1994) criteria. It includes items related to sadness, pessimism, loss of interest, agitation, self-criticism, suicidality, and worthlessness, among several others. The BDI-II has a quick administration time and a straightforward approach for scoring (Arbisi, 2001), which makes it a popular instrument for assessing the severity of depressed symptoms. Furthermore, the BDI-II has a long history of research dating back to its predecessor, the BDI, which was introduced nearly 50 years ago. As such, its psychometric properties have been extensively reviewed, concluding that the BDI-II has good reliability and

sensitivity. However, despite its good sensitivity, the suggested cutoff scores result in only moderate specificity (Arbisi, 2001), which increases the likelihood of misdiagnosing youth.

The BDI-II is a self-report screening measure that lacks validity indicators. As a result, it impossible to detect response distortion and even more impossible to confirm that symptom endorsement, or lack thereof, is a true portrayal of a youth's mental health functioning. Caution should also be taken when interpreting results for detained youth, as cut scores were derived from an outpatient sample of 500 participants, of which 63% were female and 91% identified as White. A convenience sample of 120 college students was also used which was described as "predominantly White" and 56% female (O'Hara et al., 1998). Aside from one study that assessed the psychometric properties of the BDI-II with incarcerated, young adult population aged 18 to 21 years old (Palmer & Binks, 2008), similar studies on juvenile offenders could not be located. As such, the generalizability of the BDI-II for detained youth may be questionable.

The remaining screeners for anxiety and depression include the Reynolds Adolescent Depression Scale – Second Edition (RADS-2; Reynolds, 1987), Screen for Child Anxiety and Related Disorders (SCARED; Birmaher et al., 1997), Burns Anxiety and Depression Inventories (Burns, 1989), Adolescent Dissociative Experiences Scale (ADES; Armstrong et al., 1997), Center for Epidemiologic Studies Depression Scales (CES-D; Radloff, 1977), and Patient Health Questionnaire (PHQ-9; Spitzer et al, 2000), all of which are similar to the BDI-II in that they are brief, self-report, symptom-specific measures that should not be used as standalone measures for determining diagnosis and subsequent treatment in juvenile offenders.

ADHD

Methods for detecting symptoms of ADHD were identified as well. The Vanderbilt Diagnostic Rating Scale for ADHD (Wolraich, 2003) is a parent (VADPRS) and teacher (VADTRS) rating measure to assess symptoms of ADHD in children aged 6–12 years old. Given its use for younger children that represent a small portion of detained youth, there will be no additional discussion regarding this measure.

Although the test version was not clearly stated, it will be assumed that Swank and Gagnon (2017) are referring to the Conners – Third Edition (Conners 3; Conners, 2008). The Conners-3 is a multi-informant rating scale used primarily to identify symptoms of ADHD in individuals aged 6–18 years old. It includes forms for parents and teachers, as well as a self-report, which is useful when attempting to gain information from multiple sources though this feature will likely have limited or minimal relevance in a correctional setting. The Conners-3 content scales assist with differentiating the ADHD subtypes (e.g., hyperactive-impulsive, inattentive) and include scales that measure Learning Problems, Aggression, Executive Functioning, and Peer/Family Relations. Additionally, the Conners-3 includes scales that measure behaviors consistent with *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV-TR*; APA, 2000) criteria for CD and ODD, screening items for anxiety and depression, as well as three validity scales to detect underreporting, overreporting, and response inconsistency. The Conners-3 is based on a diverse sample that is representative of both socioeconomic status and geographic location. Data were also stratified by age, gender, and race/ethnicity. Gender-based norms is a positive quality of this measure for detained youth as they are predominantly male. Overall, the psychometric properties of the

Conners-3 have been found to be quite strong and could be a useful measure to integrate into an assessment battery for detained youth, though its utility with this population has yet to be established.

Critique of Current Practices

Results of Swank and Gagnon (2017) suggest that assessment practices in juvenile correctional facilities are hardly adequate to make clinically informed diagnostic and treatment decisions for detained youth. Using a single assessment method, such as an interview or brief screening measure, will lead to an incomplete picture and faulty conclusions that will ultimately guide treatment planning throughout their detainment (Meyer et al., 2001). As stated by Grisso et al. (2005):

> One can argue that ineffective measures can be worse than no measures at all, given the waste of resources that could be used to meet other important needs of youths. Proper identification of youths' mental health needs and risk of harm requires taking the time to make careful selections and to position the right tools within an effective screening and assessment process. (p. 19)

Efforts have been made to outline the most effective evaluation methods for the target population (Morgan-D'Atrio, 2012); however, the available research continues to portray a heavy reliance on screening measures that can easily overlook a wide range of symptoms or disorders contributing to the conduct problems of incarcerated youth. The following discussion will provide a framework for evaluating the mental health functioning of youthful offenders.

Chapter 4: A Framework for Mental Health Evaluations

Comprehensive mental health evaluations constitute best practice for informing treatment. As evidenced thus far, current diagnostic practices in juvenile correctional facilities foster irrational, unsupported, and faulty conclusions about the needs of youth. A multimethod approach to mental health evaluations allows for an in-depth understanding of an individual's functioning and provides valuable information about treatment compliance and interventions that would prove most beneficial (Lansing et al., 2014; Reinstein & Burau, 2014). In addition to thorough behavioral observations, the following components should be included in mental health evaluations for juvenile offenders.

Background History and Clinical Interview

A thorough background history is an essential component to the evaluation process. Information pertaining to family history, social history, academic history, developmental history, medical history, mental health treatment history, and current mental health functioning are all relevant when attempting to conceptualize data obtained throughout the assessment process. As stated by Groth-Marnet and Wright (2016), "The single most important means of data collection to provide context for psychological evaluations is the assessment interview. Without interview data, most psychological test results are meaningless" (p. 77).

Clinical interviewing methods vary from structured to semistructured to unstructured (Groth-Marnet & Wright, 2016), and depending on the reason for testing, a clinician might prefer one format over the other. Structured interviews are highly standardized, require adherence to the administration guidelines, and consist of questions

that typically elicit a yes or no response. These interviews allow for normative comparison to assist in the clinical decision-making process and can be focused on a single disorder or a wider range of symptomatology. One of the most popular instruments is the Structured Clinical Interview for DSM-5 Disorders (SCID-5; First, 2016), which aligns with symptom criteria listed in the diagnostic manual. While there are positive aspects of conducting interviews in a structured format, they restrict follow-up questioning and do not allow for the same degree of flexibility inherent to semistructured or unstructured interview formats (Barry et al., 2013; Segal, 2019).

The interview component of an evaluation is especially relevant when acknowledging antisocial personality as a neurodevelopmental condition. As argued by Raine (2018), individuals with severe antisocial personalities are known to exhibit a difficult temperament early in childhood, which eventually progresses into oppositional/defiant behavior followed by a diagnosis of CD in adolescence and antisocial personality disorder (APD) in adulthood. Support for this neurodevelopmental perspective is consistent with the Moffitt's (1993) trademark theory of antisocial behavior. Specifically, the developmental taxonomy delineates childhood onset from adolescent-limited antisocial behaviors. Childhood onset is typically indicative of life-course persistent antisocial behavior, which begins in early childhood and likely results from interactions between a child's neuropsychological functioning, temperament, parenting, and environmental factors (Tussey, 2013).

With that in mind, distinguishing the age of onset of a youth's conduct problems needs to be prioritized during the interview process for all detained youth. Making this distinction is important, as youth with childhood-onset conduct problems typically

display more severe forms of aggression and violence that persist into adulthood than those whose conduct problems emerge in adolescence. Additionally, childhood-onset conduct problems have a higher risk of co-occurring disorders (Johnson et al., 2015), particularly with ADHD (Raine, 2018; Silberg et al., 2015). Due to the consistent research findings and significance of the divergent pathways toward antisocial personality, the *DSM-5* (APA, 2013) now includes specifiers to consider when diagnosing CD. The childhood-onset specifier requires the presence of at least one symptom of CD before the age of 10, while the adolescent-onset subtype requires the presence of symptoms that emerge after the age of 10 (APA, 2013, p. 470).

Multirater Questionnaires

Obtaining data from other informants, such as teachers and caregivers, can add valuable information to overall evaluation. While such an approach may be standard in a community-based setting, successfully implementing this method in a correctional setting is confronted by several challenges. First and foremost, obtaining information from multiple informants would be difficult, as parental involvement is often limited. There is also a high probability that many detained youth were placed in foster care at some point in their life. This often involves placement with multiple families and an equal number of school transfers. Obtaining information from caregivers in the system or teachers who participated in the youth's academic advancement may compromise the value of teacher or caregiver reports, as they would portray a mere snapshot of the youth's functioning.

Additionally, the secure environment can skew rating scale results in two ways. If staff (e.g., teachers or counselors) were to provide information or complete rating scales, the typical structure and routine of a prison can very well lead the rater to underreport the

severity of impairment that a youth would typically exhibit when in a less-structured environment. Overreporting is equally problematic depending on potential comorbidity and a youth's ability to maintain emotional and behavioral stability in the challenging and provoking environment of a prison. Of course, any additional information will contribute to the predictive value of the overall evaluation and assist in establishing a historical pattern of emotional or behavioral problems for a particular youth. As such, when caregivers or other reliable informants are available, obtaining relevant background information and having them complete any relevant questionnaires or rating scales is imperative.

There are numerous self-report questionnaires that also have alternate forms for informants (e.g., parent, teacher). In particular, the Behavior Assessment System for Children – Third Edition (BASC-3; Reynolds & Kamphaus, 2015) measures the behavioral and emotional functioning of children aged 2–21 years old, though the adolescent version for ages 12–21 years old would be utilized for the target population. The BASC-3 is comprised of several composite scales that measure internalizing problems (e.g., anxiety), externalizing problems (e.g., conduct problems, aggression), and adaptive skills (e.g., activities of daily living). It also has embedded validity scales to detect response inconsistency and overreporting. In addition to identifying areas of behavioral and emotional difficulty, the BASC-3 also identifies areas of strength, which would be helpful to acknowledge and integrate throughout the treatment process.

Emotional and Personality Functioning

Aside from a few well-known projective measures (e.g., Rorschach, Thematic Apperception Test), many psychological tests are self-report instruments. Self-report

instruments vary greatly and can depend on several characteristics, including the constructs being measured, the format of the questions, and whether they are narrowband or broadband measures. Narrowband measures are typically geared toward identifying the presence and severity of a single disorder or symptom (Weiner & Greene, 2017, p. 77). Symptom-based measures often weigh each item response to obtain a total score that can be compared to a "cutoff score" that indicates the presence of symptoms consistent to those with an established clinical diagnosis. The items on symptom scales are often face valid and align with *DSM-5* (APA, 2013) criteria for the disorder in question. As such, the examinee can easily infer what the questions are measuring, which could very well influence their approach to responding.

On the other hand, measures that are broadband, or multidimensional, provide a global picture of psychological functioning and the presence of psychopathology (Weiner & Greene, 2017, p. 77). A positive quality of many multidimensional inventories is that they are equipped with embedded validity scales to detect the presence and degree of response bias, which makes these a favorable source of data collection throughout the assessment process. Items that comprise multidimensional inventories make it difficult for the client to discern what the test is measuring, as many of the test items do not fit neatly into a diagnostic category. This is because most multidimensional measures rely on the "profile" generated by a cluster of responses rather than the presence or absence of a particular disorder or symptom (Wright, 2011, p. 65).

Overall, multidimensional measures are a favorable means for assessing emotional and personality functioning in youthful offenders. These include the PAI-A/PAI or the MMPI-A/MMPI-2, which are both highly researched and widely used

instruments. As discussed, the JI-R or MACI are also appropriate and should be considered alternative options when administration of the MMPI or PAI is not feasible. When significant elevations are found on the scales comprising the multidimensional measure, narrowband measures should be administered as a means of follow up. For instance, if the Anxiety-Related Disorders subscale measuring posttraumatic stress is elevated, administering the LEC and PCL-5 would provide additional evidence for ruling out or diagnosing PTSD.

Specific Narrowband Measures

In addition to Criteria A, B, and for CD, the *DSM-5* (APA, 2013) includes the "with limited prosocial emotions" specifier to consider when diagnosing CD. The purpose of this specifier is to identify youth who present with affective and interpersonal deficits, such as interpersonal callousness and a lack of empathy and remorse, that are characteristic of psychopathy in adulthood. According to the *DSM-5*, the "with limited prosocial emotions" specifier is met when a youth demonstrates two out of the four listed characteristics for at least 12 months across multiple settings. These include "lack of remorse or guilt," "callous-lack of empathy," "unconcerned about performance," and "shallow or deficient affect" (APA, 2013, pp. 470–471).

Despite the marked rates of CD diagnoses in juvenile offenders, Swank and Gagnon (2017) did not mention these measures in their study. The Inventory of Callous-Unemotional Traits (ICU; Frick, 2004) was used in the development of the "with limited prosocial emotions" specifier of the *DSM-5* (APA, 2013). The ICU is a self-report measure consisting of 24-items that are rated on a Likert scale with a higher total score indicating the presence of more significant callous-unemotional (CU) traits. There are

multiple versions of the ICU for various languages, age ranges, and raters, including for parents and teachers. The ICU was found to be a valid and reliable measure for assessing CU traits in populations of incarcerated youth (Kimonis et al., 2008).

In addition to assessing the presence of CU traits, aggression is an important construct to consider when evaluating youthful offenders. The literature discusses two subtypes of aggression, reactive and proactive. Proactive aggression is goal-directed, premeditated, coercive (Poland et al., 2015), unprovoked (Burney, 2008), and not always associated with an emotional response (Steiner et al., 2003). Reactive aggression is considered unplanned, impulsive, and often aimed at the source of threat or frustration (Colins, 2016; Connor et al., 2004). This form of aggression is referred to as "hot-blooded" due to the "fight response" that occurs resultant of perceived threat.

The Adolescent Anger Rating Scale (AARS; McKinnie-Burney, 2001) is a 41-item self-report measure designed for youth between the ages of 11–19 years old. Responses to the AARS produce scores on three scales: Reactive Anger, Proactive Anger, and Anger Control. The Anger Control subscale is intended to measure whether the respondent has the strategies and coping skills necessary to effectively manage their response to provocation. The AARS is normed on a sample of adolescents from various ethnic backgrounds and across multiple different neighborhood environments (e.g., inner-city, urban, suburban). It can be completed relatively quickly and requires only a fourth-grade reading level, both of which make it favorable measure to use with detained youth when also accounting for the accuracy of item endorsement when interpreting results.

CU traits are a reliable indicator of a more severe and persistent trajectory of aggression and violence in youthful offenders (Frick & Dickens, 2006) that begins in

childhood and frequently remains stable throughout adolescence and into adulthood (Frick & White, 2008; Munoz & Frick, 2007). The severe aggression of youth with CU traits is consistent with research findings indicating that this subgroup of youth engages in higher levels of combined proactive and reactive aggression (Fanti et al., 2009).

Outcomes on the ICU and measures of aggression are important when considering treatment for detained youth with a CD diagnosis. CU traits are associated with poor treatment responsivity in youth with CD (Frick & McMahon, 2008). In a comprehensive review by Frick et al. (2014), 90% of the research studies that compared treatment response in youth with and without CU traits resulted in poorer outcomes for the CU group. Psychopathic traits are also highly correlated with rates of recidivism (Falkenbach et al., 2003) and more violent offenses post release (Gretton et al., 2001; White et al., 2016). Based on this knowledge, distinguishing youth with CD and CU traits from those with only CD and prosocial emotions is relevant to the overarching goal of rehabilitation.

It is important to note that treatment success is not impossible for the subgroup of youth with CU traits; however, different intervention methods will be necessary to effectively treat this population (Saleskin et al., 2012). According to Frick and White (2008), the ability to rehabilitate CU, antisocial youth relies on treatments that are "comprehensive by focusing on a number of different risk factors," and "individualized in that the focus of the comprehensive intervention is tailored to the child's unique needs" (p. 369).

Broad Cognitive Measures

Wechsler (1944) was one of the first to introduce findings that children with conduct problems had a significantly lower Verbal IQ (VIQ) than Performance IQ (PIQ).

Numerous studies have attempted to replicate and expand on these findings to better understand the relationship between IQ and delinquency (Hirschi & Hindelang, 1977). In a study of 12- and 13-year-old males from the Pittsburgh Youth Study, Lynam et al. (1993) found that verbal and Full-Scale IQ (FSIQ) scores for delinquent youth were approximately 10 points lower than the nondelinquent group, even after controlling for race, socioeconomic status, test motivation, and behavioral impulsivity. Moffitt et al. (1994) administered a battery of neuropsychological tests to male youth aged 13 years old from the birth cohort of the Dunedin Multidisciplinary Health and Developmental Study. These measures assessed verbal ability, verbal memory, visual-spatial ability, visual-motor integration, and mental flexibility. In addition to reviewing court conviction records, and police contacts and arrests, participants also completed a self-report measure of delinquency 5 years later, when they were 18 years old. This was the first longitudinal study to identify a link between neuropsychological test performance at age 13 to delinquent behavior that persisted at age 18 with results identifying verbal ability and verbal memory as the most strongly correlated to delinquency.

The correlation between IQ and delinquency is not fully understood, but some have posited that low IQ leads to poor academic achievement and thus school failure (Lynam et al., 1993), which is a risk factor for delinquency (Bonta & Andrews, 2007). Regardless, research continues to find that intellectual disabilities occur at high rates in juvenile offenders (Thompson & Morris, 2016, p. 18). Stahlberg et al. (2010) provided support for the significant rate of intellectual disabilities found in youthful offenders. In a study of 100 adolescents aged 12–19 (92 male; eight female) committed to juvenile institutions in Sweden between 2004–2007, 11% had FSIQ scores of 70 or below while

30% achieved FSIQ scores between 70–85, which is considered borderline intellectual functioning (Stahlberg et al., 2010) and approximately one standard deviation below the population mean.

It is important to identify youth with intellectual impairments who are adjudicated to secure facilities, as such difficulties can hinder treatment progress for this population. Specifically, as stated in Thompson and Morris (2016), intellectual disability "is an impairment in one's ability to communicate needs and ideas, to learn from experience to problem solve in situations, and to otherwise reason and learn at the same level as expected for same-age typical children or adolescents" (p. 91). As such, services must be tailored to the individual needs and learning style of youth in order for them to benefit and successfully complete treatment.

Despite the prevalence and impact intellectual functioning can have on the treatment process, results of Swank and Gagnon (2017) indicated that only one facility reported administering the full version of the WISC-IV. Two correctional facilities reported using the WASI-II and two identified using the KBIT-II. The WASI-II and KBIT-II are abbreviated versions of more extensive cognitive measures. An individual's performance on these two measures provides information pertaining only to verbal (VIQ) and nonverbal reasoning (PIQ) abilities. Of course, assessing these abilities is relevant, especially given the PIQ/VIQ discrepancy noted in youth with CD; however, outcomes on these measures offer only a partial understanding of youth's broad cognitive abilities.

Administration of the WISC-V (Wechsler, 2014) and Wechsler Adult Intelligence Scale – Fourth Edition (WAIS-IV; Wechsler, 2008) offers a broad understanding of an individual's intellectual reasoning and cognitive proficiency abilities. The WISC-V has

several composite scores that can be calculated (Table 2), though the FSIQ score is known as the most reliable indicator of general intelligence (Wechsler, 2014; Kaufman et al., 2016). In addition to understanding verbal and nonverbal reasoning, the WISC-V also measures of visual-spatial ability, working memory, and processing speed. It is important to note that while the Wechsler Scales are considered the gold standard for measuring general cognitive ability, their individual indices also tap into neuropsychological processes that would warrant follow-up evaluation when discrepancies are identified.

Table 2

Global Composite Scales and Indices of the WISC-V

Composite Score/Index	Cognitive Ability Measured
Full-Scale IQ	Estimate of broad cognitive ability
General Ability Index	Estimate of cognitive ability that is less reliant on working memory and processing speed.
Cognitive Proficiency Index	Information processing efficiency
Verbal Comprehension Index	Verbal reasoning and abstract concept formation
Visual Spatial Index	Visual spatial processing, part-whole relationship synthesis, and visual-motor integration
Fluid Reasoning Index	Conceptual thinking, simultaneous processing, novel problem solving
Working Memory Index	Simple span, mental manipulation, ability to withstand proactive interference
Processing Speed Index	Speed/efficiency of scanning and discrimination of visual information

Note. The primary composite scores are italicized. Adapted from *A Compendium of Neuropsychological Tests: Administration, Norms, and Commentary* (3rd ed.), by E. Strauss, E. Sherman, and O. Spreen, 2006. Copyright 2006 by Oxford University Press. Adapted from *Intelligent Testing with the WISC-V*, by A. Kaufman, S. Raiford, and D. Coalson, 2016. Copyright 2016 by John Wiley & Sons, Inc.

Measures of Academic Achievement/Ability

Even in the presence of average or better cognitive functioning based on results of the WISC-V or WAIS-IV, youth can still struggle from a range of unidentified learning disabilities that require adjustments and accommodations to facilitate successful learning. Quinn et al. (2005) conducted a survey of correctional facilities across the United States housing youth aged 22 years old and younger to determine the prevalence of disabilities, as well as to assess the number of youth receiving special education services under the Individuals with Disabilities Education Improvement Act (IDEIA; U.S. Department of Education, 2004). Of the 33,831 juveniles incarcerated in correctional facilities during this time, the mean prevalence of youth having a disability who were eligible for special education services was 33.4% (n = 8,613). The highest percentage of youth fell under the Emotional Disturbance disability classification per the IDEIA at 47.7%, followed by Specific Learning Disabilities at 38.6%, and Mental Retardation at 9.7%. Additionally, 2.9% were classified under Other Health Impairment with 0.8% meeting criteria for a Multiple Disabilities classification.

Several theories attempt to explain the correlation between learning disabilities and delinquency. These include the school failure theory, the differential treatment hypothesis, the susceptibility theory, and the cognitive problem-solving theory (Chandra, 2018; Thompson & Morris, 2016). Extensive elaboration on psychoeducational evaluations for learning disabilities is beyond the scope of this review; however, including measures of achievement, such as the Woodcock Johnson Test of Achievement – Fourth Edition (WJ-IV; Schrank et al., 2014), should be a standard component of the evaluation process for detained youth. More targeted testing should be conducted when

there is a significant discrepancy between performance on measures of achievement and cognitive ability as indicated by results of the WISC-V or WAIS-IV.

Integration of Neuropsychology

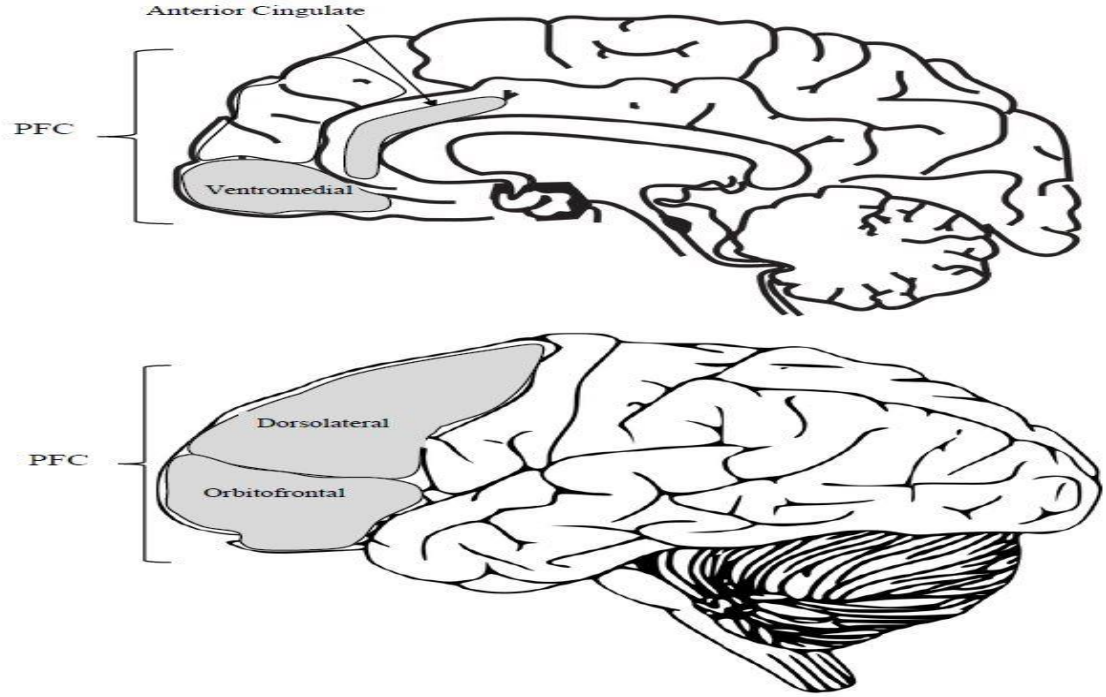
The brain's frontal lobe is an integral component of human thought, behavior, and emotion. The prefrontal cortex (PFC) is a functional subdivision of the frontal lobe that is involved in carrying out various executive functions (EF). Structural and functional neuroimaging studies of the PFC have produced significant findings in samples of violent psychiatric patients (Volkow & Tancredi, 1987; Volkow et al., 1995) and murderers pleading Not Guilty by Reason of Insanity (NGRI; Raine et al., 1994, 1997; Yang & Raine, 2009).

Impact to the PFC is known to cause impairments in emotional, behavioral, personality, social, and cognitive functioning. Potential increases in anger and rage (emotional), risk-taking and irresponsibility (behavioral), impulsive tendencies and poor self-control (personality), deficient social judgment and immaturity (social), and lack of problem-solving skills (cognitive) are characteristic of criminal behavior and are evidence of why deficits of the prefrontal cortex are considered the best-replicated correlates of antisocial behavior and violence (Raine, 2013).

The PFC is divided into several subregions, including the dorsolateral, orbitofrontal, which originates in the ventro-medial prefrontal cortex (vmPFC), and medial-frontal/anterior cingulate (Figure 1), all of which comprise the brain's executive system. Each of these regions serves as a point of origin for the "looped circuitry" that occurs between the cortices and the brain's subcortical structures (Koziol et al., 2013, p. 332).

Figure 1

Prefrontal Brain Regions



The dorsolateral prefrontal region is associated with higher-order EF, as well as cognitive and effortful control. Damage to this area is sometimes referred to as "dysexecutive syndrome" (Koziol & Budding, 2012; Scott & Schoenberg, 2011) and reflects impairments in planning, judgment, organization, problem-solving, executive control, and working memory.

The orbitofrontal and ventromedial regions partially overlap and are responsible for the "hot" components of EF (Ardila, 2008; Koziol & Budding, 2009; Otero & Barker, 2014; Peterson & Welsh, 2014). The circuits in these regions are known to facilitate the connection between cognition and emotion (Ardila, 2008), or "the conscious control of behavior through the evaluation of punishment and reward value of reinforcing stimuli" (Scott & Schoenberg, 2011, p. 114). Individuals with impairments in these regions are

typically described as disorganized, impulsive, and emotionally dysregulated (Diamond, 2013; Koziol & Lutz, 2013; Scott & Schoenberg, 2011). “Disinhibited syndrome,” “acquired sociopathy,” and “pseudopsychopathic” (Goldberg, 2009, p. 172; Scott & Schoenberg, 2011) have been used to describe such deficits.

The anterior cingulate originates in the medial frontal region and connects to both the prefrontal cortex and the limbic system, which is a series of cortical and subcortical brain structures, including the amygdala, that are involved in learning, memory, and emotion (Hunter et al., 2012). The anterior cingulate, specifically, has been implicated in emotional processing, social cognition, and attentional control (Allman et al., 2001), as well as conflict resolution as it relates to cognitive ambiguity (Goldberg, 2009; McCalla, 2013). Individuals with impairments in this region are likely to appear apathetic or indifferent, which is commonly labeled in the literature as “amotivational” (Koziol & Budding, 2009) or “apathetic” (Scott & Schoenberg, 2011) syndrome.

The PFC is particularly relevant to the assessment of youthful offenders, as characteristics of antisocial behavior have been implicated across each of the related subregions (Raine, 2018). As detailed by Raine (2018), aggression, impulsivity, and poor planning and behavioral control are linked to the dorsolateral and medial PFC. The vmPFC has been linked to emotional processing, learning from reward and punishment, and decision making while the interaction between the orbitofrontal region, the vmPFC, and the amygdala are accountable for emotional regulation, or lack thereof.

Adequate functioning of the prefrontal circuits is crucial to effectively carry out EF, which are higher-order cognitive processes such as reasoning, problem solving, and planning that are effectuated by the neural pathways associated with the prefrontal cortex

(Diamond, 2013). Additional top-down mental processes such as inhibition, working memory, and cognitive flexibility also comprise the main functions of the executive system. Ultimately, self-regulation is the core of EF and involves self-directed actions that are necessary to choose goals and to create, enact, and sustain actions toward those goals (Barkley, 2015, p. 60). Emotional and behavioral dysregulation can occur when the executive system is unable to override bottom-up, automatic (reactive) processes that facilitate more purposeful and intentional actions (Chow, 2000; Koziol & Lutz, 2013).

Unfortunately, the brain's frontal system is complex due to its overlapping architecture, which has led to considerable ambiguity when scientifically conceptualizing and defining EF. The "unity and diversity" of EF has gained considerable traction among a multitude of research efforts to understand the role of EF and its subcomponents. In a seminal study, Miyake et al. (2000) conducted a latent variable analysis and found that the EF tasks of updating, shifting, and inhibition are independent, yet correlated functions. As such, each of these components contribute a degree of variance to more complex tasks while maintaining connectedness to a multitude of other EF subcomponents. This pattern of EF has been replicated across age groups with individual differences being implicated at the genetic, neurological, and behavioral levels (Friedman & Miyake, 2017).

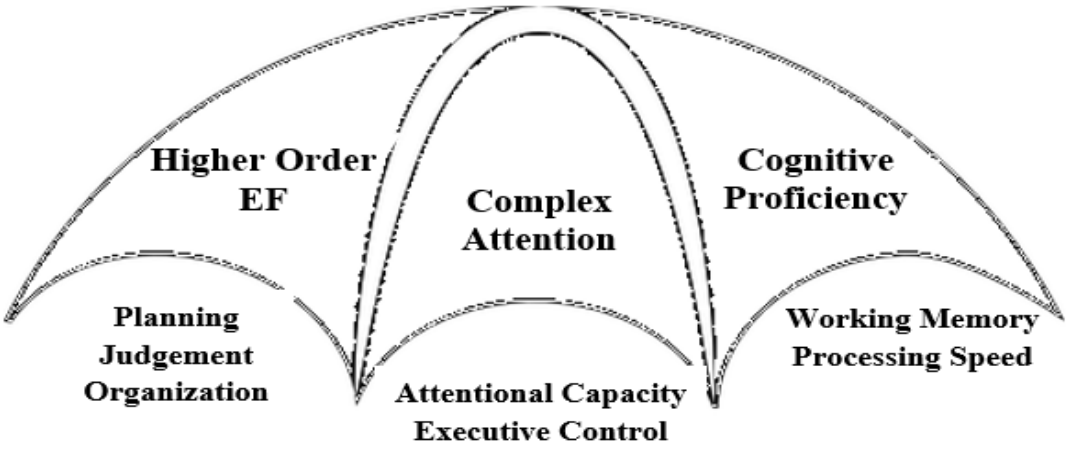
The interrelatedness across executive abilities has fueled a continued debate regarding the use of neuropsychological tests of EF in everyday clinical practice. This is largely due to the "task impurity" problem, which implies that performance on EF tasks intended to measure a specific EF ability are likely influenced by other executive and nonexecutive processes (Friedman & Miyake, 2017; Snyder et al., 2015). As such, some

consider results on neuropsychological tests to be speculative due to a purported impossibility of specifying the true origin of impaired performance. Snyder et al. (2015) suggested several methods to alleviate the uncertainty associated with neuropsychological test interpretation, such as administering multiple measures for each EF component and considering the reliability and specificity of those measures included in a test battery.

It is important to note that on neuropsychological measures, a single test score does not indicate impairment when analyzing and interpreting data. A clinician must consider the pattern of performance combined with behavioral observations pertaining to the client's process and collateral information in order to best conclude the cognitive strengths, weaknesses, and general abilities of the individual. With this in mind, the proceeding discussion will outline a proposed method for conceptualizing and integrating neuropsychological tests of EF into mental health evaluations for youthful offenders.

Figure 2

Domains for the Neuropsychological Assessment of EF



Note. Adapted from *Understanding What's Under the Umbrella: A Neuropsychological Approach to ADHD*, by M. Landstrom and A. Skierkiewicz, 2016. Professional Presentation, Landstrom Neuropsychological Center, Schaumburg, IL.

Cognitive Proficiency

Cognitive proficiency refers to processing speed and working memory capacity. Scores on the Working Memory Index and Processing Speed Index of the WISC-V/WAIS-IV are used to calculate the Cognitive Proficiency Index (CPI) score (Table 2). This informs clinicians about working memory capacity and rate of information processing, both of which can have an impact on learning and hinder one from performing to their true cognitive ability when identified as a significant weakness.

Processing speed is the rate in which an individual is able to filter incoming information (Nigg, 2017a). Individuals with processing speed deficits tend to think through each piece of information before deciding what is most relevant. Nigg (2017a) described it as though the "brain is accumulating and sorting information from [the] environment more slowly than the situation requires, as if it is cycling more slowly to 'sample' its world" (p. 25). Daydreaming, poor task initiation and slower task completion, as well as difficulty comprehending instruction, questions, or explanations (Barkley, 2015), are typically characteristic of individuals with processing speed weaknesses.

Working memory is the ability to temporarily hold auditory or visual information in mind while manipulating it in some way to solve a problem (Kasper et al., 2012). It functions to select task-relevant information and holds this information "online" while it is used to carry out other cognitive tasks; however, the storage capacity of working

memory is limited and different for everyone (Buehler, 2018). Impairments or weaknesses in working memory can impact academic achievement, the ability to follow instructions, as well as attention, concentration, and the ability to maintain on task behavior.

Both working memory and processing speed are intricate, complex, and wide-spread cognitive processes. Together, they are considered "central" functions that allow for other cognitive processes to occur. In particular, the speed and accuracy of information processing and storage capacity have been implicated as essential components of attentional control (Buehler, 2018), concentration, and maintaining on task behavior (Martinussen et al., 2005, p. 377).

Complex Attention

Complex attention refers to both the maintenance and management of attention. Maintenance of attention involves the capacity to effectively direct cognitive resources toward focusing on a particular task (Cohen et al., 2006), while management of attention requires control, both of which are known to have origins in different frontal brain regions and its subsequent neural circuits.

Attentional Capacity. Attentional capacity is highly associated with the orbitofrontal prefrontal circuitry and measures ADHD in the "classic" sense, or as it is defined by *DSM-5* (APA, 2013) criteria. For the most part, attentional capacity is limited by both cognitive (e.g., working memory, processing speed) and motivational factors, or the intrinsic value the task might have to an individual (Cohen et al., 2006).

Attentional capacity refers to the various forms of attention, including focused attention, concentration, and vigilance. *Focused attention* is the ability to "tune out" and

attend to chosen, consciously targeted stimuli. *Sustained attention*, or concentration, is the ability to maintain attention to stimuli over an extended period of time while simultaneously ignoring other stimuli that are less important. *Vigilance* occurs when the brain becomes less responsive as it becomes understimulated. Specifically, there is greater engagement and cortical activation when a task is considered novel; however, after ongoing repetition of stimuli, the novelty declines along with the level of brain activation and arousal (Loo et al., 2009; Oken et al., 2006), which makes it difficult to maintain task engagement.

Table 3

Suggested Measures of Attentional Capacity

Test	Subtest	Aspect of Attention Measured
Conners Continuous Performance Test, Third Edition (CPT-3; Conners, 2014).	-	Focused attention Sustained Attention Vigilance
Test of Everyday Attention for Children (TEA-Ch; Manly et al., 2009)	Sky Search	Focused attention
	Score!	Sustained attention
	Score DT	Sustained attention
	Code Transmission	Sustained attention

Note. Adapted from *A Compendium of Neuropsychological Tests: Administration, Norms, and Commentary* (3rd ed.), by E. Strauss, E. Sherman, and O. Spreen, 2006. Copyright 2006 by Oxford University Press. Adapted from *TEA-Ch: The Test of Everyday Attention for Children,* by T. Manly, I. H. Robinson, V. Anderson, and I. Nimmo-Smith, 2001. Copyright 2001 by Psychological Assessment Resources, Inc.

Executive Control. The management of attention involves executive or cognitive control, which is the ability to focus on a targeted task even in the presence of internal or

external stimuli that are competing for or placing additional demands on the brain's cognitive resources. Ultimately, conflict is necessary for executive control to take place (Nigg, 2017b), which functions to protect working memory in order to continue attending to goal-relevant information (Bavinck & Braver, 2015; Nigg, 2017b). During a neuropsychological evaluation, cognitive control is assessed using measures that target impulsivity (e.g., response inhibition), divided attention, and cognitive flexibility, or mental shifting (Fair et al., 2012; Nigg, 2006; Willcutt et al., 2005).

Table 4

Suggested Measures of Executive Control

Test	Subtest	Aspect of Control Measured
CPT-3 (Conners, 2014)	-	Impulsivity
Delis-Kaplan Executive Function System (D-KEFS; Delis, Kaplan, & Kramer, 2001)	*Trail Making Test*	Cognitive Flexibility Divided Attention
	Color-Word Interference	Response Inhibition Cognitive Flexibility
TEA-Ch (Manly et al., 2009)	*Sky Search DT*	Divided Attention
	Walk. Don't Walk	Impulsivity

Note. Adapted from *A Compendium of Neuropsychological Tests: Administration, Norms, and Commentary* (3rd ed.), by E. Strauss, E. Sherman, and O. Spreen, 2006. Copyright 2006 by Oxford University Press. Adapted from *TEA-Ch: The Test of Everyday Attention for Children,* by T. Manly, I. H. Robinson, V. Anderson, and I. Nimmo-Smith, 2001. Copyright 2001 by Psychological Assessment Resources, Inc.

Higher-Order Executive Skills

Higher-order executive skills involve the top-down control of emotions, behaviors, and cognitions (Nigg, 2017b), including those mechanisms used for self-

regulation. These higher-order skills rely on the adequate functioning of the more basic top-down aspects of control and play a significant role in cognitive operations that are future-oriented, including planning, organization, reasoning, and problem-solving abilities.

Table 5

Suggested Measures of High Order EF

Test	Subtest	EF Measured
D-KEFS (Delis, Kaplan, & Kramer, 2001)	*Tower Test*	Planning Behavioral Inhibition Rule learning
	Twenty Questions Test	Problem Solving Abstract Thinking Feedback integration
Wisconsin Card Sorting Test (WCST; Heaton, 1981)	-	Strategizing Ability Shifting set Feedback integration Goal-oriented behavior Impulsive responding
Iowa Gambling Task, Version 2 (IGT-2; Bechara, 2016)	-	Decision making under ambiguity Decision making under risk Response contingency Reversal learning

Note. Adapted from *A Compendium of Neuropsychological Tests: Administration, Norms, and Commentary* (3rd ed.), by E. Strauss, E. Sherman, and O. Spreen, 2006. Copyright 2006 by Oxford University Press.

EF and Antisocial Behavior

The research unanimously finds that EF is a crucial component underlying antisocial behavior (Moffitt & Henry, 1991; Moffitt et al., 1994; Morgan & Lilienfeld, 2000; Raine, 2018; Raine et al., 2005; Ogilvie et al., 2011). Among the multiple functions of the executive system, response inhibition (Bechara et al., 2000; Rogers et al., 2001;

Syngelaki et al., 2009), cognitive flexibility (Meijers et al., 2015), and poor decision making (Fairchild et al., 2009) are frequently identified impairments in antisocial populations.

Given the presence of EF deficits in antisocial individuals, the correlation between EF and aggressive behavior should not be surprising. Proactive aggression requires impulse control, the ability to sustain goal-oriented behavior, and intact cognitive flexibility to follow through on premeditated plans (Cruz et al., 2020). Therefore, youth with more proactive versus reactive aggression will likely perform relatively well on measures targeting these particular constructs. However, proactively aggressive youth do not necessarily present with fully intact neurocognitive profiles, as it was found that individuals who engage primarily in instrumental aggression fail to alter their behavior after punishment (Blair, 2001). They also demonstrate reduced threat responsivity (Hwang et al., 2016) and struggle to recognize emotional or affective cues in others (Marsh & Blair, 2008; Syngelaki et al., 2013; White et al., 2016), which partially explains why proactively aggressive youth are more likely to be callous and unemotional (Viding & McCrory, 2017).

Reactive aggression is linked to subcortical brain structures and deficits in the orbital and medial prefrontal regions that fail to inhibit emotional arousal (Fabian, 2010). This form of aggression is more common in youthful offenders in general and can emerge as a result of multiple mental health disorders (Connor et al., 2004; Moffitt et al., 1994; Seguin et al., 1995). For instance, youth with a history of trauma are at an increased risk for reactive aggression (Silvern & Griese, 2012), likely due to increased threat sensitivity (Tyler et al., 2019) and impairments in self-regulatory processes that lead to emotional

dysregulation and behavioral disinhibition (Ford et al., 2012). The *DSM-5* (APA, 2013) notes that individuals diagnosed with a trauma-related disorder may exhibit irritability and aggression with little or no provocation (e.g., yelling at people, getting into fights, destroying objects), which are behaviors that can easily be misattributed to a primary CD diagnosis upon contact with the juvenile justice system. ADHD is also identified as a risk factor for aggression and violence (Bernat et al., 2012; Loeber & Stouthamer-Loeber, 1987) and is distinctly correlated to reactively aggressive behavior (Connor et al., 2004; Saylor & Amann, 2016) due to the impulse control deficits inherent to this diagnosis (Szymanski et al., 2011).

Symptom Overlap and ADHD

The importance of assessing EF in young offenders is clear. Despite the prevalence of mental health issues among this population, CD is still regarded as the most prevalent diagnosis for juvenile delinquents. Yet, conduct problems are rarely seen as the result of other mental disorders. For instance, the externalizing behaviors found in ADHD overlap with many of the diagnostic features found in CD, such as the tendency to "initiate aggressive behavior and react aggressively to others" (APA, 2013, p. 472). With that said, ADHD is identified as the most common disorder to co-occur with CD (Frick & Marsee, 2018; Frick & McMahon, 2016), and more severe forms of antisocial behavior are present when ADHD and CD co-occur (Eme, 2009; Frick & Marsee, 2006; Frick & White, 2008). Even in the absence of CD and other comorbid conditions, ADHD was found to predict both the involvement in, and the persistence of, violent offending in youth (Bernat et al., 2012; Loeber & Stouthamer-Loeber, 1987; Moffitt, 1990; Sibley et al., 2011; Wojciechowski, 2021).

The diagnostic criteria in the *DSM-5* (APA, 2013) delineate symptoms of ADHD into inattentive and hyperactive/impulsive subtypes, but the clinical presentation of ADHD is heterogenous and markedly varies for each individual. Disinhibition and sensation-seeking behaviors, as well as emotional impulsivity and deficient emotional self-regulation, are classified as core components of ADHD (Barkley, 2015; Eme, 2018), and likely why ADHD is known to exacerbate the severity of aggression and delinquent behavior in children and adolescents compared to those with only a diagnosis of CD (Hudec & Mikami, 2018).

Many of the recommended methods for evaluating ADHD are difficult to implement in a correctional setting. For instance, Barkley (2015) suggested that ADHD evaluations should include both child and parent interviews to assess for differential diagnosis and obtain pertinent background history. It was also recommended that rating scale data are collected from multiple sources, including the child, parent, and teacher. As discussed, a multi-informant evaluation approach is challenging to achieve in a correctional setting. Furthermore, academic and mental health records are also not always readily available, which would be needed to corroborate the presence of significantly impairing symptoms across multiple settings, especially in the absence of caregiver and teacher reports. Due to these limitations, ADHD would likely be diagnosed based on youth self-report or observations made of a youth's behavior during their detainment, which are also unreliable, as such behaviors could reflect difficulties adjusting to the conditions of confinement, or multiple other contextual factors.

Although neurocognitive impairments contribute to the problematic behaviors observed in ADHD, there is considerable controversy regarding the value of

neuropsychological tests when administered as part of ADHD evaluations (Barkley, 2019; Barkley & Eme, 2019; Mapou, 2019). Barkley (2019) asserted that EF measures "have questionable utility in the diagnosis of ADHD" (p. 2), with reference being made to their poor ecological validity, high rate of false-positive diagnoses, and failure to align with EF behavioral rating scales. Although these concerns are certainly appropriate, they are not specific to only neuropsychological test outcomes.

Despite emphasizing the use of EF behavioral rating scales in ADHD evaluations due to their high ecological validity, a respondent's item endorsements can be influenced by multiple other factors. For instance, a rating scale completed by a teacher may not reflect significant impairment if a child enjoys school and is motivated to learn. Additionally, endorsing a child's failure to complete homework assignments on time could very well be the result of distractions at home or other hindering environmental influences (Snyder et al., 2015). Therefore, while technically measuring real-world behaviors, EF rating scales are not necessarily a reliable measure of EF impairment.

There are additional criticisms related to the inability of neuropsychological assessments to identify symptoms of ADHD based on the *DSM-5* (APA, 2013) criteria (Koziol et al., 2013, p. 17). This is a sensible conclusion due to the impracticality of mapping neurocognitive data on to diagnostic criteria that are based solely on the behavioral manifestation of a disorder (Koziol et al., 2013, p. 11). As a result, rating scales that are based exclusively on observed behavioral symptoms may provide a seemingly more valid approach to diagnosis given the basis of *DSM-5* criteria. However, in an environment that makes it difficult to obtain historical and corroborating information, the integration of neuropsychological tests can provide a "reliable and

objective criterion" (Koziol et al., 2013, pg. 7), so that self-report or symptom-based screening measures are not the sole method for establishing an ADHD diagnosis.

From a neuropsychological perspective, ADHD is an umbrella term for the multiple conditions that can arise when weaknesses in EF are present (Koziol & Budding, 2009; Koziol et al., 2013; Nigg, 2017a). As discussed, such weaknesses lead to significant dysregulation, or the inability to inhibit and/or activate a cognitive, behavioral, or emotional response. Research has narrowed down several cognitive functions that are commonly weaker in individuals with ADHD (Mueller et al., 2017). Based on the EF domains proposed in Figure 2, deficits in complex attention skills, either capacity or control, are consistent with the attentional and impulse control deficits outlined by the *DSM-5* (APA, 2013) ADHD symptom criteria.

Differentiating CD from ADHD, or establishing their co-occurrence, is complex given the significant overlap in behavioral symptomatology; however, an accurate diagnosis is crucial for understanding and effectively treating antisocial behavior in youthful offenders. Although co-occurring ADHD/CD is arduous to treat (Tarver et al., 2014), when present, treatments targeting ADHD were found to simultaneously reduce conduct problems and antisocial behaviors (Villodas et al., 2012). This means that a missed diagnosis of ADHD could result in treatment strategies that do very little to address the core of a youth's antisociality and thus fail to reduce their risk for recidivism. In these instances, mental health interventions could prove to be the most successful method for diverting future criminal involvement (Kinscherff, 2012), yet based on the literature discussed throughout this review, the diagnostic practices in juvenile justice

facilities are not equipped to detect and accurately diagnose mental health disorders, especially ADHD.

Overview and Rationale

Based on the literature discussed thus far, it is clear that the juvenile justice system is confronted with a pervasive mental health crisis. The pattern of prevalence rates reported in the research illustrates an amalgamation of *DSM-5* (APA, 2013) diagnoses that impact offender populations, yet there is comparably less information pertaining to the psychodiagnostic and treatment methods implemented in juvenile correctional facilities. Instead, rehabilitative efforts supersede mental health interventions while minimal acknowledgement is allocated toward possible functional impairment as a hindrance to treatment success and the ability to refrain from future criminal engagement.

The process of detecting mental health difficulties in secure juvenile facilities primarily involves the use of screening measures or methods that result in a fragmented or unreliable understanding of a youth's functioning. As a consequence, many youthful offenders are diagnosed with CD without further ruling out potential differential diagnoses or considering the possibility of co-occurring disorders. Even when a diagnosis of CD is appropriate, the *DSM-5* (APA, 2013) specifiers (e.g., onset; childhood onset) are rarely applied, which were specifically put in place to identify youth who are more difficult to treat and at risk for more severe forms of antisocial behavior.

In addition to missed and misdiagnosis, the current diagnostic practices in juvenile facilities fail to consider the reciprocal relationships that exists between cognition, emotion, and behavior. Continued separation of these domains during the assessment process is an ineffective means to identify and address mental health

impairment, reduce recidivism, and provide youth with greater opportunities for achievement upon release. With that said, an integrated framework for conducting mental health evaluations in juvenile offenders was proposed. Despite the weaknesses and criticisms associated with neuropsychological and psychological tests when used independently, combining these methods can only lead to stronger and more reliable conclusions regarding diagnosis and impairment.

Overall, this method will allow for a more valid approach to formulating mental health diagnoses in juvenile offenders. In addition to gaining more reliable subjective data about a youth's emotional functioning, the benefit of integrating neuropsychological tests are multifaceted. First, a youth's performance on these measures can assist in identifying cognitive and neuropsychological impairments that could potentially hinder treatment progress. Depending on results, the decision could be made to first address any skill deficits prior to implementing treatments that heavily emphasize a cognitive-behavioral component. At minimum, recognition of a youth's cognitive difficulties will allow for a more refined treatment approach to allow for more successful outcomes. Furthermore, given the correlates of antisocial behavior identified throughout the research, outcomes on measures of EF can offer clinicians a degree of insight into the potential severity and persistence of a youth's future criminal misconduct.

Chapter 5: Illustrative Cases and Discussion

The following cases illustrate the proposed method for conducting mental health evaluations in juvenile offenders outlined throughout this study. These examples will be used to substantiate the value of comprehensive assessments, primarily as it relates to the differential diagnosis of ADHD and CD. For purposes of this study, a brief history of the client is provided, and only measures of general cognitive ability, EF, and emotional/behavioral functioning are included in the proceeding discussion. Test data and the detailed list of the full test battery are provided in Appendices A and B.

Rationale

The two individuals depicted in the illustrative cases were referred for mental health evaluations due to significant behavioral and emotional concerns. The measures discussed above were selected from a more thorough test battery (see Appendices A and B) in an effort to provide a comprehensive picture of the cognitive and emotional factors that may be contributing to the behaviors in question. Both individuals were administered the Medical Symptom Validity Test (MSVT) to assess the validity and accuracy of the obtained cognitive data and to ensure that results were not influenced by suboptimal effort or poor motivation. The WISC-V provides a broad understanding of cognitive abilities, which not only assists in identifying weaknesses or impairments that may warrant additional testing, but also allows for the clinician to provide treatment in a way that minimizes the negative impact an individual's cognitive deficits can have on treatment progress.

While not explicitly stated as part of the referral question, both cases present with "ADHD-like" behaviors. Delineating behavioral difficulties subsequent to neurocognitive

impairment (e.g., ADHD) versus those behaviors that are likely premeditated or carried out by choice (e.g., CD) is an important distinction to make for detained youth. With that said, in following the proposed method for assessing the domains of EF, the WISC-V further clarifies if cognitive proficiency deficits, involving working memory and processing speed, are impacting the ability to carry out other important executive skills. Complex attention, including attentional capacity and control, such as focused and sustained attention, impulse control, and vigilance, were assessed using the Conners Continuous Performance Test – Third Edition (CPT-3) and the Test of Everyday Attention for Children (TEA-Ch). The D-KEFS Trail Making Test was added to Client A's test battery to further assess cognitive flexibility, in part due to results of the TEA-Ch indicating difficulty with simultaneous processing and divided attention, but also to obtain additional data regarding the veracity of the client's EF deficits. In measuring the last domain of EF, the D-KEFS Tower Test was administered to both individuals as a measure of higher-order executive skills. Client A was also administered the D-KEFS Twenty Questions Test, which not only provided an additional data regarding the client's problem-solving strategy, but was also used as a follow-up measure of abstract thinking, but this time with visual stimuli.

Both Case A and B were also administered subjective measures. Case A completed the BASC-3, as the concerns reported during the client's intake raised questions about his ability to complete the more lengthy PAI-A, which was administered to Case B. The BASC-3 was also completed by multiple raters to subjectively assess emotional and behavioral functioning from the perspective of those who are frequently exposed to each client across different settings. Administering these measures to multiple

raters allows for a more in depth analysis than results on any neuropsychological test or rating scale could offer independently. The observed behavioral and emotional symptoms reported across raters on the BASC-3 can now be critically analyzed in tandem with a youth's cognitive functioning to assist with differentiating those behaviors that occur by choice (e.g., CD) versus those that occur due to behavioral and emotional dyscontrol resultant of poor self-regulation (e.g., ADHD).

Case A – John

John is a 12-year-old, right-handed male referred for a neuropsychological evaluation due to concerns regarding the frequency and escalation of his behavioral issues. John transferred to his current school approximately 1 year ago and his teachers reported ongoing behavioral difficulties ever since. John is currently in the sixth grade and completing a 45-day interim placement at a therapeutic day school at the time of his evaluation. This placement was recommended following an aggressive behavioral incident in which John threatened another student with a pair of scissors, which also led to an 8-day out-of-school suspension.

John has no history of receiving academic accommodations throughout a formal Individualized Education Plan (IEP) or Section 504 Plan. It was noted that John received all Fs on his most recent report card although his teachers regarded him as having better than average intellectual functioning. John's mother reported that John has always struggled with concentration and being easily distracted in the classroom, which always impacted his academic performance. However, his mother further reported noticeable improvements since John started the therapeutic day school. She attributed these

academic improvements to the smaller class sizes and individualized attention John receives throughout the school day.

John's teachers characterized his behaviors as "antisocial" in nature. There were several reported behavioral referrals throughout the current academic year, including an incident where John threatened another student's life with a pair of scissors. John is also known to break other students' property and use inappropriate and threatening language towards his peers.

Performance Validity

John was administered a standalone performance validity measure. He scored above the cutoff across all trials, which resulted in a valid profile. This supports basic effort and suggests that results of John's evaluation are likely an adequate representation of his current cognitive functioning. Symptom validity will be discussed below.

Cognitive Ability

Intellectual reasoning and cognitive proficiency were assessed with the WISC-V. John's FSIQ score fell in the Low Average range. He scored in the Low Average range on the Verbal Comprehension Index (VCI) and Fluid Reasoning Index (FRI), both of which are heavily mediated by abstract reasoning and concept formation. The client's visual-spatial skills, as measured by the Visuospatial Index (VSI), were Average, though he performed better on the subtest emphasizing visuomotor skills versus visual processing by more than a standard deviation.

Turning to cognitive proficiency, John performed in the Average range on the Working Memory Index (WMI), and while his working memory is certainly intact, his performance favored the auditory recall task when compared to the task emphasizing

mental manipulation. With regard to processing speed, John's performance on these subtests produced a Processing Speed Index (PSI) score that fell in the Mildly Impaired range, suggesting that John's speed of information processing as an area of deficit that will certainly impact his ability to keep up with his peers in the classroom.

Executive Functioning

Complex attention was measured using multiple measures. On the CPT-3, John had a conservative style of responding that emphasized accuracy over speed, rather than balancing the two as instructed. This response style likely suppressed the number of nontarget hits John made (commission errors), which is a measure of impulsivity. On the remaining impulsivity measures, John maintained a slower response speed, which is consistent with his impaired performance on the PSI of the WISC-V. Despite his slower speed, John still made a clinically significant number of perseverative errors, indicating a tendency to "go on autopilot" or "act without thinking."

The two primary measures of focused attention were also elevated, suggesting inconsistency and variability in John's focus. Sustained attention was problematic given the notable decline in his concentration around the 7-min mark, as well as significant omission errors and marked variability in his reaction time, which spanned from the floor to the ceiling across blocks. Finally, John's response speed was significantly reduced when stimuli were presented at longer intervals, indicating impairments in vigilance, or the ability to remain focused when the brain is understimulated.

The TEA-ch was also administered, which measures similar skills as the CPT-3, but individually rather than all at once. His performance on this measure is consistent with outcomes on the CPT-3, though not quite as severe. As expected, John's

conservative response style on the CPT-3 suppressed outcomes on the measure of response inhibition, as he performed in the Low Average range on a subtest of the TEA-Ch that measures the same construct. On the Trail Making Test, the client scored at the floor of the test on the primary task of cognitive flexibility, suggesting marked difficulty when there are simultaneous demands are placed on John's cognitive resources.

Higher-order executive abilities were also consistently problematic. On the D-KEFS Twenty Questions Test, John's line of questioning was concrete and reflected stimulus-bound tendencies. Specifically, he approached the task by naming items until the target object was identified. John also failed to adjust his strategy regardless of how inefficient it was. On the D-KEFS Tower Test, John's performance suggests ineffective problem-solving skills, as his Total Achievement score was at the floor of the test. As to his process, his initiation and pace scores were within normal limits, but he was inefficient in the number of actions he took to solve the problem due to his "trial and error" approach.

Emotional and Behavioral Functioning

The BASC-3 was administered to John, his mother, and his teacher. Overall, John produced a valid BASC-3 profile. The Emotional Symptoms Index, which is a global measure of emotional disturbance, fell in the elevated range. Mild elevations were also found on the composite scale measuring internalizing problems, on which the client endorsed items indicating the presence of mild depression and anxiety-related difficulties. Clinically significant elevations were found on scales indicating feelings of inadequacy, demonstrating that John feels as though he has minimal control over the rewards and

punishments he receives. Aside from the client's mild dislike for school and test anxiety, no additional school-related problems were reported.

Outcomes on the Inattention/Hyperactivity composite scale were average. On this, the client reported mild attention difficulties while the hyperactivity scale fell within normal limits. The client reported prominent personal adjustment difficulties. More specifically, he endorsed items reflecting a rather negative perception of his peer relationships and the relationship he has with his parents. He further endorsed having poor self-esteem and a lack of confidence in his abilities. The content scales further describe an individual who becomes quickly irritated with a minimal ability to regulate his emotions, as well as someone who lacks self-identity and emotional competence.

Results of the BASC-3 Teacher Rating Scale – Adolescent (BASC-3 TRS-A) should be interpreted with caution, as John's teacher responded to items on this measure in an overly negative manner. Overall, John's teacher reported significant externalizing behavioral problems, including hyperactivity, aggression, and a tendency for John to engage in rule-breaking behaviors (e.g., destruction of property). The Internalizing Problems composite scale was within normal limits, although symptoms of depression were endorsed as a significant area of concern. School-related problems, including learning and attentional difficulties, were described as mild. The scale measuring the presence of atypical behaviors was significantly elevated, with the client also exhibiting a mild tendency to withdraw from social interaction with his peers.

John's teacher reported mild to significant problems associated with John's adaptive skills, including difficulties with leadership, social skills, study skills, adapting to changes in the environment, communication, and the ability to adequately complete

basic everyday tasks. Consistent elevations were found across all of the content scales as well. As such, John's teacher reported the presence of maladaptive behaviors related to anger control, bullying, social communication, emotional self-control, executive skills and negative emotionality, as well as poor resiliency. While keeping his teacher's negative response style in mind, results suggest a moderate probability for ADHD, and clinically significant elevations on the Autism, Emotional-Behavioral Disorder, and Functional Impairment probability indices.

John's mother completed the BASC-3 Parent Rating Scale – Adolescent (BASC-3 PRS-A) and produced a valid profile. Her responses overlapped with several of the concerns endorsed by John's teacher. More specifically, consistency was found on the BASC-3 scales indicating difficulties with aggression, irritability, threatening and disruptive behaviors, and difficulties with attention, as well as John's proneness to emotional outbursts and instability. His mother's responses produced moderate elevations on the ADHD probability and emotional-behavioral disorder probability indices.

Impressions

Overall, John clearly struggles with aspects of complex attention, including focused attention, concentration, and vigilance, as well as with divided attention, cognitive flexibility, and response inhibition, which is consistent with a diagnosis of ADHD. Regarding cognitive proficiency, although his working memory is largely intact, processing speed is certainly an area of deficit, which was indicated by his repeated pattern of difficulty on tasks measuring processing speed directly and those susceptible to the secondary influence of speed. Executive-mediated problem-solving skills were also

impaired as suggested by his "trial and error" approach to the administered D-KEFS subtest.

Given John's history and outcomes on subjective measures, his emotional dysfunction and behavioral disturbances could be the result of an adjustment disorder, with mixed anxious distress, negative affectivity/mood issues, and conduct problems. The neurocognitive deficits found in ADHD make it more difficult, though not impossible, for John to regulate his behaviors. As such, a piece of what is being observed by the severity and degree of John's aggression is an interaction between emotional and executive systems, as neurocognitive deficits can certainly manifest as the irritability, anger, and aggression that John is exhibiting, especially given the impulsive nature of these actions.

Case B – Tom

Tom is a 15-year-old, right-handed male who presented with a history of treatment for ADHD. The client was previously prescribed stimulant medications, and while there were some benefits reported, adverse side effects were frequently noted. Tom and his parents recalled that Tom was tried on "almost all of the different ADHD medications," each of which were discontinued due to the Tom becoming "mean and irritable" when medicated. Despite psychopharmacological interventions, Tom continues to struggle academically and behaviorally. His reported history includes physical altercations with his peers, truancy, and verbally threatening behavior toward his parents. As such, a neuropsychological evaluation was requested for diagnostic clarity.

Academically, Tom was an honor-roll student up until the seventh grade, at which time his grades reportedly declined to the point that he consistently received Ds and Fs. John attributed his compromised academic performance to difficulties with task

initiation and "getting started." John receives classroom accommodations through a 504 plan, which include preferential seating, extended test time, and advanced notice for tests and quizzes.

Defiant behaviors were consistently reported, as well as aggressive tendencies that often resulted in Tom punching holes in the walls. Tom's parents also noted that Tom often makes threatening statements, such as "Don't get me upset!" which his parents described as a control tactic. Tom also has a history of legal involvement. He is currently mandated to complete community service due to a vandalism incident. Marijuana abuse was also identified.

Performance Validity

Tom was administered a standalone performance validity measure designed for use with children and adolescents. He made no errors on any of the items and earned a valid total score. As such, results are considered an accurate representation of Tom's current cognitive functioning. Symptom validity will be discussed below.

Cognitive Ability

Intellectual reasoning and cognitive proficiency were assessed with the WISC-V. Tom achieved a FSIQ score in the Average range, indicating that his broad cognitive skills are adequately developed. His VCI score fell in the Average range. Tom's FRI score was also Average, although he performed a standard deviation higher on the inductive reasoning subtest compared to the subtest emphasizing quantitative reasoning. Visuospatial reasoning was a personal strength, with his Visual Spatial Index score falling in the upper limits of the High Average range. With regard to cognitive

proficiency, Tom performed within normal limits on the PSI and WMI. He also achieved Average scores on the individual subtests comprising each of these indices.

Executive Functioning

Tom performed exceptionally well on the measures of complex attention. Outcomes on the CPT-3 were consistently within normal limits. There was one score on the TEA-Ch that fell below the average range. Specifically, he scored a 9/10 on the task of simple focused auditory attention, which falls one standard deviation below the mean. Otherwise, he scored in the average range on divided attention task and in the lower limits of the average range on the additional subtest measuring impulse control.

Broader executive skills, such as planning, judgment, and mental organization, were assessed with the D-KEFS Tower Test. Tom's Total Achievement score fell in the Superior range, indicating effective problem-solving skills. With regard to his process, Tom's initiation, pace, and accuracy scores were all Average and he made no impulsive rule violations. Overall, the client's higher-order EF skills assessed by this measure appear intact.

Emotional and Behavioral Functioning

The BASC-3 PRS-A was completed by Tom's mother. Validity scales indicate that his mother responded in an inconsistent manner to items of similar content, although it was not significant enough to invalidate the results. Overall, Tom's mother endorsed items that produced clinically significant elevations on the scales measuring hyperactivity, attention problems, and executive functioning problems, which when combined, produced a clinically significant ADHD and Emotional-Behavioral Disorder

probability score, as well as a moderate elevation related to the probability for Functional Impairment.

More significant elevations were found on scales measuring conduct problems and aggression, in addition to clinically significant outcomes on the anger control and bullying content scales. Tom's mother also reported that John is more prone to physical complaints, lacks resiliency, and demonstrates weaker adaptive skills compared to his same-aged peers.

Tom's teacher completed the BASC-3 TRS-A and produced a valid profile. Based on her responses, there were clinically significant elevations on the scales measuring hyperactivity with more mild elevations found on the attention problems scale, as well as on the content scale measuring executive functioning skills. Results further evidenced mild elevations on the Learning Problems scale, as well as difficulty when attempting to complete simple, everyday tasks, as indicated by mild elevations across each of the subscales measuring Tom's adaptive skills. Overall, Tom's teachers' responses produced index scores suggesting a significant probability of ADHD, as well as a moderate probability for functional impairment.

Tom was administered the PAI-A. He produced a valid clinical profile although there were moderate elevations on embedded validity scales that need to be considered throughout interpretation. Specifically, these scales indicate an inconsistent pattern of responding, as well as Tom's tendency to deny relatively common shortcomings in an effort to portray himself in a favorable light. As a result of this response pattern there were no clinically significant elevations found across any of the clinical scales or

subscales of the PAI-A. However, there were moderate elevations within Tom's profile that are relevant to consider when conceptualizing his overall psychological functioning.

On the PAI-A clinical scales, Tom endorsed items that suggest he may be abusing prescription or illicit drugs on a regular basis and has possibly experienced adverse consequences as result. The configuration of Tom's subscale profile characterizes him as a fearless individual who is unlikely to be inhibited by appropriate caution (ARD-P). This susceptibility toward reckless behavior is consistent with Tom's legal history, as well as his endorsement of items on the subscale that inquire about an individual's engagement in antisocial acts (ANT-A).

Despite his low motivation for treatment (RXR), results on the subsequent treatment scales suggest Tom would benefit from interventions that provide him coping skills and tools to better manage his anger (AGG) and bad temper (BOR-A). Specifically, despite Tom's positive response pattern, there were still moderate elevations found across all three aggression subscales. In combination, these subscales describe Tom as someone who is hostile, easily angered (AGG-A), and as someone who makes little effort to control the outward expression of his anger (AGG-V). These findings further indicate Tom's proneness to more physical displays of aggression, such as breaking objects or engaging in physical confrontations (AGG-P).

Impressions

Overall, Tom's performance across administered neuropsychological tests suggests intact attentional capacity and control. Cognitive proficiency and higher-order EF skills were also well within normal limits. Although rating scale data suggest moderate to clinically significant concerns regarding hyperactivity and attentional issues,

the objective data were inconsistent with what would be expected in a case of neurodevelopmental ADHD, as he appears to have the cognitive skills needed to refrain from engaging in "ADHD-like" behaviors.

Based on his legal involvement, behavioral history, and concerns reported by Tom's parents, results of his evaluation are more consistent with a diagnosis of CD, for which Tom meets more than three of the required *DSM-5* (APA, 2013) criteria, including destruction of property, physical aggression, verbal threats, truancy, and deceitfulness. Although the family reported that the client benefited from stimulant medication at one point, this is not a unique outcome only for those with ADHD, as there is some degree of benefit for anyone who takes a stimulant, regardless of accurate diagnosis. However, individuals who take stimulants in the absence of the neurocognitive deficits found in ADHD are at a heightened risk for side-effects, such as the irritability reported in Tom's case.

Theoretical Application

Based on the research findings outlined in this review, if the two illustrative cases were detained in a juvenile correctional facility, a brief screening measure, such as the MAYSI-2, would be administered to each youth during the intake process. Given his background history, Case A would likely elevate the Angry/Irritable and Depressed/Anxious scales of the MAYSI-2. Results on this measure, in addition to his mere presence in a correctional facility, leads Case A to be diagnosed with CD, and possibly depression and anxiety. His low intelligence, ADHD, processing speed deficits, and impairments in his higher-order executive functioning will go unacknowledged and untreated.

Alternatively, outcomes on the MAYSI-2 completed by Case B fell entirely within normal limits. No consideration is given to the possibility of scale suppression due to positive impression management. Although appropriate in this instance, Case B is also diagnosed with CD due to his current incarceration and reported legal history. Case A and Case B participate in the same CBT group, which primarily addresses aggressive behaviors and provides anger management skills.

Unfortunately, the etiological explanations for the behaviors identified in these two cases are not the same and therefore, require different treatment approaches in order to maximize responsivity and achieve future stability. Aside from the notable degree of treatment resistance indicated by Case B's PAI-A profile that will go undetected, outcomes on cognitive measures suggest he has the capacity to benefit from CBT.

In contrast, Case A presents with multiple impairments (e.g., lower intelligence, slower processing speed, impaired attention) that would have a negative impact on his participation in CBT if appropriate modifications were not made to suite his level of functioning. With regard to recommendations for treatment, results of Case A's evaluation suggest that stimulant medications would be an appropriate and effective treatment for his attentional deficits. Stimulants are regarded as the most well-established treatment for ADHD (Lichenstein et al., 2012; Olfson et al., 2013) and were evidenced to reduce criminal behavior in a sample of adult inmates (Lichtenstein et al., 2012); however, there is growing evidence that not all symptoms or subtypes of ADHD are alleviated with medication and thus require an alternative treatment approach (Biederman et al., 2011; Koziol & Budding, 2012). Specifically, while it was acknowledged that stimulant medications improved "core" clinical symptoms of ADHD, Biederman et al.

(2011) found that stimulants failed to ameliorate all EF deficits. Despite psychopharmacological treatment, participants in the study conducted by Biederman and colleagues continued to experience difficulties with working memory, planning, task monitoring, and organizational skills.

In addition to medication, Case A would also benefit from a treatment approach that focuses on building effective problem-solving skills, such as learning to identify problems, predict consequences based on prior experience, and inhibit impulsive reactions by pausing to first consider more effective solutions. Individual psychotherapy should also be a component of treatment to assist Case A with adjusting to changing circumstances, identifying his symptoms of anxiety and depression, as well as teaching him appropriate coping strategies to utilize when these symptoms arise. Throughout treatment, Case A's slower processing speed needs to be acknowledged and accommodated as well. These accommodations could include speaking more slowly, pacing questions appropriately, allowing sufficient time for Case A to answer questions, and presenting new information using verbal and visual cues.

Conclusion

Overall, these case studies are evidence of the faulty conclusions that can be drawn when diagnosing mental health disorders based on results of a single subjective rating scales or screening measure. For Case A, results of the parent and teacher rating scales for externalizing problems varied from mild to markedly elevated while attentional difficulties were only relatively mild despite the significant EF deficits indicated by Case A's performance on the administered objective measures. Alternatively, if rating scales were the only method of evaluating Case B, results would likely lead to a diagnosis of

ADHD though he presents intact attentional capacity and well-developed cognitive abilities.

In the absence of comprehensive evaluations, youth will fail to have their mental health needs addressed throughout their incarceration, which is already known to occur at rather substantial rates (McReynolds et al., 2008; Rogers et al., 2001). The persistently high rates of recidivism reported in the literature suggest that the "pills and programs" (Goshe, 2019) approach to mental health treatment in juvenile correctional facilities is effective for only a small percentage of offenders while a considerable number of youth continue to cycle through the system unnecessarily. Without appropriate assessment, very little is being done to consider the "individual needs and strengths of offenders throughout treatment," as defined by the specific responsivity principle of the RNR model (Bonta & Andrews, 2007).

Chapter 6: Summary and Conclusion

The research presented throughout this review depicts the overwhelming rates of mental health difficulties encountered in juvenile correctional facilities. Despite the significant cognitive, emotional, and behavioral impairments of detained youth, prevalence studies have consistently reported substantially higher rates of CD than any other mental health diagnosis. Due to this pattern, many treatment efforts reported throughout the literature minimize mental health and emphasize rehabilitation by focusing solely on antisocial behaviors.

Unfortunately, multiple etiological explanations exist for the norm-violating and aggressive behaviors that lead to contact with the juvenile justice system, and conduct problems are rarely considered a manifestation of other existing mental health impairments. Self-report and screening measures offer a minimal understanding of etiology and fail to consider differential diagnosis. Relying on the data from these methods will only lead to increased rates of misdiagnosis, or missed diagnoses, and treatments that are both unnecessary and ineffective. These elusive or inadequate assessment practices lead youth to return to their communities with untreated mental health conditions that only increase their risk for future criminal behavior and life-long, functional impairment.

The current study proposed a multimethod framework for mental health evaluations in secure juvenile facilities that allows for a comprehensive understanding of the vast cognitive, emotional, and behavioral impairments found within this population. This approach has the ability to detect academic and learning difficulties in need of further testing, as well as the ability to identify neurocognitive deficits that would require

clinical attention throughout a youth's detainment. As such, neuropsychological test data provides information to circumvent, as well as directly treat, the emotional and cognitive difficulties of antisocial and delinquent youth.

An emphasis was placed on executive abilities due to the extensive literature documenting the relevance of EF when attempting to conceptualize aggression and antisocial behavior, as well as treatment amenability and engagement. Furthermore, outcomes on EF measures can offer valuable information to assist with differential diagnosis or establishing co-occurring pathology, with particular reference being made to ADHD and CD. This is especially useful in a setting that makes it difficult to obtain collateral information or implement assessment strategies that are typically successful in outpatient or community-based mental health settings.

Although the method for evaluating juvenile offenders outlined in this study has practical implications, it is largely theoretical and intended to provide a foundation for future research and provoke a more standardized and effective assessment approach for juvenile offenders. Overall, this study demonstrates the pressing need for correctional facilities to move away from the insufficient diagnostic and treatment practices that fail to meet the substantial mental health needs of this population. The criminal behavior of youthful offenders will rarely be addressed when the emotional and cognitive factors that impact their ability to think rationally, comprehend, and make appropriate decisions are completely disregarded.

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Appendix A

Assessment Battery

Green's Medical Symptom Validity Test (MSVT)
Wechsler Intelligence Scale for Children, Fifth Edition (WISC-V)
Woodcock Johnson Tests of Achievement, Fourth Edition (WJ-IV)
Kaufman Test of Educational Achievement, Third Edition (KTEA-3)
Expressive Vocabulary Test, Second Edition (EVT-2)
Peabody Picture Vocabulary Test, Fourth Edition (PPVT-4)
Comprehensive Assessment of Spoken Language (CASL-2)
    Inferences
    Meaning from Context
NEPSY-II
    Comprehension of Instructions
    Geometric Puzzles
    Picture Puzzles
Beery-Buktenica Developmental Test of Visual-Motor Integration, Sixth Edition
Wide Range Assessment of Visual Motor Abilities (WRAVMA) Pegboard Subtest
Conners Continuous Performance Test, Third Edition (CPT-3)
Test of Everyday Attention for Children (TEA-Ch)
Delis Kaplan Executive Function System (D-KEFS)
    Tower Test
    Trail Making Test
    Twenty Questions Test

Rating Scales:
Adaptive Behavior Assessment System, Third Edition (ABAS-3) – Parent Rating
Behavior Assessment System for Children, Third Edition (BASC-3)
    Parent Rating Scale (PRS)
    Self-Report of Personality (SRP)
    Teacher Rating Scale (TRS)

Broad Cognitive Ability

Table A1

WISC-V

Index	Subtest	Score	Descriptor
Verbal Comprehension Index		86	Low Average
	Similarities	90	Average
	Vocabulary	85	Low Average
Visual Spatial Index		94	Average
	Block Design	110	High Average
	Visual Puzzles	80	Low Average
Fluid Reasoning Index		82	Low Average
	Matrix Reasoning	85	Low Average
	Figure Weights	85	Low Average
Working Memory Index		97	Average
	Digit Span	105	Average
	Picture Span	90	Average
Processing Speed Index		77	Mild Impairment
	Coding	75	Mild Impairment
	Symbol Search	85	Low Average
Full-Scale IQ		*86*	*Low Average*

Note. Composite Score is italicized. Scores are standard scores. Descriptor refers to the qualitative descriptor associated with the standard score.

Complex Attention and EF

Table A2

CPT-3

Dimension/Score	Score Description	Descriptor
Overall Likelihood	Estimation of having a disorder characterized by attention deficits	High
Validity	Assesses timing, missing scores, and score pattern	Valid
Response Style	Speed/accuracy trade off	Conservative
Inattention		
Detectability	Target discrimination	Low Average
Omissions	Missed targets	Low Average
Commissions	Non-target hits	Average
HRT	Speed	Mild Impairment
HRT SD	Speed inconsistency	Severe Impairment
Variability	Processing efficiency variance	Moderate
Impulsivity		
HRT	Speed	Superior
Commissions	Non-target hits	Average
Perseverations	Random/anticipatory responses	Mild Impairment
Sustained Attention		
HRT Block Change	Decline over time	Low Average
Omissions by Block	Rate of missed targets	Borderline
Commissions by	Rate of responses to non-targets	WNL
Vigilance		
HRT by ISI	Decline with less stimulation	Moderate
Omissions by ISI	Missed targets by stimulus	Borderline
Commissions by ISI	Incorrect responses to non-targets by stimulus	WNL

Note. Dimension of attention is in bold font followed by the associated scores. Descriptor refers to the qualitative descriptor associated CPT-3 T-scores. Score definitions adapted from *CPT-3 Technical Manual*, by C. K. Conners, 2014. Multi-Health Systems, Inc.

Table A3

TEA-Ch

Subtest	Aspect Measured	Score	Descriptor
Sky Search –	Basic visual attention	80	Low Average
Score!	Basic auditory attention	115	High Average
Sky Search DT	Divided attention between auditory and visual stimuli	95	Average
Score DT	Divided attention between non-competing auditory stimuli	105	Average
Walk, Don't Walk	Impulsivity	85	Low Average

Note. Scores are standard scores. Descriptor refers to the qualitative descriptor associated with the standard score. Subtest descriptions adapted from *TEA-Ch: The Test of Everyday Attention for Children*, by T. R. Manly, I. H. Robinson, V. Anderson, and I. Nimmo-Smith, 2001. Psychological Assessment Resources, Inc

Table A4

D-KEFS Trail Making Test

Subtest	Dimension Measured	Score	Descriptor
Condition 1: Visual Scanning	Basic scanning	95	Average
Condition 2: Number Sequencing	Speed	80	LA/Mild Imp.
Condition 3: Letter Sequencing	Speed	80	LA/Mild Imp.
Condition 4: Number Letter Sequencing	Cognitive flexibility Simultaneous processing	55	Severe Impairment
Condition 5: Motor Speed	Motor	60	Moderate Impairment

Note. Scores are standard scores. Descriptor refers to the qualitative descriptor associated with the standard score. Subtest descriptions adapted from *Delis-Kaplan Executive Function System,* by D. C. Delis, E. Kaplan, and J. H. Kramer, 2001. The Psychological Corporation.

Higher-Order EF

Table A5

D-KEFS Twenty Questions Test

Subscale	Dimension Measured	Score	Descriptor
Total Achievement Score	Effectiveness of strategy	55	Severe Impairment
Initial Abstraction Score	Conceptual/Abstract thinking	70	Mild Impairment
Total Questions Asked		55	Severe Impairment

Note. Scores are standard scores. Descriptor refers to the qualitative descriptor associated with the standard score. Subtest descriptions adapted from *Delis-Kaplan Executive Function System*, by D. C. Delis, E. Kaplan, and J. H. Kramer, 2001. The Psychological Corporation.

Table A6

D-KEFS- Tower Test

Subscale	Dimension Measured	Score	Descriptor
Total Achievement Score	Effectiveness of strategy	80	Low Average
Mean First-Move Time	Task initiation	95	Average
Time-Per-Move Ratio	Pace	95	Average
Move Accuracy Ratio	Efficiency of actions	85	Low Average
Rule-Violations-Per-Item Ratio	Impulse control/maintaining set	100	Average

Note. Scores are standard scores. Descriptor refers to the qualitative descriptor associated with the standard score. Subtest descriptions adapted from *Delis-Kaplan Executive Function System*, by D. C. Delis, E. Kaplan, and J. H. Kramer, 2001. The Psychological Corporation.

Emotional & Behavioral Functioning:

Table A7

Behavior Assessment System for Children – Third Edition

Scale	PRS-A T-Score	TRS-A T-Score
F Index Raw Score	Acceptable	Extreme Caution
Response Pattern	Acceptable	Acceptable
Consistency	Acceptable	Acceptable
Externalizing Problems	60*	97***
Hyperactivity	56	79**
Aggression	64*	101***
Conduct Problems	58	103***
Internalizing Problems	48	55
Anxiety	50	42
Depression	52	71**
Somatization	54	48
School Problems	-	67*
Attentional Problems	-	63*
Learning Problems	-	69*
Behavioral Symptom Index	57	85***
Atypicality	53	85***
Withdrawal	46	67*
Attentional Problems	64*	-
Adaptive Skills (reverse scaling)	47	26**
Adaptability	43	29**
Social Skills	52	27**
Leadership	44	30*
Study Skills	-	25**
Functional Communication	49	32*
Activities of Daily Living	47	-
Content/Index Scales:		
Anger Control	65*	100***
Bullying	62*	111***
Developmental Social Disorders	57	77**
Emotional Self-Control	59	74**
Executive Functioning	60*	76**
Negative Emotionality	59	84***
Resiliency (reverse scaling)	41	27**
Index Profile		
ADHD Probability	60*	67*
Autism Probability	51	73**
EBD Probability	61*	99***
Functional Impairment	54	77**

Note. Scores are in T-Scores. *Elevated: 60-69; **Significantly Elevated: 70-79;

***Markedly Elevated: 80

Table A8

Behavior Assessment System for Children – Third Edition

Scale	Self-Report T-Score
F Index	**Acceptable**
Response Pattern	**Acceptable**
Consistency	**Acceptable**
L Index	**Acceptable**
V Index	**Acceptable**
School Problems	59
Attitude to School	60*
Attitude to Teachers	55
Sensation Seeking	57
Internalizing Problems	66*
Atypicality	48
Locus of Control	78**
Social Stress	51
Anxiety	61*
Depression	67*
Sense of Inadequacy	76**
Somatization	57
Emotional Symptoms Index	67*
Inattention/Hyperactivity Index	51
Attention Problems	61*
Hyperactivity	41
Personal Adjustment (reverse scaling)	31**
Relation with Parents	24***
Interpersonal Relations	39**
Self-Esteem	40**
Self-Reliance	38**
Content/Index Scales	
Anger Control	71**
Mania	49
Test Anxiety	66*
Ego Strength (reverse scaling)	25***

Note. Scores are in T-Scores. *Elevated: 60-69; **Significantly Elevated: 70-79;

***Markedly Elevated: 80+

Appendix B

Assessment Battery

Memory Validity Profile (MVP)
Wechsler Intelligence Scale for Children – V (WISC-V)
Woodcock-Johnson Tests of Achievement – IV (WJ-IV)
Behavior Rating Inventory of Executive Functioning - 2 (BRIEF-2) Parent
Behavior Rating Inventory of Executive Functioning - 2 (BRIEF-2) Self
Conner's Continuous Performance Test–3 (CPT-3)
Test of Everyday Attention – Children Version (TEA-Ch)
Delis-Kaplan Executive Function System (D-KEFS)
    Tower Test
Behavior Assessment System for Children – 3 (BASC-3)
    Parent Rating Scale (PRS)
    Teacher Rating Scale (TRS)
Personality Assessment Inventory – Adolescent (PAI-A)

Broad Cognitive

Table B1

WISC-V

Index	Subtest	Score	Descriptor
Verbal Comprehension Index		98	Average
	Similarities	100	Average
	Vocabulary	95	Average
Visual Spatial Index		117	High Average
	Block Design	110	High Average
	Visual Puzzles	120	Superior
Fluid Reasoning Index		103	Average
	Matrix Reasoning	110	High Average
	Figure Weights	95	Average
Working Memory Index		94	Average
	Digit Span	95	Average
	Picture Span	95	Average
Processing Speed Index		105	Average
	Coding	105	Average
	Symbol Search	105	Average
Full-Scale IQ		*102*	*Average*

Note. Composite Score is italicized. Scores are standard scores. Descriptor refers to the qualitative descriptor associated with the standard score.

Complex Attention/EF

Table B2

CPT-3

Dimension/Score	Scale Description	Descriptor
Overall Likelihood	Estimation of having a disorder characterized by attention deficits	Low
Validity	Assesses timing, missing scores, and score	Valid
Response Style	Speed/accuracy trade off	Balanced
Inattention		
Detectability	Target discrimination	Average
Omissions	Missed targets	Average
Commissions	Non-target hits	Average
HRT	Speed	Average
HRT SD	Speed inconsistency	Average
Variability	Processing efficiency variance	Average
Impulsivity		
HRT	Speed	Average
Commissions	Non-target hits	Average
Perseverations	Random/anticipatory responses	Average
Sustained Attention		
HRT Block Change	Decline over time	Average
Omissions by Block	Rate of missed targets	Average
Commissions by Block	Rate of responses to non-targets	Within Normal Limits
Vigilance		
HRT by ISI	Decline with less stimulation	Average
Omissions by ISI	Missed targets by stimulus	Average
Commissions by ISI	Incorrect responses to non-targets by stimulus	Within Normal Limits

Note. Dimension of attention is in bold font followed by the associated scores. Scale descriptions adapted from *CPT-3 Technical Manual*, by C. K. Conners, 2014. Multi-Health Systems, Inc.

Table B3

TEA-Ch

Subtest	Dimension Measured	Score	Descriptor
Sky Search – Attention	Basic visual attention	110	High Average
Score!	Basic auditory attention	85	Low Average
Sky Search DT	Divided attention (auditory v. visual)	90	Average
Score DT	Divided attention (non-competing)	105	Average
Walk, Don't Walk	Impulsivity	90	Average

Note. Scores are standard scores. Descriptor refers to the qualitative descriptor associated with the standard score. Subtest descriptions adapted from *TEA-Ch: The Test of Everyday Attention for Children*, by T. R. Manly, I. H. Robinson, V. Anderson, and I. Nimmo-Smith, 2001. Psychological Assessment Resources, Inc

Higher-Order EF

Table B4

D-KEFS- Tower Test

Score	Dimension Measured	Score	Descriptor
Total Achievement Score	Effectiveness of problem-solving	125	Superior
Mean First-Move Time	Task initiation	105	Average
Time-Per-Move Ratio	Pace	105	Average
Move Accuracy Ratio	Efficiency of actions	105	Average
Rule-Violations-Per-Item Ratio	Impulse control/maintaining set	100	Average

Note. Scores are standard scores. Descriptor refers to the qualitative descriptor associated with the standard score. Subtest descriptions adapted from *Delis-Kaplan Executive Function System*, by D. C. Delis, E. Kaplan, and J. H. Kramer, 2001. The Psychological Corporation.

Emotional & Behavioral Functioning

Table B5

Behavior Assessment System for Children – Third Edition

Scale	PRS-A T-Score	TRS-A T-Score
F Index Raw Score	Acceptable	Acceptable
Response Pattern	Acceptable	Acceptable
Consistency	Caution	Acceptable
Externalizing Problems	78**	62*
Hyperactivity	74**	74**
Aggression	77**	53
Conduct Problems	77**	55
Internalizing Problems	57	43
Anxiety	57	43
Depression	51	45
Somatization	61*	44
School Problems	-	67*
Attentional Problems	-	68*
Learning Problems	-	64*
Behavioral Symptom Index	66*	57
Atypicality	57	44
Withdrawal	45	48
Attentional Problems	74**	-
Adaptive Skills (reverse scoring)	34*	34*
Adaptability	40*	36*
Social Skills	36*	37*
Leadership	35*	34*
Study Skills	-	32*
Functional Communication	34*	40*
Activities of Daily Living	35*	-
Content Scales		
Anger Control	71**	53
Bullying	71**	51
Developmental Social Disorders	54	58
Emotional Self-Control	60*	51
Executive Functioning	75**	66*
Negative Emotionality	69*	55
Resiliency (reverse scoring)	35*	33*
Index Profile		
ADHD Probability	74**	73**
Autism Probability	57	57
EBD Probability	74**	55
Functional Impairment	65*	60*

Note. Scores are in T-Scores. *Elevated: 60-69; **Significantly Elevated: 70-79;

***Markedly Elevated: 80+

Table B6

Personality Assessment Inventory – Adolescent

Scales/Subscales	T-Score	Scales/Subscales	T- Score
Inconsistency	69*	**Schizophrenia**	36
Infrequency	45	Psychotic Experience	40
Negative Impression Management	42	Social Detachment	41
Positive Impression Management	63*	Thought Disorder	39
Somatic Concerns	48	**Borderline Personality Features**	43
Conversion	43	Affective Instability	56
Somatization	52	Identity Problems	38
Health Concerns	51	Negative Relationships	34
Anxiety	43	Self-Harm	52
Cognitive	42	**Antisocial Personality Features**	52
Affective	42	Antisocial Behaviors	57
Physiological	49	Egocentricity	43
Anxiety-Related Disorders	38	Stimulus-Seeking	53
Obsessive-Compulsive	53	**Alcohol Problems**	46
Phobias	30	**Drug Problems**	66*
Traumatic Stress	43	**Aggression**	67*
Depression	41	Aggressive Attitude	64*
Cognitive	43	Verbal Aggression	69*
Affective	43	Physical Aggression	62*
Psychological	41	**Suicidal Ideation**	50
Mania	48	**Stress**	42
Activity Level	38	**Non-Support**	41
Grandiosity	62*	**Treatment Rejection**	64*
Irritability	43	**Dominance**	58
Paranoia	35	**Warmth**	58
Hypervigilance	37		
Persecution	43		
Resentment	37		

Note. Clinical, Treatment, and Interpersonal Scales are in bold font. Subscales are listed below the associated Clinical Scale and depicted in standard font. Scores are listed as T-scores.