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REVIEW ARTICLE

Using the WISC-IV for Early Identification of Disruptive Behavior Disorders and Juvenile Delinquency Risk

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ABSTRACT

Early identification of children at risk for persistent disruptive and antisocial behavior is an important priority in developmental psychology, education, and juvenile justice systems. Cognitive functioning plays a significant role in children's ability to regulate behavior, interpret social cues, and make adaptive decisions. The Wechsler Intelligence Scale for Children-Fourth Edition (WISC-IV) is one of the most widely used instruments for assessing intellectual functioning in children and adolescents in many parts of the world. Although WISC-IV is not specifically designed to diagnose disruptive behavioral disorders (DBD) directly, the cognitive profiles it generates can reveal patterns of executive functioning weaknesses that are often associated with DBD, and subsequently, antisocial conduct. This article examines how WISC-IV results can be integrated into a multidisciplinary assessment framework for identifying children with DBD and evaluating potential risk factors for juvenile delinquency. A standard operating procedure (SOP) for WISC-IV assessment and its follow-up intervention is proposed, emphasizing multimodal evaluation, cognitive profile interpretation, and early preventive interventions. The article argues that cognitive assessment, when interpreted alongside environmental and psychosocial factors, can contribute to early identification and targeted interventions aimed at reducing long-term antisocial trajectories.

Keywords: *WISC-IV, disruptive behavior disorders, juvenile delinquency, cognitive assessment, executive functioning*

1. INTRODUCTION

Generally, disruptive and antisocial behaviors encountered during the childhood phase represent significant developmental concerns to both parents and educators. This is because they are associated

with a range of long-term psychosocial challenges, which include academic failure in school, social maladjustment in the community, and potential risk factors of subsequent involvement in juvenile justice systems. The patterns of behavioral traits, e.g., oppositionality, aggression, and rule-breaking, are commonly observed in disorders such as oppositional defiant disorder (ODD) and conduct disorder-childhood onset (CD-CO) or adolescence-onset (CD-AO); they are often collectively categorized as disruptive behavior disorders (DBD; APA, 2013; Latimer et al., 2012). Within the fields of developmental psychopathology and criminology, early behavioral difficulties or challenging behavioral traits (Chia & Wong, 2014) are viewed as potential precursors to persistent antisocial conduct; in some cases, it is seen as prefatory juvenile delinquency if they are not identified in diagnostic assessment and addressed through timely intervention (Farrington, 2005; Moffitt, 1993; Weiss et al., 2016). Consequently, the early identification of risk factors associated with disruptive behavioral patterns has become an important focus in both psychological assessment and preventive intervention (Conroy & Brown, 2004).

One crucial factor that has attracted considerable attention in this context is the cognitive functioning, particularly executive processes involved in behavioral regulation (Nigg, 2017) as well as learning performance (Becker et al., 2021). Executive functions (e.g., working memory, processing speed, reasoning, and cognitive flexibility) play an essential role in attention control, impulse control, planning and organizing, social problem-solving, and the ability to anticipate the consequences of one's actions (Hildebrandt, 2017; Hofmann et al., 2012). Children who manifest executive functioning deficits often struggle to manage their impulses, maintain attention to rules, and regulate their emotional responses effectively (Becker et al., 2021). Such challenging limitations only worsen vulnerability to maladaptive behavioral responses, particularly when combined with adverse environmental conditions (e.g., bad peer influences, family instability, or poor school engagement) (Moffitt, 1993; Farrington, 2005). For this reason, comprehensive psychological evaluations of children presenting with behavioral disturbances often include cognitive assessment tools (e.g., IQ tests and behavior rating scales) as part of a multidisciplinary diagnostic approach (Flanagan & Kaufman, 2009; Hodges, 2017).

In this article, the Wechsler Intelligence Scale for Children-Fourth Edition (WISC-IV; Wechsler, 2003) was selected as the focal intelligence assessment instrument for examining its role in identifying DBDs and potential risk factors associated with juvenile delinquency (JD). Although other standardized measures of intellectual functioning, including the Stanford-Binet Intelligence Scale-5th Edition (SB-5; Roid & Pomplun, 2012) and the Slosson-Full Range Intelligence Test (S-FRIT; Slosson & Nicholson, 1990; Williams et al., 2007), were considered, the WISC-IV was selected because of its widespread use and strong representation in the literature. The S-FRIT has also shown good concurrent validity with the WISC and Woodcock-Johnson tests (Bell et al., 2002). This study employed a conceptual and narrative literature review methodology, which is described in the following section.

2. RESEARCH METHODOLOGY

This article adopted a conceptual and narrative literature review methodology to examine the potential role of WISC-IV in the early identification of children with Disruptive Behavior Disorders (DBDs), and also in evaluating psychosocial risk factors associated with JD. Rather than generating primary empirical data, this study synthesized existing theoretical, clinical, and empirical literature concerning cognitive functioning, executive deficits, disruptive behavior, and developmental criminology. Relevant peer-reviewed journal articles, clinical manuals, diagnostic frameworks, and theoretical studies were reviewed to identify recurring patterns concerning the relationships between cognitive functioning, behavioral dysregulation, and antisocial developmental trajectories. A multidisciplinary lens integrating developmental psychology, neuropsychology, educational assessment, and criminological perspectives guided the analysis (Farrington, 2005; Moffitt, 1993).

The methodology involved a critical examination of literature concerning the use of the WISC-IV in assessing executive functioning domains, particularly working memory and processing speed, which have frequently been associated with attentional and behavioral regulation difficulties among children with disruptive behaviors (Flanagan & Kaufman, 2009). Studies examining cognitive profiles in children

with attention-deficit and behavioral disorders were reviewed to identify neuropsychological patterns relevant to DBD assessment and delinquency risk evaluation (Kim et al., 2020; Styck & Watkins, 2017). Additionally, theoretical perspectives such as developmental taxonomy and ecological models of child development were examined to understand how cognitive vulnerabilities may interact with environmental risk factors, including family instability, poor school engagement, and adverse peer influences, in shaping behavioral outcomes (Bronfenbrenner, 1979; Moffitt, 1993).

Based on this integrative review process, the article developed a proposed standard operating procedure (SOP) for assessment and intervention (see Sub-Section 4.3), demonstrating how WISC-IV findings may be incorporated into a multimodal assessment framework involving behavioral observations, clinical interviews, and contextual evaluation. The methodology emphasizes interpretive synthesis rather than causal inference, with the objective of providing clinicians, educators, and allied professionals with a theoretically informed framework for early identification, preventive intervention, and multidisciplinary support for children demonstrating disruptive behavioral patterns (APA, 2013; Flanagan & Kaufman, 2009).

3. THE THEORETICAL FRAMEWORK FOR BETTER UNDERSTANDING OF DISRUPTIVE BEHAVIOR

The application of cognitive assessment battery, e.g., Wechsler Intelligence Scale for Children-Fourth Edition (WISC-IV; Wechsler, 2003) and Behavior Assessment System for Children-Third Edition (BASC-3; Reynolds & Kanphus, 2015; also see Altmann et al., 2018), in understanding disruptive behavior can be grounded in several theoretical perspectives (Hodges, 2017). The developmental taxonomy proposed by Terrie E. Moffitt, Professor of Social Development at King's College London since 1996, and now also Nannerl O. Keohane University Professor of Psychology at Duke University, distinguishes between adolescence-limited antisocial behavior and life-course-persistent antisocial behavior, suggesting that neuropsychological deficits may contribute to persistent patterns of antisocial conduct beginning in childhood (Moffitt, 1993). According to this model, cognitive impairments can affect executive functioning, language development, and problem solving, and as such, they hinder a child's ability to adapt to social expectations and regulate behavior effectively (Clark et al., 2002).

Similarly, ecological models of child development place the emphasis on the emergence of behavioral outcomes from the interaction between individual characteristics and environmental contexts (Sameroff, 1991; Woodhead, 1991). Cognitive limitations may interact with environmental stressors (e.g., academic challenges, inconsistent parenting, and socioeconomic disadvantage), leading to an increased risk of disruptive behavior and delinquency (Farrington, 2005). Within this eco-framework, cognitive assessments (e.g., WISC-IV and BASC-3) can help to identify the neuropsychological vulnerabilities that lead to maladaptive behavioral trajectories.

The WISC-IV is a widely recognized standardized assessment of cognitive functioning in children, evaluating intellectual abilities across four core indices: Verbal Comprehension (VCI), Perceptual Reasoning (PRI), Working Memory (WMI), and Processing Speed (PSI). These WISC-IV indices provide a multidimensional cognitive profile that helps clinical assessors to identify patterns of strengths and needs related to learning, attention, and behavioral regulation (Flanagan & Kaufman, 2009). Although the WISC-IV is not designed to diagnose DBDs directly, the cognitive patterns it reveals may offer important insights into neuropsychological factors associated with impaired executive functioning and self-regulation, which are frequently observed among children with disruptive behavioral problems.

In the assessment of children with DBDs, the WISC-IV is therefore used as part of a comprehensive psychological evaluation rather than as a stand-alone diagnostic tool. According to Fenollar-Cortés et al. (2015), cognitive profiles derived from the WISC-IV may reveal weaknesses in executive functions, especially in working memory and processing speed, that have been associated with behavioral dysregulation, impulsivity, and attentional difficulties. Empirical studies (e.g., Fenollar-Cortés et al., 2015; January et al., 2015) have reported that children with attention-related and behavioral disorders often

demonstrate relatively lower scores on the Working Memory Index (WMI) and Processing Speed Index (PSI) compared with other cognitive domains, suggesting impairments in executive control and cognitive efficiency that may contribute to disruptive behavioral patterns (Styck & Watkins, 2017; Kim et al., 2020). Such cognitive limitations may reduce a child's ability to inhibit inappropriate responses, sustain attention to tasks or rules, and effectively regulate emotional reactions in challenging social situations.

Within a broader developmental and criminological framework, cognitive functioning assessed through intelligence testing has also been linked to risk factors for JD. Lower intellectual functioning and deficits in executive processes may limit a child's capacity for problem solving, moral reasoning, and anticipation of consequences, thereby increasing vulnerability to antisocial behavior when these cognitive vulnerabilities interact with environmental stressors (Moffitt, 1993; Farrington, 2005). As a result, cognitive assessment findings can contribute to a structured risk evaluation by highlighting neuropsychological characteristics that may interact with psychosocial factors such as academic difficulties, family conflict, and negative peer influences. However, it is important to emphasize that intelligence test scores alone cannot predict delinquency; they must be interpreted within a comprehensive ecological and developmental assessment framework (Hodges, 2017).

4. APPLICATION OF WISC-IV TO IDENTIFY DISRUPTIVE BEHAVIOR DISORDERS AND POTENTIAL RISK FOR JUVENILE DELINQUENCY

4.1 WISC-IV Cognitive Indices and DBD Patterns

The WISC-IV is a widely used standardized instrument for assessing the intellectual functioning of children aged 6-16 years. It produces a Full-Scale IQ (FSIQ) along with its four primary index scores: Verbal Comprehension, Perceptual Reasoning, Working Memory, and Processing Speed (Wechsler, 2003; Flanagan & Kaufman, 2009). These indices represent distinct but interrelated domains of cognitive functioning, including verbal reasoning, visual-spatial processing, short-term memory, and cognitive efficiency. When assessing children suspected of DBDs, such as oppositional defiant disorder (ODD) and conduct disorder (CD), the cognitive profiles generated by the WISC-IV can help identify weaknesses in executive functioning processes, particularly in WMI and PSI, which are often associated with behavioral dysregulation, impulsivity, and attentional difficulties (Vacher et al., 2022). Empirical studies (e.g., Styck & Watkins, 2017; Kim et al., 2020) have consistently shown that children with behavioral and attentional problems tend to demonstrate relatively lower scores on the WMI and PSI compared with other cognitive indices. These weaknesses suggest impairments in executive control and cognitive efficiency (Brandt et al., 2009; Traykov et al., 2007), which affect one's ability to maintain attention, follow instructions, and inhibit impulsive responses. Table 1 illustrates how specific patterns in WISC-IV cognitive profiles can be interpreted in relation to possible neuropsychological characteristics, behavioral risk indicators, and their implications for assessment and intervention in children with DBD (Miller et al., 2022; Van Goozen et al., 2022). The interpretive framework presented is consistent with clinical approaches to WISC-IV profile analysis described by Flanagan and Kaufman (2009).

For example, a reduced WMI or working memory capacity limits a child's ability to retain and manipulate information, during the engagement in complex tasks (e.g., remembering classroom rules or following multi-step instructions). At the same time, lower PSI or slower processing speed interferes with the efficient completion of academic tasks, thereby, potentially leading to frustration, reduced task persistence, and negative classroom experiences (Jarrold et al., 2014; Mulder et al., 2011). Behaviorally, these cognitive challenges may manifest as inattentiveness, impulsivity, or oppositional responses. These behavioral traits are commonly observed in children with disruptive behavioral patterns. Consequently, identifying such cognitive weaknesses can help clinical assessors and educational therapists to better understand the underlying mechanisms that contribute to behavioral difficulties.

Table 1: Interpretation of WISC-IV Cognitive Profiles and Possible Behavioral Risk Indicators

WISC-IV Cognitive Pattern	Possible Neuropsychological Interpretation	Behavioral Risk Indicators	Potential Implications for Assessment and Intervention
Low Working Memory Index (WMI) relative to other indices	Weak executive control, difficulty maintaining information in mind, reduced attentional regulation	Impulsivity, difficulty following rules or instructions, distractibility, frustration in academic tasks	Executive functioning training, structured classroom routines, cognitive behavioral interventions
Low Processing Speed Index (PSI)	Reduced cognitive efficiency & slower information processing	Academic frustration, avoidance of tasks, irritability, disruptive classroom behavior	Academic accommodations, extended time, task simplification, behavioral self-monitoring strategies
Significant discrepancy: High PRI with Low VCI	Strong visual-spatial reasoning but weaker verbal comprehension & language-mediated reasoning	Misinterpretation of verbal instructions, difficulty expressing emotions, conflict with authority figures	Language support, social communication training, explicit instruction in social rules
Low Verbal Comprehension Index (VCI)	Limited verbal reasoning & reduced understanding of abstract social concepts	Difficulty understanding rules, limited moral reasoning, increased susceptibility to peer influence	Social problem-solving training, moral reasoning development programs
Overall Low Full-Scale IQ with uneven profile	General cognitive limitations affecting reasoning, planning, & adaptive functioning	Difficulty anticipating consequences, vulnerability to manipulation by peers, risk of maladaptive decision-making	Comprehensive educational support, adaptive skills training, close supervision & mentoring
Large variability among indices (scatter)	Uneven cognitive development; strengths in some domains but significant weaknesses in others	Inconsistent behavior, frustration due to uneven abilities, emotional dysregulation	Individualized educational planning, strengths-based intervention approaches
High PRI with weak WMI and PSI	Strong nonverbal reasoning but poor executive functioning & cognitive efficiency	Impulsivity despite adequate reasoning ability, difficulty translating ideas into organized behavior	Executive functioning coaching, planning strategies, structured behavioral supports
Low PSI with relatively stronger reasoning indices	Adequate reasoning but difficulty performing tasks quickly or efficiently	Task avoidance, disruptive behavior to escape demanding tasks	Classroom pacing adjustments, supportive academic environment

4.2 Discussion on Developmental/Criminological Risk

Within a wider developmental and criminological perspective, cognitive functioning measured through IQ testing has also been associated with risk factors for JD (Loeber et al., 2012). Lower intellectual functioning or slower cognitive processing, and deficits in executive processes may reduce a child's ability to engage in effective problem-solving, moral reasoning, and anticipation of behavioral consequences (Pinsonneault et al., 2016). When such cognitive vulnerabilities interact with adverse environmental conditions (e.g., family instability, academic failure, or negative peer influences), they may increase the likelihood of persistent antisocial behavior (Moffitt, 1993; Farrington, 2005). Hence, WISC-IV results can contribute to risk assessment by identifying cognitive limitations that may interact with psychosocial stressors. It is, however, crucial to stress that WISC-IV scores alone cannot predict delinquency and must be interpreted within a comprehensive ecological and developmental assessment framework.

4.3 Clinical Application of WISC-IV in Practice

In clinical practice, the use of WISC-IV results in evaluating children with DBD often follows a structured assessment process. This process typically begins with referral and intake procedures, during which clinical assessors gather background information from parents, teachers, and relevant records to determine whether a full psychological evaluation is warranted. A multimodal assessment is then conducted, combining the WISC-IV with behavioral rating scales, clinical interviews, and observations

across home and school environments. Subsequent cognitive profile analysis focuses on the relationships among the WISC-IV index scores and scaled scores of subtests, with particular attention to discrepancies, e.g., comparatively lower working memory or processing speed scores relative to verbal or perceptual reasoning abilities. These patterns may indicate executive functioning difficulties associated with attention and behavioral regulation problems (Drigas & Karyotaki, 2019). The interpretation of score patterns, strengths, weaknesses (needs), and significant discrepancies among indices follows established WISC-IV interpretive practices (Flanagan & Kauafman, 2009).

The interpretation of findings obtained from the WISC-IV administration also involves integrating cognitive data with behavioral observations, developmental history, and environmental context in order to determine whether the child meets diagnostic criteria for DBD. Additionally, the same procedure applies to the evaluation of potential psychosocial risk factors for antisocial developmental trajectories. Following the diagnosis, clinical assessors use the information obtained from the cognitive profile to guide them in their intervention planning and risk management strategies (Beall et al., 2016). Interventions may include behavioral therapy, executive-function training, school-based accommodations, family counseling, and social skills development programs. For children who manifest risk factors associated with later delinquent behavior, preventive strategies may also involve collaboration with pediatric clinics/hospitals, educational institutions, community services, and mentoring programs designed to support adaptive behavioral development.

Ongoing monitoring and follow-up assessments are typically conducted to evaluate changes in cognitive functioning, academic progress, and behavioral outcomes over time, similar to the continuous evaluation practices used in pediatric oncology (Annett et al., 2015). Through this systematic and multidisciplinary approach, WISC-IV findings serve not as a predictive measure of delinquency but as a valuable component of early identification and intervention efforts aimed at reducing the likelihood that childhood disruptive behaviors will develop into persistent antisocial patterns.

The following Table 2 provides the interpretation notes for clinical and educational use of WISC-IV:

Table 2. Interpretation of WISC-IV Results for Clinical and Educational Use

No.	What is it?	What does it imply?
1.	Profiles do not predict delinquency directly	Cognitive patterns identified through the WISC-IV should not be interpreted as deterministic indicators of antisocial behavior. Instead, they highlight neuropsychological vulnerabilities that may interact with environmental stressors.
2.	Multidisciplinary assessment is essential	Cognitive findings must be integrated with behavioral observations, developmental history, family context, & school environment.
3.	Early intervention reduces risk trajectories	When cognitive weaknesses affecting executive functioning or social reasoning are identified early, targeted interventions can significantly improve behavioral outcomes & reduce long-term risk.
4.	Strength-based interpretation is recommended	Even children with significant behavioral difficulties often demonstrate cognitive strengths that can be leveraged in intervention planning.

In practice, this author has proposed the application of WISC-IV findings in evaluating children with DBD and that it follows a structured assessment-intervention process (see Table 3 below). Termed as the WISC-IV Guided DBD Assessment and Intervention Framework (W-DAIF), its emphasis is on WISC-IV to guide the overall diagnostic and intervention process. Briefly explained, the framework begins with referral and multimodal assessment, proceeds into cognitive profile analysis and integrated interpretation, and finally, ends with intervention planning and monitoring.

5. PRACTICAL IMPLEMENTATION OF THE W-DAIF

The WISC-IV Guided DBD Assessment and Intervention Framework (W-DAIF) provides a structured approach for integrating cognitive assessment findings into the evaluation and management of children

and adolescents presenting with DBDs, including oppositional defiant disorder and conduct disorder. Within this framework, the WISC-IV is not used as a diagnostic instrument for DBDs but as a tool for identifying cognitive strengths and weaknesses that may contribute to behavioral dysregulation. Particular attention is given to the Verbal Comprehension Index (VCI), Working Memory Index (WMI), and Processing Speed Index (PSI), as deficits in these domains may affect social reasoning, impulse control, emotional regulation, problem solving, and the ability to anticipate behavioral consequences (Fragnito, 2015; O'Brien-Ernest, 2016). Cognitive assessment findings are interpreted alongside behavioral rating scales, clinical interviews, developmental histories, and observations across home, school, and community settings to develop a comprehensive understanding of the child's behavioral functioning (Flanagan & Kaufman, 2009; Wechsler, 2003).

In practice, the W-DAIF guides clinicians through a systematic process of assessment, interpretation, intervention planning, and ongoing monitoring. Following the identification of cognitive vulnerabilities, intervention strategies are tailored to address both behavioral symptoms and underlying cognitive limitations (Flanagan & Kaufman, 2009). For example, children demonstrating weaknesses in working memory may benefit from structured behavioral supports, simplified instructions, and executive-function training, whereas those with reduced processing speed may require modified task demands, additional response time, and educational accommodations. The framework also encourages multidisciplinary collaboration among psychologists, educators, healthcare professionals, social workers, and families to ensure that interventions are implemented consistently across settings. Such an integrated approach aligns with contemporary models of evidence-based practice that emphasize individualized support and ecological intervention planning (APA, 2013; Bronfenbrenner, 1979).

The W-DAIF further contributes to the early identification of children who may be at increased risk for persistent behavioral difficulties and subsequent antisocial outcomes. Rather than viewing cognitive deficits as direct predictors of JD, the framework recognizes that cognitive vulnerabilities interact with environmental influences such as family conflict, academic failure, peer relationships, and community factors. Consequently, WISC-IV findings are used to inform preventive interventions, strengthen protective factors, and reduce developmental risks associated with long-term behavioral maladjustment. Through this structured and multidisciplinary approach, the W-DAIF supports more precise assessment, targeted intervention planning, and ongoing evaluation of outcomes for children and adolescents with DBDs (Farrington, 2005; Moffitt, 1993).

5. STANDARD OPERATING PROCEDURE FOR ASSESSMENT & INTERVENTION

The process of W-DAIF starts with *Step 1-Referral and Intake Assessment*, during which clinical assessors gather background information from parents, teachers, and relevant records to determine whether behavioral concerns warrant a full psychological evaluation. This is followed by *Step 2-Multimodal Assessment*, combining the WISC-IV with behavioral rating scales (e.g., BASC-3), clinical interviews, and behavioral observations across home and school settings.

Subsequently, clinical assessors conduct *Step 3-Cognitive Profile Analysis* by examining relationships among the WISC-IV index scores and subtests. Particular attention is given to discrepancies, e.g., comparatively lower WMI or PSI scores relative to verbal or perceptual reasoning abilities, as these patterns may indicate executive functioning deficits associated with attentional and behavioral regulation difficulties (Flanagan & Kaufman, 2009). The next move involves *Step 4-Integrated Interpretation*. This is where cognitive findings are synthesized with behavioral data, developmental history, and environmental factors. The aim is to determine if the child meets diagnostic criteria for DBD, and also to evaluate potential psychosocial risk factors for antisocial developmental trajectories.

Following diagnosis, the assessment process informs *Step 5-Intervention Planning* which also includes risk management strategies. Clinical assessors and educational therapists may use the cognitive profile to design individualized intervention plans (IIPs), including executive-function training, behavioral therapy, school-based accommodations, and family-centered counseling. For children who

demonstrate risk factors associated with later delinquent behavior, preventive strategies may also involve social skills training, structured mentoring programs, and collaboration with educational therapy clinics and other community service agencies (e.g., student service centers and family service centers). Finally, *Step 6-Monitoring and Follow-up Evaluations* are conducted periodically to assess changes in cognitive functioning, academic progress, and behavioral outcomes over time.

Through the systematic and multidisciplinary approach of W-DAIF, it is important to note that findings obtained from the WISC-IV administration do not serve as a direct predictor of delinquency. However, the WISC-IV results constitute an important component of early identification and intervention efforts (Prifitera et al., 2005; Weiss et al., 2016). By providing insight into cognitive processes related to self-regulation and behavioral control, the WISC-IV can support clinical assessors and educational therapists in developing targeted strategies aimed at preventing the escalation of disruptive behaviors into persistent antisocial patterns.

Table 3 below shows the standard operating procedure for WISC-IV assessment with its suggested follow-up intervention activities in W-DAIF.

Table 3. WISC-IV Guided DBD Assessment and Intervention Framework (W-DAIF)

No.	Step	What is the Step about?
1.	Referral & Intake Assessment	• The assessment process typically begins with a referral from parents, teachers, or healthcare professionals who observe persistent behavioral concerns or problems. • The initial intake involves gathering developmental history, academic or educational records & behavioral observations across multiple settings.
2.	Multimodal Assessment	• A comprehensive evaluation should include cognitive testing using the WISC-IV, behavioral rating scales completed by parents and teachers, clinical interviews & direct behavioral observation across home and school settings. • This multimodal approach allows clinicians to assess both cognitive functioning & behavioral patterns.
3.	Cognitive Profile Analysis	• Clinical assessors examine patterns of index scores and subtest results to identify significant discrepancies or weaknesses in cognitive functioning, following established WISC-IV interpretive principles for identifying cognitive strengths, weaknesses, and executive-functioning deficits.
4.	Integrated Interpretation	• Findings from cognitive testing are integrated with behavioral assessments & contextual information to determine whether the child meets diagnostic criteria for DBD & to evaluate potential risk factors for antisocial behavior.
5.	Intervention Planning	• Based on the integrated assessment, educational therapists develop individualized intervention plans that may include behavioral therapy, executive functioning training, educational accommodations & family-based interventions or counseling.
6.	Monitoring & Follow-Up Evaluations	• Follow-up evaluations & periodic reassessments are regularly conducted to monitor progress & adjust interventions as necessary. • The aim is to ensure the intervention strategies remain effective & responsive to the child's developmental needs while it is also to address both cognitive & behavioral challenges.

Within the WISC-IV, several subtests are particularly useful for identifying cognitive weaknesses associated with DBD (e.g., conduct disorder or oppositional defiant disorder) and potential risk factors for JD, especially deficits in executive functioning, attention, and self-regulation (Clark et al., 2002; Conroy & Brown, 2004). Subtests from the WMI and PSI are especially informative. For example, Digit Span and Letter-Number Sequencing assess working memory, attention control, and the ability to manipulate information mentally; weaknesses in these areas are often associated with impulsivity and poor behavioral regulation (Hodges, 2017; Wechsler, 2003). Similarly, the processing speed subtests Coding and Symbol Search measure cognitive efficiency, sustained attention, and visual scanning speed. Lower performance on these tasks may indicate difficulties with attention, inhibitory control, and executive functioning, which are cognitive characteristics commonly observed in children with behavioral and impulse-control problems (Hodges, 2017; Nigg, 2017; Scope et al., 2010). In addition, subtests such as Matrix Reasoning or Block Design may provide information about nonverbal reasoning and problem-solving, helping clinical assessors examine broader cognitive discrepancies that could

contribute to maladaptive behavioral patterns (Hodges, 2017). When interpreted together, these subtests help clinical assessors identify deficits in working memory and processing speed, which are the key cognitive domains linked to executive functioning and behavioral self-regulation (Hodges, 2017; Wechsler, 2003; Drigas & Karyotaki, 2019). Table 4 below is a tabulated summary of the selected WISC-IV subtests that can help identify cognitive patterns associated with DBD and potential risk factors for JD.

Table 4. Selected WISC-IV Subtests for Identification of DBD & Potential Risks of Juvenile Delinquency

WISC-IV Subtest	Index	Cognitive Skills Assessed	Relevance to Disruptive Behavior Disorders / Juvenile Delinquency Risk
Digit Span	Working Memory Index	Attention, short-term auditory memory, mental manipulation of information	Weaknesses may reflect poor attention control and difficulty regulating impulses, which are associated with disruptive behaviors.
Letter-Number Sequencing	Working Memory Index	Working memory, sequencing, cognitive flexibility	Low scores may indicate deficits in executive functioning & self-regulation, contributing to impulsive or oppositional behaviors.
Coding	Processing Speed Index	Visual-motor coordination, attention, processing speed	Slow or inaccurate performance may reflect reduced sustained attention & inhibitory control, commonly observed in children with behavioral regulation problems.
Symbol Search	Processing Speed Index	Visual scanning, attention, cognitive efficiency	Deficits may indicate problems with sustained attention & monitoring behavior, which can contribute to impulsivity and behavioral difficulties.
Matrix Reasoning	Perceptual Reasoning Index	Nonverbal reasoning, pattern recognition, problem-solving	Helps assess cognitive reasoning abilities; discrepancies between reasoning ability & behavioral functioning may indicate executive control difficulties.
Block Design	Perceptual Reasoning Index	Visual-spatial processing, planning, organization	Difficulties may reflect challenges with planning and problem-solving, which can affect adaptive decision-making & behavioral control.

6. IMPLICATIONS FOR PREVENTION AND INTERVENTION

The use of cognitive assessment in behavioral evaluations highlights the importance of early identification of neuropsychological vulnerabilities (Hodges, 2017; Hoogs et al., 2010; Volpi et al., 2017). Early assessment enables clinical assessors and educational therapists to detect deficits in executive functioning, attention regulation, and cognitive processing that may contribute to disruptive behavioral patterns (Hodges, 2017). Identifying these vulnerabilities at an early stage allows educational therapists to design targeted interventions that can address both cognitive and behavioral needs before maladaptive patterns become more entrenched (Barkley, 2015; Moffitt, 2018). Early detection is especially crucial because difficulties in executive functioning (e.g., poor working memory, inhibitory control, and cognitive flexibility) are often associated with impulsivity, aggression, and difficulties in following rules or social norms (Diamond, 2013).

Intervention strategies targeting executive functioning, social skills, and emotional regulation can significantly improve outcomes for children with DBD. Moreover, evidence-based approaches (e.g., cognitive behavioral therapy, executive functioning training, and structured behavioral management strategies) help such children develop better self-control, problem-solving skills, and emotional awareness (Kazdin, 2012; Diamond & Ling, 2016). The aim of these intervention strategies is to strengthen cognitive processes that are involved in planning, monitoring behavior, and regulating emotions, and are important for adaptive functioning in school and social environments.

Moreover, school-based interventions, family support programs, and community initiatives also play critical roles in preventing the progression of behavioral problems into delinquency. Collaborative efforts among educators, mental health professionals (e.g., psychologists, counsellors and allied therapists), and families can create consistent behavioral expectations and supportive environments that reinforce positive behavior. Programs incorporating (i) parent training, (ii) classroom behavior management, and

(iii) peer relationship support have been shown to reduce conduct problems and improve long-term psychosocial outcomes (Conduct Problems Prevention Research Group [CPPRG], 2011; Farrington et al., 2008). Such comprehensive, multi-systemic approaches are particularly crucial in addressing the complex interplay among the three factors: (i) cognitive vulnerabilities, (ii) environmental influences, and (iii) behavioral development.

7. WHAT ABOUT JUVENILE DELINQUENTS WITH DISABILITIES?

When dealing with juvenile delinquents with disabilities, it requires a different approach to manage those young/youth offenders with disabilities (YODs), which is the term used to describe them (Katsiyannis et al., 2012; Katsiyannis & Murry, 2000). It is important to develop another framework to understand YODs, especially how neurodevelopmental and cognitive limitations may contribute indirectly to their offending behaviors. Such offenders with disabilities are generally referred to those with cognitive, developmental, or neurological impairments who engage in behaviors that may violate social or legal norms because of deficits in judgment, impulse control, social comprehension, or adaptive functioning rather than deliberate criminal intent (Katsiyannis et al., 2012; Katsiyannis & Murry, 2000). In this context, cognitive assessments (e.g., WISC-IV, SB-5, and S-FRIT) can play a valuable role in identifying neuropsychological vulnerabilities that may influence behavioral outcomes (Hodges, 2017).

Children with significant weaknesses in working memory, processing speed, or verbal reasoning may manifest difficulty understanding social rules, interpreting the intentions of others, or anticipating the consequences of their actions (Gruszka & Nęcka, 2017). Such limitations may lead to behavioral responses that appear oppositional or aggressive but are rooted in impaired cognitive processing and executive functioning (Flanagan & Kaufman, 2009; Moffitt, 1993). In educational and clinical settings, identifying these cognitive patterns early allows professionals to design targeted interventions that address underlying cognitive deficits rather than focusing solely on behavioral control.

From a forensic perspective, cognitive assessment findings may also inform risk management and rehabilitation strategies for YODs who exhibit antisocial or delinquent behaviors (Bailey et al., 2007). Developmental criminology research indicates that neuropsychological deficits interact with environmental risk factors (e.g., family adversity, academic failure, and exposure to deviant peers) to increase the likelihood of persistent antisocial behavior (Farrington, 2005). Recognizing the potential role of cognitive impairment in behavioral difficulties may therefore support more equitable responses within juvenile justice systems, emphasizing treatment and support rather than punitive measures alone. Within the context of W-DAIF, the WISC-IV results can contribute to a broader understanding of the YOD's neurodevelopmental profile and help guide multidisciplinary intervention strategies that address both cognitive and behavioral needs.

8. LIMITATIONS OF COGNITIVE TESTING IN PREDICTING JUVENILE DELINQUENCY

Despite the value of cognitive assessments in identifying neuropsychological vulnerabilities, intelligence testing alone cannot reliably predict delinquency or criminal behavior (Loeber et al., 2012). The development of antisocial behavior is influenced by a complex interaction of biological, psychological, and environmental factors. While lower intellectual functioning and executive deficits have been associated with increased risk for behavioral difficulties, these factors represent only one component within a broader ecological system affecting child development (Farrington, 2005; Moffitt, 1993).

One limitation of the WISC-IV applied in W-DAIF is that it measures cognitive abilities within a structured testing environment. This may not fully capture the dynamic social contexts in which disruptive behaviors occur. Though factors, e.g., family relationships, school climate, socioeconomic stressors, and peer influences, may exert a substantial impact on behavioral outcomes, they are not directly measured by cognitive tests. Consequently, reliance on the WISC-IV (or any other IQ tests) results alone may lead to incomplete or potentially misleading interpretations of a child's behavioral functioning.

Another limitation noted concerns the involvement of the interpretation of cognitive profiles, such as the WISC-IV profiles, in culturally and linguistically diverse populations. In addition, differences in language, experiential exposure, educational opportunities, and cultural-specific experiences may also influence test performance, potentially affecting the accuracy of conclusions drawn from standardized assessments (Flanagan & Kaufman, 2009). Hence, clinical assessors must interpret the WISC-IV results with caution, putting into their consideration that contextual factors may affect performance.

Furthermore, ethical considerations should always guide the use of WISC-IV in behavioral and forensic contexts. IQ test results should not be used to label or stigmatize children as future offenders. Instead, this author argues that cognitive findings should be integrated into a strengths-based framework with emphasis on early intervention, skill development, and supportive socio-educational environments. Multidisciplinary assessments that combine psychological testing with behavioral observations, clinical interviews, and environmental evaluations should remain essential for better understanding the complex pathways that may lead to disruptive behavior or delinquency.

9. CONCLUSION

In conclusion, though WISC-IV provides valuable insights into the cognitive functioning of children who present with behavioral and emotional difficulties, it is not designed to diagnose DBD or directly predict JD. The multidimensional cognitive profiles that WISC-IV generates can reveal patterns of strengths and needs associated with executive functioning deficits, attentional regulation problems, and impaired problem-solving abilities. These cognitive deficit traits are often linked to behavioral dysregulation and may help explain some of the difficulties observed in children who exhibit disruptive behavioral patterns.

When the WISC-IV findings are integrated with (i) behavioral assessments (Oakland et al., 2005), (ii) developmental history (Prifitera et al., 2005), and (iii) socio-cultural environmental context (Harris & Llorente, 2005), they contribute to a more comprehensive understanding of a child's overall functioning and the mechanisms underlying disruptive behavior. Such an integrated approach as W-DAIF allows clinical assessors and educational therapists to interpret cognitive findings within a broader eco-developmental framework, ensuring that WISC-IV results are not considered in isolation; instead, they should constitute as part of a multidimensional evaluation process. Taken together, the combination of cognitive assessment (e.g., WISC-IV), behavioral evaluation (e.g., BASC-3), and contextual analysis provides a more comprehensive perspective for better understanding of complex factors that influence children's self-regulation, learning, and social functioning.

The implementation of the structured standard operating procedure (SOP), i.e., W-DAIF, further strengthens this process by guiding clinical assessors and educational therapists through systematic steps of assessment, interpretation, and intervention planning. Through this structured W-DAIF approach, cognitive findings can be translated into targeted strategies aimed at improving self-regulation, academic engagement, and social competence. Intervention strategies informed by any standardized cognitive assessment battery may include executive-function training, behavioral therapy, school-based support, and family-centered interventions customized to the child's specific needs.

Ultimately, early cognitive assessment combined with multidisciplinary collaboration plays a critical role in identifying children vulnerable to persistent disruptive behaviors. Timely identification and targeted intervention allow clinical assessors, allied therapists, educators, and families to address underlying cognitive and environmental risk factors before behavioral difficulties escalate. Recognizing the potential influence of neurodevelopmental and cognitive factors in DBD also aligns with emerging perspectives on YODs with emphasis on rehabilitation, restorative education, and supportive interventions rather than punitive responses. This proposed approach promotes more equitable and effective strategies for addressing the complex challenges associated with DBD and for reducing the likelihood that disruptive behaviors progress into persistent antisocial patterns or involvement in juvenile justice systems (Farrington, 2005; Moffitt, 1993).

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Author has declared that no competing interests exist.

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