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Applying Ecosystemic Autopsy to Juvenile Delinquency: A Multi-Level Case Analysis of Adolescent Development

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ABSTRACT

Juvenile delinquency is a complex developmental and social concern shaped by the interaction of behavioural, emotional, academic, familial, social, and environmental factors. Although ecological perspectives recognize these influences, an integrated examination of how risk and protective factors interact across developmental stages remains important for understanding individual pathways to delinquency. This paper applies the Ecosystemic Autopsy (EcoA) framework, grounded in Bronfenbrenner's Ecological Systems Theory, to develop a contextualized understanding of juvenile delinquency through a retrospective qualitative single-case analysis. The case involved an 18-year-old male, assigned the pseudonym "Daniel," selected because the available documentation covered multiple developmental and ecological domains. Data were drawn from one consolidated case review report containing psychoeducational assessments, developmental history, educational records, behavioural observations, and previous intervention records. The researcher organized the documented information into five a priori ecological categories: microsystem, mesosystem, exosystem, macrosystem, and chronosystem. The report documented difficulties in working memory, processing speed, reading comprehension, and written expression, alongside behavioural and emotional challenges. It also recorded practical and vocational strengths and responded positively to structured environments. The ecological interpretation suggests that individual vulnerabilities and contextual adversities may have interacted over time in relation to Daniel's delinquent behaviour. This case demonstrates the value of EcoA to integrate developmental and ecological information into a strengths-based formulation, informing coordinated educational, psychological, social, and juvenile justice support. However, findings are not generalizable beyond this case. The retrospective single-case design, reliance on one report, and absence of individual publication consent are important limitations.

INTRODUCTION

Juvenile delinquency and disruptive behaviour continue to be major concerns in educational, psychological, and social service settings (Eme, 2019). Adolescents who engage in such behaviours often experience emotional, behavioural, academic, and social challenges that impact their functioning across various contexts, including school and home. If left unaddressed, persistent disruptive behaviours may contribute to a cascade of adverse outcomes, including school exclusion, peer rejection, and justice-system contact, which may increase the likelihood of long-term antisocial behaviour and underscore the importance of early support (Bonta & Andrews, 2023). The transition through adolescence and early adulthood represent critical developmental window for intervention, during which targeted and well-designed interventions may have greater potential to influence developmental outcomes (Hodgkinson *et al.*, 2021).

Although behaviours such as aggression, truancy, vandalism, theft, and oppositional conduct are often managed through disciplinary measures, such approaches may overlook the developmental and contextual factors that contribute to these behaviours. Adolescent development is shaped by the dynamic interaction between individuals and their environments, including family relationships, school experiences, peer influences, socioeconomic conditions, and exposure to adversity (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2007). In particular, adolescents with Adverse Childhood Experiences (ACEs), for instance family neglect, violence, and instability, are at increased risk of developing emotional and behavioural challenges that may contribute to delinquent behaviour (Felitti *et al.*, 1998). These perspectives emphasize the need for holistic approach that consider the broader ecological context in understanding juvenile delinquency.

The ecosystemic autopsy (EcoA) framework provides a structured approach in understanding these complexities by studying the interaction of cognitive, emotional, relational, educational, familial and environmental systems, while identifying both risk and protective factors relevant to development (Bronfenbrenner, 1979). Rather than spotting problems within the individual, EcoA considers how behaviour develops within interacting ecological systems. This paper utilizes the EcoA framework to the case of "Daniel," an 18-year-old male with a history of delinquent behaviour, academic challenges, and ACEs. The objective is to examine how factors across the microsystem, mesosystem, exosystem, macrosystem, and chronosystem interact across his developmental trajectory. Through this case analysis, the paper contributes a contextual and strengths-based perspective on juvenile delinquency and highlights implications for educational, social, and multi-systemic approaches to assessment and intervention.

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LITERATURE REVIEW

Ecological System Theory

The ecological system theory founded by Urie Bronfenbrenner emphasizes on viewing a child's development as being shaped by social and environmental contexts around them and the relationships between those contexts (Sadownik, 2023). Thus, a child's development should not be solely relied on the results of individual characteristics alone, but also the social, cultural, and environmental contexts as well. Bronfenbrenner proposed five interconnected and nested ecological system layers:

Microsystem: It includes the persons or community that directly contact with the child that influence the child's life. For instance, parents, siblings, neighbourhood, therapists, teachers, peers, and school.

Mesosystem: It involves the interconnection between two or more microsystems that affect a child's life. For instance, the collaboration between parents and school.

Exosystem: It relates to the broader social structures that a child does not participate in directly, but will bring impact on the child's development. For instance, parents' working environment, and adverse family history.

Macrosystem: It is the widest layer of general socio-cultural context that involves societal laws, cultural beliefs, traditions, values, and norms. For instance, legal systems, educational policies, and religious beliefs.

Chronosystem: It refers to the dimension of time, encompassing changes and transitions that occur throughout the child's life, including historical, cultural, and social developments. For instance, parental divorce, transition to a new school, and economic crisis.

Rather than functioning in isolation, these ecological systems engage in a constant and active interplay that influences a child's development (Bronfenbrenner & Morris, 2007). Thus, alterations or difficulties happened in any system may influence functioning in other systems as well. For example, family conflict within microsystem may influence a child's emotional well-being and behaviour at school, while limited communication between parents and teachers within mesosystem may hinder early identification and intervention. The similar situations may happen within exosystem, macrosystem, and chronosystem, such as parental work stress, socioeconomic hardship, and cultural expectations may shape the child's experiences and developmental outcomes.

Bronfenbrenner (1979) highlighted that development emerges from mutual interactions between individual and these interconnected systems over time. Therefore, difficulties with behaviours, emotions, and education do not simply stem from the child alone; instead, they result from how a child's personal traits interact with their surroundings. This viewpoint is crucial when addressing complex situations that involve a mix of behavioural issues, academic hurdles, and ACEs.

Ecological Systems Theory serves as a valuable framework in recognizing and understanding multiple environmental systems contribute to an individual's development and functioning. By analyzing the impacts across the five layers of ecological system (microsystem, mesosystem, exosystem, macrosystem, and chronosystem), professionals can have a comprehensive understanding of risk and protective factors that shape behavioural, emotional, and educational outcomes. Such an approach forms the theoretical foundation of EcoA, which seeks to understand individuals within the broader contexts in which they develop and function.

Ecosystemic Autopsy

The term ecosystemic autopsy (EcoA) was developed by Chia (2025) which based on Bronfenbrenner's ecosystem theory. EcoA refers to a systemic post event investigation to understand the factors and consequences of an event by examining multiple ecological systems of an individual (individual, family, community, institutional, environmental, cultural). Therefore, EcoA helps to explore how the multiple ecosystems interact to shape behaviours and life outcomes.

To achieve a holistic view of an individual's life experiences, an EcoA investigates the complex relational dynamics both within and across various systems. In this case, EcoA helps identify the reason why an individual's challenges and distress can become severe or even life-threatening (Ding, 2026). Thus, it facilitates the professionals develop targeted interventions by identifying factors contribute to or maintain difficulties across various settings.

MATERIALS AND METHODS

Research Design

This study adopted a retrospective qualitative single-case analysis to examine the developmental and ecological factors associated with juvenile delinquency. Guided by Bronfenbrenner's Ecological Systems Theory, the EcoA framework served as the central analytical lens. The analysis focused on examining how individual characteristics and familial, educational, social, and environmental circumstances may have interacted across different developmental periods. Rather than establishing causal relationships or evaluating intervention effectiveness, the study aimed to develop a contextualised understanding of the risk and protective factors associated with the individual's developmental trajectory.

Case Selection and Data Sources

The subject of this study, an 18-year-old male assigned the pseudonym "Daniel" to protect his identity. The case was selected because the available documentation provided information across several developmental and ecological domains, including individual functioning, family circumstances, educational experiences, peer relationships, previous interventions, and juvenile justice involvement.

The case information was obtained from a third-party professional organization, in the form of a previous case review report. The researcher did not conduct interviews, administer assessments, or collect information directly

from Daniel or relevant stakeholders. The available material comprised of the case review report, which incorporated information about Daniel's developmental history, family background, psychoeducational assessment findings, educational experiences, behavioural functioning, and previous interventions. No original assessment protocols or separate assessment reports were available to the researcher. The report contained information relating to different periods of Daniel's development, allowing the researcher to examine his experiences across the five ecological systems and over time. The researcher received the case review report as a single, consolidated document rather than collecting data prospectively across multiple time points. Although the report detailed various developmental stages, the researcher did not independently gather or cross-verify data from those periods. The psychoeducational data were derived from a prior evaluation conducted by a qualified clinician and retrieved via the case review report. The contextual details, such as specific assessment dates, administration conditions, and informants for the rating scales could not be independently verified.

Case Description

Background and Developmental History

Daniel came from a low-income single-parent household, lived with his mother and two younger siblings in public housing. His parents divorced when he was eight following a history of domestic abuse and intense marital conflict. Daniel currently had minimal contact with his father, who had a history of alcohol misuse and violent offences. Due to his mother's demanding schedule across multiple part-time jobs, she had limited availability to provide steady supervision or be actively involved in Daniel's daily routine.

While Daniel's birth was full-term without complications and his early physical development was on track, the early signs of hyperactivity and impulsivity were noted by caregivers. By preschool, difficulties with attention, emotional regulation, and behavioural control were reported. Throughout primary school, these challenges escalated into frequent temper tantrums, defiance, peer conflicts, and rule-breaking. Daniel also faced multiple ACEs, including witnessing domestic violence, enduring physical punishment and emotional neglect, and experiencing frequent school transfers associated with housing instability.

Behavioural and Delinquency History

Daniel's behavioural difficulties worsened significantly during his teenage years. According to school records, he received multiple suspensions for authority defiance, classroom disruption, truancy, physical altercations, and vandalism.

Around the secondary-school-age years, Daniel began associating with older peers engaged in criminal behaviour, leading to his first contact with law enforcement for shoplifting. Subsequent offenses included theft of electronic items, vandalism of public property, participation in gang fights, and possession of stolen property. After a few years, his participation in group robbery resulted in formal processing through the juvenile justice system and court-mandated probation.

While educators and probation officers frequently described Daniel as defensive, quick-tempered, and distrustful of authority figures, they also reported that he was capable of cooperative and appropriate behaviour when given structured boundaries and well-defined expectations.

Psychoeducational Assessment

A comprehensive psychoeducational assessment was administered to examine Daniel's cognitive, academic, behavioural, emotional, and adaptive functioning. The assessment included the Wechsler Adult Intelligence Scale-Fourth Edition (WAIS-IV), Wechsler Individual Achievement Test-Third Edition (WIAT-III), Behaviour Assessment System for Children-Third Edition (BASC-3), and Vineland Adaptive Behaviour Scales-Third Edition (Vineland-3).

Wechsler Adult Intelligence Scale-Fourth Edition (WAIS-IV)

The WAIS-IV was conducted to understand Daniel's overall intellectual functioning (See Table 1). His Full Scale IQ was 82, falling within the Low Average range. Daniel has relatively strength in Perceptual Reasoning with 90 (Average), but relatively weak in Working Memory with 78 (Borderline) and Processing Speed with 74 (Borderline).

Table 1: The Results of WAIS-IV

Index	Score	Interpretation
Verbal Comprehension	85	Low Average
Perceptual Reasoning	90	Average
Working Memory	78	Borderline
Processing Speed	74	Borderline
Full Scale IQ	82	Low Average

Wechsler Individual Achievement Test-Third Edition (WIAT-III)

The WIAT-III was administered to evaluate Daniel's academic performance (see Table 2). His scores indicated difficulties across several academic domains, particularly reading comprehension and written expression. According to teachers' feedback, Daniel regularly withdrew from classroom tasks requiring extended reading or writing.

Table 2: The Results of WIAT-III

Domain	Score	Interpretation
Word Reading	80	Below Average
Reading Comprehension	75	Borderline
Written Expression	72	Borderline
Mathematics	84	Low Average

Behaviour Assessment System for Children-Third Edition (BASC-3)

Daniel's behavioural and emotional functioning was assessed using the BASC-3. The assessment results indicated clinically significant elevations in Conduct Problems, Aggression, Hyperactivity, Attitude toward School, and Attitude toward Teachers. Moderate elevations were observed in Anxiety, Emotional Self-Control, and Negative Emotionality.

Vineland Adaptive Behaviour Scale-Third Edition (Vineland-3)

The adaptive functioning of Daniel was evaluated using Vineland-3. Results showed below-average functioning in socialization, interpersonal problem-solving, responsibility, and rule-following. However, practical daily living skills are the strengths of Daniel which include independent transportation and basic vocational competencies.

Previous Interventions

Daniel had participated in several educational, psychological, and community-based intervention programmes throughout his development. School-based interventions such as behavioural modification plans, counselling with school psychologists, and temporary placement in a specialized behavioural classroom. However, these interventions demonstrated limited long-term effectiveness with inconsistent participation and frequent school transitions reported as factors affecting continuity.

During his teenage period, Daniel attended a short-term cognitive-behavioural therapy (CBT) program which emphasizing on impulse control strategies, emotional awareness, and conflict resolution skills. Previously, Daniel gained improvement in managing anger during structured sessions, yet these gains were not consistently generalised to his everyday environments.

Following his involvement with the juvenile justice system in his mid-teens, Daniel required to attend probation supervision, community service programs, and youth rehabilitation workshop particularly focusing on vocational training and social responsibility. Reports from probation officers indicated that Daniel performed better to structured settings that provided clear expectations and consistent supervision.

Ecosystemic Autopsy Framework and Data Analysis

The case information was analyzed using the Ecosystemic Autopsy (EcoA) framework, grounded in Bronfenbrenner's Ecological Systems Theory. The documented information was organized according to five ecological systems: microsystem, mesosystem, exosystem, macrosystem, and chronosystem. Within each system, relevant risk and protective factors were identified and considered in relation to Daniel's developmental and behavioural experiences. Emphasis was directed toward understanding the complex interplay between individual characteristics and familial, educational, peer, institutional, and broader environmental circumstances. Rather than aiming to establish causality or generalize results to broader populations, this analysis focused on building a contextual formulation of Daniel's developmental path. The five ecological systems functioned as a priori analytical categories for structuring the case data. Relevant case information was systematically assigned to its corresponding ecological level, after which cross-system dynamics and temporal relationships were analyzed. The study did not incorporate formal qualitative coding schemas or software-assisted analysis.

As a single researcher conducted the analysis, the ecological framework's application was inevitably shaped by their professional background in psychological, educational, and behavioral functioning. To reduce bias and prevent unsupported claims, analytical interpretations were explicitly differentiated from documented case facts and framed conservatively. Nevertheless, the lack of independent coding, member checking, and primary source access inherently constrained the analytical verification process.

Although the document offered a comprehensive summary across functional areas, the limited access to primary records, including family interviews and institutional files prevented independent data verification. As a result, methodological triangulation could not be performed.

Ethical Consideration

The case review report was provided by a third-party professional organization, which authorised its use for academic journal publication. As the case involved historical records and the individual and family were no longer contactable, individual informed consent for publication could not be obtained. To protect confidentiality, the pseudonym "Daniel" was used, and personally identifying information was omitted or modified to minimise the possibility of identification. The absence of individual publication consent is acknowledged as an ethical limitation of this study.

RESULTS AND DISCUSSION

Microsystem

The ecosystemic analysis recognized Daniel's family environment as an important context in his developmental trajectory. The experience of domestic violence, physical punishment, emotional neglect, parental separation, and inconsistent supervision demonstrated multiple sources of adversity within family microsystem. Along with financial constraint and limited parental availability may affect his emotional regulation and social development.

Daniel's description of feeling "mostly on my own growing up" further reflects his perceived lack of steady emotional nurturing. Research suggests that childhood exposure to violence, neglect, and other adverse experiences were associated with emotional and behavioural challenges (Petersen *et al.*, 2014; Sharrat *et al.*, 2022). From an ecological viewpoint, these findings highlight the importance of taking into account of family adversity and individual vulnerabilities together when understanding Daniel's behavioural difficulties, rather than attributing his delinquency to a single factor.

For Daniel's school environment, the ecosystemic analysis identified persistent academic and behavioural difficulties. Early reports recorded difficulties in attentional control, emotional regulation, task completion, and peer conflict, while psychoeducational assessment revealed Daniel's lower performance in working memory, processing speed, sustained attention, written expression and reading comprehension. These difficulties may have increased his vulnerability to academic frustration and school disengagement. Research suggests that negative self-evaluations are associated with greater school absenteeism among adolescents (Liu *et al.*, 2026).

Frequent school suspensions may limit Daniel's learning opportunities and contributed to academic gaps. Based on the BASC-3 results, Daniel demonstrated significant elevations in Attitude toward School and Attitude toward Teachers, showing negative perceptions of his educational environment. From an ecological perspective, the interaction between academic difficulties, behavioural problems, and school disengagement may have reinforced Daniel's difficulties within the school microsystem and this highlights the importance of considering both academic and behavioural needs when understanding persistent school difficulties.

Around age 14, Daniel began associating with older, delinquent peers, marking an important change in his social environment. Joining this group provided him with a sense of belonging, identity and social acceptance that was less available in other areas of his life. Research demonstrates that association with delinquent peers is an essential risk factor for adolescent offending, as peer group could influence one's behavioural norms and reinforce antisocial conduct (Yeng & Mohamad, 2023). In Daniel's case, participation in unlawful activities may therefore have been reinforced by the desire for social acceptance and group belonging. From an ecological perspective, the peer microsystem provided a social context in which delinquent behaviour could be learned, normalized, and reinforced, increasing Daniel's exposure to further offending opportunities.

Mesosystem

The ecosystemic analysis identified limited continuity and coordination between Daniel's family, school, and intervention systems. His mother's demanding work schedule reduced her availability to monitor his academic progress and maintain consistent communication with the school, while frequent school changes further disrupted the persistence of educational support. These situations may have weakened the connection between home and school which affect the opportunities for consistent academic and behavioural support. Research suggests that effective family-school collaboration is correlated to better student engagement, academic functioning, and behavioural adjustment, particularly among students experiencing multiple challenges (Martinez-Yarza *et al.*, 2024). From a mesosystemic perspective, limited coordination between family and school may further affect Daniel's difficulties in academic and behaviours.

Other than that, both educational setting and intervention services also noticed a similar limited continuity. Although Daniel received behavioural therapies, counselling, psychological intervention, and juvenile justice services, frequent school changes and inconsistent participation affect the consistent support. The improvement that noted during structured psychological sessions was also difficult to maintain in everyday settings. Research highlights the importance of coordinated services and consistent support across settings for adolescent with behavioural and justice related difficulties (Piper *et al.*, 2026). From a mesosystemic viewpoint, the limited effectiveness of previous intervention should not be solely depended on Daniel's failure to respond positively towards treatment, but also should consider the regular intervention strategies that connected across his environments.

Therefore, the mesosystemic analysis emphasizes the significance of collaboration among family, educational, psychological, community, and juvenile justice services. Daniel responded best to clear expectations and structured environments, suggesting that a more consistent routine helped support his growth. Thus, strengthening communication and shared goals across services represents an important area for multi-level support.

Exosystem

The ecosystemic analysis identified socioeconomic status, housing instability, parental employment demands, and paternal involvement with alcohol misuse and the criminal justice system as important influences that affect Daniel indirectly. Daniel's mother worked multiple part-time jobs to sustain household which affects the consistent supervision and involvement in Daniel's education. Rather than blaming it as parental unwillingness to support, this pattern highlights how socioeconomic

pressures may limit family resources and indirectly affect an individual's developmental opportunities. Research has linked socioeconomic disadvantage with greater academic difficulties and school absenteeism, which may increase vulnerability to negative peer influences (Knaappila *et al.*, 2019).

Housing instability also disrupted the support across Daniel's educational and social environments. Frequent relocations and school transfers may have interrupted academic instruction, peer connections, and professional support networks. Similarly, his father's history of alcohol misuse and criminal behaviour indirectly affected family circumstances that may have impacted the stability and behavioural norms within Daniel's environment. Studies indicate that parental involvement in the criminal justice system, alongside frequent absence from the home, diminishes a child's sense of family cohesion, support, and communication, making them vulnerable to substance misuse and delinquent behaviour (Saladino *et al.*, 2021).

From an exosystemic perspective, considering structural and socioeconomic conditions are crucial to examine Daniel's behavioural difficulties and avoid overlook the broader circumstances that shaped the resources, stability, and support available to him.

Macrosystem

The macrosystem encompasses broader sociocultural, economic, and institutional structures that shape an individual's developmental opportunities. In Daniel's case, socioeconomic inequality may have restricted his accessibility to obtain quality education, community resources, and sustained intervention services. These structural barriers also limited the continuity of support needed to address various difficulties.

School disciplinary policies also significantly shape Daniel's developmental trajectory. Repeated school suspension may have disrupted educational continuity and academic engagement. Research indicates that applying exclusionary disciplinary measures may diminish students' sense of school belonging (Kim *et al.*, 2026). In Daniel's case, repeated exclusion from school may have worsened his existing academic difficulties and disengagement. However, the suspension alone does not contribute to his subsequent delinquent behaviour; rather, it highlights the need to consider whether disciplinary responses adequately addressed the underlying academic, behavioural, and developmental needs of students experiencing persistent difficulties.

In the same way, although juvenile justice interventions were intended to address Daniel's offending behaviour, his cognitive, academic, emotional, and environmental needs may not have been fully addressed. When the interventions focus primarily on managing offending behaviour without sufficiently considering these underlying needs, the efficiency of long-term behavioural change may be limited. From a macrosystemic perspective, Daniel's case highlights the importance of adjusting educational and juvenile justice policies with developmental understanding, ensuring that accountability is accompanied by comprehensive assessment, rehabilitation, and ongoing support.

Chronosystem

The chronosystem examines how life transition and developmental changes throughout Daniel's lifetime. Daniel's early childhood was characterised by exposure to domestic violence, physical punishment, emotional neglect, and family instability. At the age of 8, parental divorce was coincided with economic hardship and reduced paternal involvement, heightened the challenges within his developmental environment.

Daniel's behavioural challenges first surfaced during primary school and progressively worsened throughout his adolescence. By age 12, he had developed significant disciplinary problems, and started associating with delinquent peer groups by 14. His entry into the juvenile justice system at age 16 marked a critical turning point in his developmental trajectory. A combination of early hardship, ongoing struggles in school, and association with delinquent peers appears to have cumulatively heightened his risk for severe behavioural problems.

During the age 18, Daniel's participation in vocational training represented a potential opportunity for positive change. His ability to cooperate in structured environments suggests that clear expectations and consistent supervision may support his engagement and functioning. While this does not prove lasting behavioural change, it underscores the need to identify opportunities for positive development alongside existing risk factors.

A chronosystemic analysis illustrates that Daniel's challenges stemmed from a series of cumulative, interacting experiences rather than an isolated incident. Early adversity, academic instability, behavioural issues, and negative peer influences likely reinforced one another over time. However, his current enrolment in vocational training shows that his developmental pathway is not fixed. This highlights the need for timely, sustained, and developmentally appropriate interventions to mitigate persistent risks and foster resilience.

Ecosystemic Synthesis

The ecosystemic analysis suggests that Daniel's delinquent behaviour stemmed from a complex mix of personal vulnerabilities and environmental factors interacting throughout his development. Instead of acting in isolation, these factors may have amplified each other over time, driving ongoing behavioural difficulties and eventual juvenile justice involvement. This perspective reframes delinquency from an exclusively individual problem to a developmental outcome shaped by connected social and institutional contexts.

The analysis also emphasizes the need of considering both risk and protective factors in development. Although Daniel experienced numerous adversities, his future was not predetermined. Rather, his case illustrates individual uniqueness and the potential for development

as situations and opportunities change.

Ultimately, the contribution of the ecosystemic autopsy lies in combining developmental, educational, family, social, and institutional information into a clear, unified case profile. This approach helps pinpoint where targeted support is needed, avoiding from blaming delinquency solely on the individual or their family. Furthermore, it underscores the critical collaboration across educational, psychological, social, and juvenile justice system when supporting adolescents with complex and persistent behavioural difficulties.

Recommendations for Multi-level Practice

This section outlines potential strategies to support Daniel across each level of the ecological system.

Microsystem

At the individual level, intervention should address Daniel's difficulties with emotional regulation, impulse control, and problem-solving. Cognitive Behavioural Therapy (CBT) may help him identify emotional triggers, recognize maladaptive thought patterns and utilize appropriate coping techniques to de-escalate. Research indicates that CBT successfully supports adolescents with Intermittent Explosive Disorder by targeting cognitive distortions, emotion dysregulation, and impulse control deficits (Soleimani-Rad *et al.*, 2026). For instance, practicing emotion-regulation exercises, structured problem-solving, and conflict-resolution could help seamlessly integrate these skills into everyday routines. As Daniel struggles to sustain his therapeutic progress outside of formal sessions, his intervention plan should include chances to apply and reinforce these skills across relevant settings. Additionally, his progress also should be monitored consistently with strategies adjusted based on his level of participation and needs.

From an academic perspective, Daniel requires intensive support to manage his coursework, particularly in reading comprehension, writing expression, working memory, and processing speed. The intervention should implement individualized, evidence-based literacy programs featuring direct instruction. Strategies such as breaking complex or comprehensive tasks into smaller chunks could reduce working-memory demands, enabling Daniel to manage multi-step assignments with less cognitive strain (Soni & Frank, 2025). Granting extended time on challenging tasks can also alleviate anxiety and build his task confidence. Reading comprehension strategies, including Reciprocal Teaching, where students take turns leading small-group discussions can significantly improve understanding (William *et al.*, 2025). Academic intervention should be coordinated with behavioural support so that underlying learning difficulties are addressed alongside classroom participation and engagement.

Although family support plays a crucial role in supporting Daniel, it also should be practical and responsive to meet Daniel's mother demands. Staying informed about Daniel's academic progress, school concerns, and support needs may help maintain her involvement without imposing unrealistic demands on her time. Parent psychoeducation or Parent Management Training (PMT) can help refine Daniel's mother parenting strategies by strengthening positive reinforcement, clear communication, and consistent behavioural expectations. Research indicates that PMT reduces child behavioural issues by teaching techniques such as tactful praise, clear commands, selective ignoring, routine scheduling, reward systems, and firm limit-setting (Seleem *et al.*, 2026). Such support should be tailored to mother's financial and employment reality, avoiding placing blame on parental inadequacy.

Mesosystem

At this level, communication and coordination among Daniel's family, school, psychological services, vocational services, and juvenile justice services should be strengthened. A collaborated support plan could establish shared goal, define each stakeholder's responsibilities, and provide a consistent approach to monitor Daniel's academic, behavioural, and vocational progress. Regular meetings for case review should be conducted alongside strict information-sharing safeguards and consent frameworks can detect emerging issues early and ensure continuity of care. Daniel's previous difficulties maintaining effectiveness of intervention across settings highlight the importance of connecting intervention strategies with his everyday environments. Rather than operating independently to address isolated concerns, professionals should work towards consistent expectations and complementary strategies. An evidence-based approach, Multisystemic Therapy (MST) may be appropriate for Daniel as it focused on addressing core challenges within the family and community settings by building rapport and offering recommendations based on clinical observations of adolescent and multiple settings in real-world environments (Zajac *et al.*, 2015). Adopting such a framework would bridge the gap between distinct service providers, ensuring that therapeutic gains are reinforced across all areas of Daniel's daily life.

Exosystem

This level primarily addresses the systemic barriers that may hinder caregiver participation. Flexible appointment times, remote consultations where suitable, and accessible community-based support may help accommodate Daniel's mother's work commitments. In addition, these services are crucial for assisting household through financial and housing instability, ensuring consistent attendance and intervention continuity. Furthermore, leveraging Daniel's practical abilities and participation in vocational training will help him with appropriate career guidance, job readiness, and community programmes. These opportunities can foster work-related and independent living skills while offering structured routines during his transition to adulthood. Ultimately, such services should be accessible and sustained rather

than expecting the family to navigate multiple service systems independently.

Macrosystem

At the macrosystem level, educational and juvenile justice services should prioritize developmentally appropriate interventions for adolescent facing persistent behavioural challenges. Rather than relying on exclusion, school should first determine whether recurring disciplinary issues reflect unaddressed academic, behavioural, or psychosocial needs that required targeted assessment and support. The screening tools, such as the Strengths and Difficulties Questionnaire (SDQ), may contribute to early identification of conduct issues, hyperactivity, emotional regulation struggles, and interpersonal difficulties (Goodman, 1997).

For adolescents involved in the juvenile justice system, institutional frameworks should ensure continuity of education, access to appropriate psychological services, and preparation for vocational participation. Educational and developmental goals are more effectively integrated into treatment planning when educational authorities, probation services, mental health professionals, and vocational providers establish formal partnerships. After conducting comprehensive assessments, an individualized educational support plan can be developed based on adolescent's learning profile, strengths, and support needs. Ultimately, for adolescents like Daniel who present with co-occurring behavioural difficulties, academic deficits, and cognitive vulnerabilities, an integrated framework ensures that educational needs are systematically addressed within the broader intervention rather than treated in isolation from offending behaviour.

Chronosystem

At this level, both early intervention and continuity of support across developmental transitions should be addressed. Daniel's developmental history highlights several early warning signs that preceded his severe delinquent behaviour, including school-age academic deficits, peer conflict, strained teacher relationships, and acts of vandalism. Early identification should serve as the precursor to timely assessment, targeted intervention, and regular progress review rather than isolated or short-term responses.

For adolescent with existing juvenile justice involvement, sustained support should remain continuous as they transit between school, rehabilitation services, vocational training, and employment. In Daniel's case, vocational training allows him develop his practical strengths while continue monitoring his ongoing educational, behavioural, and adjustment needs. A structured transition plan with explicit goals, designated support personnel, and systematic follow-up may facilitate ongoing continuity as he works toward greater independence. This approach recognizes that developmental progress evolves over time, requiring continuous support beyond the initial intervention period.

CONCLUSION

This paper applied the EcoA framework to examine Daniel's juvenile delinquency, examining the interactions among individual, family, educational, social, and environmental systems. Rather than stemming from a single cause, Daniel's involvement in delinquent behaviour appears to be the result of multiple, interconnected risk factors developed over time. His experiences illustrate how early adversity, academic and behavioural difficulties, delinquent peer influences, and socioeconomic circumstances may interact across developmental stages and contribute to persistent difficulties. Conversely, Daniel demonstrated strengths in vocational training, highlighting potential pathways for positive developmental change.

The findings emphasize the need of moving past individual-centered explanations of juvenile delinquency towards a more holistic, developmentally informed approach. Effective responses should integrate psychological and behavioural intervention involved targeted educational support, accessible family services, and coordinated collaboration among educational, social, vocational, and juvenile justice agencies. Promptly addressing Daniel's early academic, emotional, and social challenges while maintaining consistent support through developmental transitions is critical to prevent deeply rooted behavioural issues and ensuring smooth reintegration into education and vocational settings.

Nevertheless, this study is limited by its single-case design, which cannot be generalized to all adolescents with delinquent behaviours. Additionally, portions of Daniel's history relied on retrospective case records and self-reported accounts, which are subject to incomplete documentation or recall bias. Future research involving multi-case comparisons and longitudinal designs would offer deeper insights into how ecological risk and protective factors interact over time and how the EcoA framework may inform assessment and intervention in juvenile justice contexts.

Overall, by examining how individual interact with their environments over time, EcoA provides a practical, positive framework to understand why delinquency occurs. It also identifies not only the environmental conditions associated with behavioural challenges, but also the opportunities for coordinated support and positive developmental change. Such framework fosters the evolution of responsive educational, social, and juvenile justice systems that recognize the developmental needs and future potential of young people.

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