Determinants of Juvenile Delinquency: A Global Systematic Review of Risk and Protective Factors Among Adolescents (2000–2024)

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ABSTRACT

Juvenile delinquency is a complex issue driven by interactions between individual, social, and structural factors. This systematic literature review uses the PRISMA 2020 guidelines to analyze empirical evidence on risk and protective factors for adolescent delinquency published between 2000 and 2024. From an initial search of 832 records in Scopus, we selected 15 peer-reviewed studies for narrative synthesis. The results indicate that delinquency stems from problems across multiple ecological levels. The most consistent risk factors identified were family dysfunction, specifically maltreatment, adverse childhood experiences (ACEs), and parental incarceration, and association with delinquent peers. Conversely, protective factors function as active buffers rather than just the absence of risk. Key elements that significantly reduce delinquency include positive parenting, secure parent–child attachment, school connectedness, self-regulation, empathy, and future academic aspirations. The review highlights early to mid-adolescence as a critical window for intervention and suggests that prevention strategies should focus on building resilience through family and school support.

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1. INTRODUCTION

Juvenile delinquency is a dynamic issue that evolves alongside social and technological changes. It refers to individuals under the age of 18 engaging in antisocial behavior or illegal acts that violate laws and social norms. [1], [2]. In current literature, the terms "juvenile delinquency" and "antisocial behavior" are often used interchangeably to describe a range of problematic behaviors. These behaviors emerge across various settings, including family, school, peer groups, and the community, demonstrating that delinquency results from complex interactions between individual traits and their social environment [2], [3]. While delinquency rates and predictors vary by country, research consistently shows that opportunities and peer support for aggressive behavior increase from early to mid-adolescence. Interestingly, longitudinal studies indicate that differences *within* a specific culture are often greater than differences *between* cultures [4], [5]. This reinforces the fact that the causes of juvenile delinquency are diverse and multifaceted rather than uniform

Studies based on ecological perspectives view juvenile delinquency as the outcome of interactions across multiple systems. These range from individual factors (such as temperament and executive functioning) to direct environments or "microsystems" (family, peers, and schools), and finally to broader "macrosystems" (community, socioeconomic status, and culture). This approach emphasizes that delinquency is not caused by a single factor, but rather by the dynamic accumulation of risk and protective factors throughout development [6], [7], [8], [9], [10]. Furthermore, long-term personal traits often interact with situational peer pressure to influence delinquency. However, systematic reviews suggest that much of the literature still analyzes these domains separately, pointing to a need for more integrated ecological research [3].

Within the ecological framework, research consistently views risk and protective factors as connected rather than separate issues. Evidence shows that the risk of juvenile delinquency is complex and works across various levels of a child's environment [7], [11]. At the most immediate level, family problems, such as conflict, neglect, and maltreatment, along with individual brain-based challenges like executive function deficits, have been proven as strong predictors of delinquent behavior [12], [13], [14], [15]. This link is well-

supported by both long-term studies and meta-analyses. Beyond the home, school difficulties (especially academic failure) and negative peer pressure also act as key situational triggers for offending and re-offending [14], [16], [17]. On a broader scale, poverty and disadvantaged neighborhoods stand out as major environmental risks. Taken together, the evidence supports a cumulative risk model, where these immediate and broader factors build up and interact to increase the likelihood of juvenile delinquency [3], [6], [7].

Conversely, protective factors act as buffers that reduce adolescents' vulnerability to delinquency. Evidence shows that these positive influences work across all environments to consistently lower risk. At the family level, strong support and warm parent–child relationships help protect at-risk youth and are linked to lower rates of delinquency and recidivism [12]. In the school context, positive engagement, including emotional connection, active participation, and academic success, plays a key role in reducing antisocial behavior [12], [18]. At the individual level, emotional regulation, self-control, and personal resilience are strongly linked to lower delinquency and serve as core strengths in a child's development [7], [18]. Together, these factors work synergistically across family, school, and individual systems to balance out or compensate for risks. This highlights that effective interventions cannot simply focus on reducing harm; they must also actively strengthen these protective factors [7], [18].

The years 2000 to 2024 brought a digital revolution that fundamentally changed the environment in which adolescents grow up, introducing new types of risks and protections. While traditional research on juvenile delinquency is solid, our understanding of how the digital era influences antisocial behavior is still developing. For instance, a South Korean meta-analysis by Kim et al. (2023) highlights a rise in research on online delinquency and shows that online and offline behaviors differ significantly in their impact. This suggests that digital influences have not yet been fully incorporated into existing theories of delinquency. The study also found that social learning theory provides the best explanation for these behaviors, though the strength of the connection varies between online and offline contexts [19].

Although ecological frameworks have long been used to study juvenile delinquency, recent literature still shows significant gaps. Current reviews often feel fragmented because they tend to analyze risk factors in isolation without simultaneously looking at protective factors. This approach limits our understanding of how different systems interact with one another [3]. Additionally, the vast majority of studies come from Western contexts, particularly the United States. This creates a "Western-centric" bias, limiting how well these findings apply to non-Western cultures and settings [20]. Another limitation is the scarcity of research that analyzes risk and protective factors together, even though evidence suggests that combining them offers better predictive power and a clearer understanding of how to mitigate risks [7]. Finally, the impact of the digital era, including online delinquency and changes in parenting or social interaction, has not yet been fully integrated into broader research on juvenile delinquency [19].

Recent systematic reviews and meta-analyses (2020–2024) consistently highlight the urgent need for research that integrates different cultures and accounts for the impact of the digital era [6], [12], [14], [18], [19]. To address these gaps, this study presents a global Systematic Literature Review (SLR) that combines both risk and protective factors of juvenile delinquency from 2000 to 2024. Using the PICO framework, this review analyzes how exposure to risks versus the presence of protective buffers influences the development or prevention of delinquent behavior in adolescents aged 12 to under 18. By doing this, the study aims to provide strong empirical evidence to help create interventions that are effective, adaptable, and relevant to specific contexts.

2. METHOD

This study uses a Systematic Literature Review (SLR) to analyze global evidence on the risk and protective factors of juvenile delinquency. To ensure the process was transparent and reproducible, we followed the PRISMA 2020 guidelines [21]. Although the protocol was not registered in advance (e.g., in PROSPERO), we strictly adhered to reporting standards by applying the PRISMA checklist at every stage of the review. This step was taken to ensure that the final synthesis of evidence remained comprehensive and methodologically sound [12].

A comprehensive literature search was conducted using the Scopus database. The selection of a single database was justified by Scopus's extensive and multidisciplinary indexing coverage across the social sciences, criminology, and developmental psychology, which was deemed sufficient to capture a broad representation of the global literature on juvenile delinquency [22]. The search strategy was specifically designed to identify primary empirical studies using the following search string: TITLE-ABS-KEY(("juvenile delinquency" OR "youth crime" OR "adolescent delinquency") AND ("risk factor" OR "protective factor") AND ("adolescent*" OR "teen*" OR "youth*"). This approach was employed to accommodate commonly used terminological variations within the relevant literature [23], [24].

The search was restricted to articles published between January 2000 and December 2024 in order to capture contemporary empirical developments in the field [25]. Inclusion criteria encompassed original empirical studies (quantitative, qualitative, or mixed-methods) published in peer-reviewed journals that involved adolescents aged 12 to under 18 years, explicitly examined risk or protective factors associated with juvenile delinquency, and were available in full-text form [21], [23], [26], [27]. No language restrictions were imposed; non-English-language articles were included, provided they met the eligibility criteria and allowed for accurate data extraction. Non-empirical studies (e.g., reviews and editorials), studies involving populations outside the target age range, and grey literature were excluded.

The screening and data extraction processes were managed using the Rayyan web-based application, employing a blinded review mechanism to minimize selection bias [28], [29]. Screening was conducted independently by two reviewers in two sequential stages (title/abstract and full-text review), with any disagreements resolved through consensus or, when necessary, by consultation with a third reviewer [21], [28], [30]. All stages of the study selection process, along with reasons for exclusion, were documented using a PRISMA flow diagram. Data were extracted using a standardized form that captured study identifiers, methodological design, sample characteristics, and key findings related to risk and protective factors associated with juvenile delinquency [21].

Given the substantial methodological and contextual heterogeneity across included studies, which limited the validity of statistical pooling, a meta-analysis was not conducted [31], [32]. Instead, this review employed a narrative synthesis using a thematic analysis approach, encompassing stages of familiarization, initial coding, and thematic clustering of risk and protective factors [31]. The coding process was guided by Bronfenbrenner's ecological framework (individual, microsystem, and macrosystem levels) to comprehensively map the interactions among determinants of juvenile delinquency across diverse geographic contexts over the period from 2000 to 2024 [23], [24], [25].

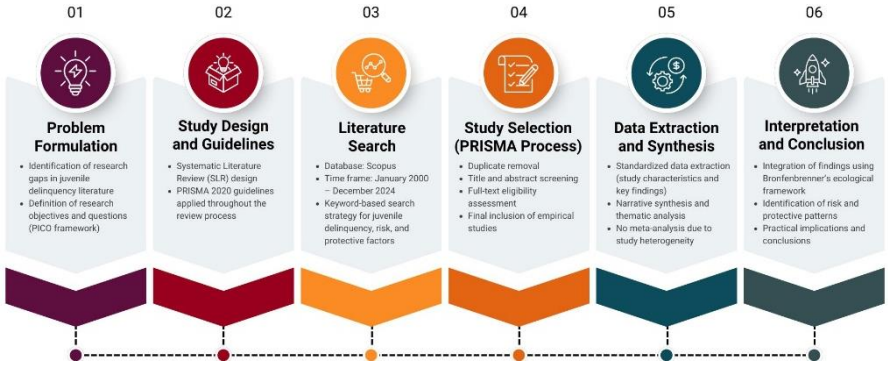

Figure 1. Research Flow Diagram

3. RESULTS AND DISCUSSION

The initial literature search conducted in the Scopus database yielded a total of 832 records. Following the removal of duplicates using reference management software, 818 unique articles remained for the initial screening stage. The study selection process was carried out in accordance with the PRISMA 2020 guidelines, as detailed in Figure 1.

During the title screening stage, 545 articles were excluded due to topical irrelevance (e.g., studies addressing juvenile delinquency solely from a legal perspective without incorporating psychological or social variables). The remaining 273 articles were subsequently assessed at the abstract level. At this stage, 187 articles were excluded for failing to meet the inclusion criteria, including the use of non-empirical designs (e.g., editorials and policy briefs) or the examination of non-target populations (e.g., adults).

A total of 86 articles proceeded to the full-text assessment stage to determine eligibility. A rigorous evaluation was conducted based on the primary inclusion criteria. At this stage, 71 articles were excluded for the following main reasons: (1) the studies were literature reviews or secondary meta-analyses rather than primary empirical research; (2) insufficient reporting of specific data on risk and/or protective factors; or (3) lack of clarity regarding methodological design. Ultimately, 15 primary empirical studies met the eligibility criteria and were included in the final synthesis (see Table 1).

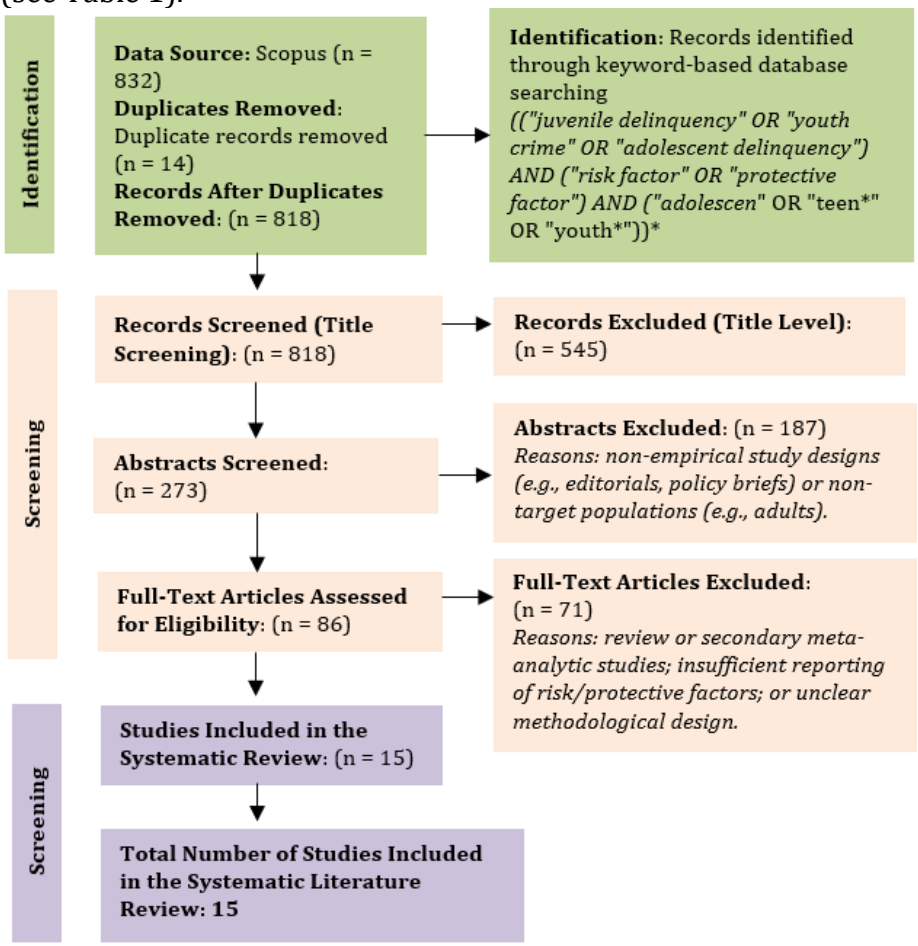

Figure 2. Prisma Diagram

Table 1. Characteristics of Included Studies

No	Author & Year	Country	Design & Sample (N)	Key Measures	Key Findings (Risk/Protective)	Overall Quality
1	McNaughton Reyes et al. (2020) [33]	United States (North Carolina)	Longitudinal cohort (Grades 6–12); *N* = 2,823 adolescents	Latent Self-control, negative emotionality, family violence, parental monitoring, peer substance use	**Risk:** family violence (AOR = 1.66 for girls), low self-control, negative emotionality, peer substance use. **Protective:** parental monitoring, deviance intolerance, future aspirations	High methodological rigor (MTGBM; entropy = .74); large sample; limitations include self-report and regional scope
2	Barnert et al. (2021) [34]	United States	National longitudinal study (Add Health); *N* = 12,136	Delinquency, substance use, GPA, family connectedness, parental incarceration	**Risk:** disruptive behavior, substance use, childhood abuse, parental incarceration, stepfather household. **Protective:** higher GPA, college plans. **Note:** risk profiles varied by race/ethnicity	High quality; nationally representative; robust regression models; limitations include self-report and attrition
3	Fagan et al. (2024) [35]	United States	Longitudinal cohort (birth–age 15); *N* = 4,255	Cumulative family/parent/child risk, self-control, parental monitoring, parent–child closeness	**Risk:** cumulative father, mother, child, and family risks. **Protective:** child self-control (mediator), father–child closeness (moderator). **Note:** higher risk effects stronger for boys	High quality; SEM with bootstrapping; diverse urban cohort; limitations include missing father data
4	Xiong et al. (2020) [36]	China	Two-wave longitudinal study; *N* = 1,066	Authoritative parenting, mental health problems, delinquen	**Protective:** authoritative parenting (direct & indirect). **Risk:** mental health problems, delinquent peer	High quality; SEM with good fit; representative sampling

No	Author & Year	Country	Design & Sample (N)	Key Measures	Key Findings (Risk/Protective)	Overall Quality
			adolescents	t peers, delinquency	association. **Mediation:** mental health and peers mediate parenting effects	
5	Yun (2021) [37]	South Korea	Longitudinal survival analysis (2012–2016); N = 2,277	Parenting style, school adjustment, peer relations, life satisfaction	**Risk:** male gender, depression, aggressiveness, parental abuse, delinquent peers, poor school adjustment. **Protective:** higher parental education. **Note:** positive peer adjustment linked to higher risk	Good quality; nationally representative; appropriate survival modeling
6	Bae (2020) [38]	South Korea	Longitudinal survey; latent growth modeling; *N* = 663	ACEs, school disengagement, dropout reasons, and delinquency	**Risk:** ACEs, school disengagement, and academic dropout reasons. **Mediation:** school disengagement mediates ACEs–delinquency. **Note:** risk effects attenuate over time	High quality; robust LGM; diverse recruitment; self-report limitations
7	Wilkinson et al. (2019) [39]	United States	Longitudinal growth-curve study (ages 13–30); *N* = 10,613	Child maltreatment, offending frequency, parental relationships, school connectedness, neighborhood efficacy	**Protective:** school connectedness, high-quality parental relationships, neighborhood collective efficacy (lower levels & slopes of offending). **Note:** effects are often stronger and longer-lasting for maltreated youth	High quality; nationally representative; robust mixed-effects modeling
8	Schroeder & Mowen (2014) [40]	United States	Longitudinal study (NLSY97; ages 12–	Parenting style, maternal attachment, delinquency	**Risk:** shifts away from authoritative parenting (↓responsiveness/demandingness) linked to higher delinquency.	High quality; nationally representative; robust longitudin

No	Author & Year	Country	Design & Sample (N)	Key Measures	Key Findings (Risk/Protective)	Overall Quality
			16); *N* = 4,389		**Protective:** stable authoritative parenting and high responsiveness; effects partly mediated by maternal attachment	al analyses with mediation
9	Lee et al. (2018) [41]	South Korea	Longitudinal LGM (3 waves); *N* = 477	Maltreatment, school attachment, delinquency	**Risk:** maltreatment (higher initial levels & faster growth of delinquency). **Protective:** school attachment buffers delinquency *only* among maltreated youth; declining attachment increases risk	Good quality; longitudinal modeling; nationally based sample; limitations include self-report and modest reliability
10	Lenzi et al. (2015) [42]	United States	Cross-sectional HLM; *N* = 26,232 students (grades 7, 9, 11)	Gang membership, empathy, parental support, peer deviance, school safety	**Risk:** deviant peers, perceived school unsafety (individual & school level). **Protective:** empathy, parental support, female gender, academic achievement; empathy buffers peer deviance	High quality; large clustered sample; appropriate multilevel modeling
11	Parks et al. (2020) [43]	India (Mumbai), Australia (Victoria), USA (Washington)	Cross-national cross-sectional HLM; *N* = 7,387	Delinquency, peer delinquency, sensation seeking, family management, community disorganization	**Risk:** peer delinquency, sensation seeking, poor family management (cross-nationally consistent); community disorganization (site-specific). **Note:** delinquency clustered at school level	High quality; representative samples; robust Poisson HLM; cross-national design
12	Chen et al. (2016) [44]	United States	Cross-sectional	Community violence	**Risk:** community violence exposure. **Protective:** future	Good quality; large

No	Author & Year	Country	Design & Sample (N)	Key Measures	Key Findings (Risk/Protective)	Overall Quality
			survey; *N* = 2,980 (grades 6–8)	exposure, delinquency, future expectations, family warmth, school attachment	expectations (strongest; buffers violence effects), family warmth, school attachment, neighborhood cohesion (direct effects)	diverse sample; tested moderation effects
13	Manzoni & Schwarzenegger (2019) [45]	26 countries participating in the International Self-Report Delinquency Study 3 (ISRD3)	Cross-national comparative study; grades 7–9	Parental maltreatment, violent delinquency, peers, self-control, family/school bonds, moral values	**Risk:** parental maltreatment (direct effect). **Mediators/Protective:** delinquent peers, self-control, family bonds (strongest); school bonds & moral values (weaker). **Note:** effects vary widely across countries	High quality; large multi-country dataset; robust mediation analyses
14	Vrselja et al. (2018) [46]	Croatia	Cross-sectional survey with serial mediation; *N* = 528 (ages 15–17)	Family disadvantage, parental monitoring, deviant peers, delinquency	**Risk:** ecological family disadvantage (direct effect on males only). **Note:** no significant serial mediation via parental monitoring and deviant peers; gender-specific effects	Good quality; gender-stratified analyses; appropriate mediation modeling
15	Galinari et al. (2019) [47]	Brazil	Case–control study; *N* = 529 males (ages 16–18)	SES, substance use, school performance, impulsivity, parental supervision, family investment	**Risk:** low SES, marijuana use (strongest), poor school performance, impulsivity, weak parental supervision. **Protective:** family investment (only factor remaining protective)	Good quality; adjusted logistic models; context-specific; male-only sample

Table 2. Thematic Synthesis of Risk and Protective Factors

Main Theme	Sub-Themes	Included Studies (Author, Year)	Key Findings & Direction	Demographic/Structural Context (Gender/Race/SES)
Family Environment	Maltreatment & Adverse Childhood Experiences (ACEs)	Bae (2020); Barnert et al. (2021); Fagan et al. (2024); Lee et al. (2018); Manzoni & Schwarzenegger (2019); Wilkinson et al. (2019); Yun (2021).	**Risk:** Childhood maltreatment and ACEs are among the strongest predictors of delinquency, offending, and incarceration. Maltreatment increases incarceration risk (AOR ≈ 1.49–1.75) and is associated with steeper delinquency trajectories across adolescence.	Effects are stronger for girls and youth from low-SES contexts; significant racial/ethnic heterogeneity observed (stronger among African American and White youth).
	Positive Parenting & Family Processes	Chen et al. (2016); Fagan et al. (2024); Manzoni & Schwarzenegger (2019); McNaughton Reyes et al. (2020); Parks et al. (2018); Schroeder & Mowen (2014); Wilkinson et al. (2019); Xiong et al. (2020).	**Protective:** Parental monitoring, authoritative parenting, and high-quality parent–child relationships consistently reduce delinquency risk and slow offending trajectories. Effects operate partly through improved self-control, attachment, and reduced delinquent peer affiliation.	Protective effects are robust across gender and race/ethnicity; strongest during adolescence and among maltreated youth; and attenuate into early adulthood.
	Parental Incarceration & Family Structure	Barnert et al. (2021); Fagan et al. (2024)	**Risk:** Parental incarceration, family instability, step-parent households, and biological father absence significantly increase the risk of delinquency and justice involvement (AOR ≈ 1.52–2.00).	Risks are amplified in low-SES and minority contexts; higher parental education shows consistent protective effects.
	Parental Psychosocial & Socioeconomic Risk	Fagan et al. (2024); Galinari et al. (2019); Vrselja et al.	**Risk:** Parental mental health problems, substance use, unemployment, and low education contribute to cumulative family risk,	Effects are strongest in economically disadvantaged households; parental education

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		(2018); Yun (2021).	partly mediated by lower child self-control.	is inversely associated with delinquency risk.
School & Peers	Peer Influence & Peer Adjustment	Galinari et al. (2019); Lenzi et al. (2015); Manzoni & Schwarzenegger (2019); McNaughton Reyes et al. (2020); Parks et al. (2018); Vrselja et al. (2018); Xiong et al. (2020); Yun (2021).	**Risk:** Association with delinquent peers is among the strongest predictors of delinquency, gang involvement, and substance-related offending. **Protective:** Positive peer adjustment and empathy attenuate peer-related risk.	Effects are stronger among males and youth in high-crime or structurally disadvantaged contexts; consistent across U.S., Korean, and Chinese samples.
	School Engagement, Attachment, and Climate	Bae (2020); Chen et al. (2016); Lee et al. (2018); Lenzi et al. (2015); Manzoni & Schwarzenegger (2019); Parks et al. (2018); Wilkinson et al. (2019); Yun (2021).	**Risk:** School disengagement and unsafe school environments increase delinquency risk. **Protective:** School connectedness and attachment substantially reduce delinquency, particularly among maltreated youth, with effects extending into early adulthood.	Stronger protective effects during adolescence; gender differences are context-specific; school-level SES effects are inconsistent across studies.
Individual Factors	Self-Regulation & Behavioral Control	Barnert et al. (2021); Fagan et al. (2024); Galinari et al. (2019); Manzoni & Schwarzenegger (2019); McNaughton Reyes et al. (2020).	**Risk:** Low self-control, disruptive behavior, and weak deviance intolerance are strong predictors of delinquency and incarceration. **Protective:** Higher self-control in childhood buffers later delinquency and mediates family risk effects.	Effects are stronger among males; robust across racial/ethnic groups, with notable exceptions among Latino youth for disruptive behavior.
	Emotional & Mental	McNaughton Reyes et al.	**Risk:** Negative emotionality and mental	Observed across U.S., Korean, and

Main Theme	Sub-Themes	Included Studies (Author, Year)	Key Findings & Direction	Demographic/Structural Context (Gender/Race/SES)
	Health Vulnerabilities	(2020); Xiong et al. (2020); Yun (2021).	health problems (depression, anxiety, hostility) are consistently associated with higher delinquency and partially mediate parenting effects.	Chinese samples; gender differences are modest and context-dependent.
	Substance Use & Risk Behaviors	Barnert et al. (2021); Galinari et al. (2019); McNaughton Reyes et al. (2020); Parks et al. (2018).	**Risk:** Alcohol, cigarette, and marijuana use predict earlier onset and higher frequency of justice involvement; peer substance use further amplifies risk.	Effects consistent across gender and race/ethnicity in U.S. longitudinal samples.
	Cognitive–Motivational Assets	Barnert et al. (2021); Chen et al. (2016); Lenzi et al. (2015); Manzoni & Schwarzenegger (2019); McNaughton Reyes et al. (2020).	**Protective:** Higher academic achievement, educational aspirations, empathy, and future orientation reduce delinquency and gang involvement; empathy buffers peer deviance effects.	Protective effects are stable across racial groups and socioeconomic contexts.
	Early Life & Cumulative Risk	Bae (2020); Fagan et al. (2024)	**Risk:** ACEs and early cumulative child risk increase delinquency trajectories, with some attenuation over time; effects partly mediated by school disengagement and self-control.	Stronger effects in low-SES contexts; boys show steeper delinquency growth.
	Social Withdrawal (Context-Specific)	Yun (2021)	**Protective (Contextual):** Social withdrawal is associated with lower delinquency, possibly by reducing exposure to delinquent peers.	Observed in Korean adolescents; likely culturally contingent.
Community /Neighborhood	Community Structural Conditions	Chen et al. (2016); Parks et al. (2018); Schroeder & Mowen (2014);	**Protective:** Neighborhood collective efficacy buffers delinquency by lowering initial levels and slowing offending trajectories, with effects more durable among maltreated youth.	Evidence drawn primarily from U.S. nationally representative samples. Protective effects appear consistent across gender,

Main Theme	Sub-Themes	Included Studies (Author, Year)	Key Findings & Direction	Demographic/Structural Context (Gender/Race/SES)
		Wilkinson et al. (2019).	**Risk:** Neighborhood disadvantage and high-crime contexts are associated with elevated delinquency risk, though often examined as control variables rather than focal mechanisms.	race/ethnicity, and SES. Domain remains underexamined relative to family and peer contexts.
Developmental Trajectories	Dynamic Developmental Pathways	Manzoni & Schwarzenegger (2019); McNaughton Reyes et al. (2020); Parks et al. (2018); Schroeder & Mowen (2014); Vrselja et al. (2018).	**Risk/Protective:** Parenting styles and delinquency follow dynamic, heterogeneous pathways across adolescence. Transitions toward authoritative parenting reduce offending, whereas shifts away increase risk, partly via attachment. Distinct delinquency trajectories (e.g., low-risk, peer/dating aggressors, multidomain high-risk) show different risk/protective profiles.	Males are more likely in high-risk trajectories; females are more represented in peer/dating aggressor pathways. Racial differences were observed across trajectory membership.
	Timing & Sensitive Periods	Bae (2020); Galinari et al. (2019); Lee et al. (2018); Yun (2021).	**Risk/Protective:** Early adolescence represents a peak risk window; effects of ACEs and school disengagement attenuate over time. Timing of maltreatment conditions, in which protective factors are effective (e.g., baseline vs. later maltreatment).	Evidence from Korean cohorts: males show higher hazard probabilities. Developmental timing shapes intervention effectiveness.

The synthesis of findings from this systematic literature review reinforces the view that juvenile delinquency is a multifactorial and cross-system phenomenon shaped by dynamic interactions among individual, family, peer, school, and broader social contexts. Despite substantial heterogeneity in study design, sample characteristics, cultural settings, and analytic approaches, family and peer factors consistently emerged as the most robust predictors of delinquent behavior across contexts [33], [35], [36], [39], [41]. This

convergence corroborates prior meta-analytic evidence reported by Basto-Pereira and Farrington [14] and Aazami et al. [12], which similarly identified family conflict and maltreatment as core determinants of offending persistence. Extending these earlier reviews, the present synthesis demonstrates that family dysfunction, including maltreatment [34], [39], [41], instability in family structure [34], [35], and parental psychosocial risk [35], [37], remains a salient risk factor across both Western and non-Western samples and across longitudinal and cross-sectional designs. Likewise, affiliation with deviant peer groups showed a strong and recurrent association with increased delinquent involvement [33], [36], [37], [42], a pattern that mirrors the cross-national trends in peer-supported aggression observed by Lansford et al. [48]. Importantly, several longitudinal studies indicated that peer influence primarily operated as an amplification mechanism, intensifying pre-existing family-related vulnerabilities rather than functioning as an independent causal factor [36], [40], thereby highlighting the developmental primacy of the family context in shaping adolescents' exposure to peer-related risks.

In addition, this review demonstrates that protective factors are not merely the inverse of risk factors, but operate through distinct buffering, moderating, and compensatory mechanisms that support developmental resilience [35], [39], [49]. This observation aligns with the cumulative risk and promotive factor models described by Van der Laan et al. [7], confirming that delinquency results from a dynamic imbalance between risk and protection rather than a single deficit. Across the included studies, positive parenting practices [33], [36], [40], high-quality parent–child relationships [40], school connectedness [39], [41], self-regulation [33], [35], and psychosocial assets such as empathy [42] and academic aspirations [33] consistently attenuated the impact of risk exposure, including among adolescents facing structural vulnerabilities such as poverty and maltreatment. Notably, longitudinal studies were more likely to identify buffering and moderating effects, particularly for parenting quality and school connectedness, whereas cross-sectional designs more often captured compensatory effects operating independently of risk exposure. These findings further underscore heterogeneity in developmental trajectories and timing effects, whereby variations

in the onset, intensity, and persistence of delinquent behavior are shaped by developmental stage. Early to mid-adolescence emerged as a particularly sensitive period for intervention, likely reflecting the convergence of heightened socio-emotional reactivity, increasing peer salience, and still-developing self-regulatory capacities during this developmental window [37], [38].

Within a socioecological framework, this review reinforces the family as the most fundamental determinant domain in the development of juvenile delinquency, particularly when compared with school and community contexts whose effects were more contingent and context-dependent. Exposure to chronic family stressors, such as child maltreatment, adverse childhood experiences (ACEs), and parental incarceration, functions as a cumulative risk that disrupts early developmental regulation and increases the likelihood of delinquent behavior through pathways involving emotional dysregulation and deficits in self-control [34], [35], [38], [45]. This aligns with findings from Gil-Fenoy et al. [15], who established that deficits in executive functions are central to the manifestation of antisocial behavior in young offenders. Longitudinal evidence indicates that child maltreatment and parental incarceration significantly increase the odds of detention (by up to twofold) and accelerate delinquent developmental trajectories. [34], effects that are rarely observed with comparable magnitude for school- or neighborhood-level risks. These family-related risks were frequently mediated by negative peer affiliations and exhibited substantial variation by race and cultural context across 26 countries [45], suggesting that while the direction of effects is broadly consistent, their magnitude is shaped by structural inequality and sociocultural norms. Moreover, family risks were shown to operate synergistically with structural disadvantages, including poverty, low socioeconomic status, and family instability, thereby creating persistent intergenerational transmission of risk from childhood into adolescence, particularly among males and minority groups experiencing compounded deprivation [46].

In contrast, this review demonstrates that the family functions as an active and dynamic protective mechanism, rather than merely the absence of risk, wherein positive parenting practices, including consistent monitoring, an authoritative parenting style, and warm parent–child relationships, were shown to reduce the odds of

juvenile delinquency by up to 35% and to attenuate the impact of structural risks by strengthening emotion regulation and reducing affiliation with deviant peers [33], [40]. This magnitude of effect aligns with the meta-analytic findings of Gubbels et al. [18], confirming that family factors are not just correlates but central active ingredients in prevention. Evidence from longitudinal studies indicates that the stability of authoritative parenting is particularly critical; transitions away from this style during adolescence were associated with significant increases in offending behavior, effects that were partially mediated by declines in maternal attachment [36]. Importantly, strong family investment continued to operate as an effective buffer against economic deprivation in developing countries and as a broadly generalizable protective mechanism across cultural contexts [35], [39], suggesting that relational processes within the family may be less culturally contingent than peer or school dynamics. Nevertheless, the magnitude and pathways of these protective effects varied by demographic characteristics, with family violence exerting stronger adverse effects among adolescent girls and racially differentiated risk profiles reflecting unequal exposure to structural disadvantage and justice system involvement. Consequently, family-based interventions represent a strategic leverage point that not only disrupts intergenerational risk transmission but also generates multiplier effects across emotional, behavioral, and social developmental domains.

Peer influence emerged as a key mechanism that accelerates and reinforces trajectories of juvenile delinquency. Across diverse cultural contexts and study designs, affiliation with delinquent peers was consistently identified as the most potent risk amplifier, increasing the likelihood of delinquent involvement by nearly twofold and operating primarily through social learning processes [37], [42], [45], [50]. This finding mirrors the meta-analytic conclusions of Kim et al. [19], who similarly identified social learning as the primary explanatory mechanism for delinquent behavior, although their focus extended to the digital realm. Importantly, peer influence rarely functioned in isolation; instead, it frequently mediated and magnified family-related risks, whereby weak or inconsistent parenting practices facilitated adolescents' integration into deviant peer networks. This pattern was

particularly evident in longitudinal studies, suggesting that peer processes often represent downstream mechanisms through which earlier family vulnerabilities are translated into behavioral outcomes.

Nonetheless, certain socio-emotional competencies, most notably empathy, demonstrated significant moderating capacity in attenuating the harmful effects of delinquent peer affiliation [45]. Indicating that individual assets can partially disrupt peer-driven risk pathways. Within this broader context, schools emerged as a dual ecological arena that may function either as a protective buffer or as a source of risk. This duality reflects the complex role of the microsystem described in Bronfenbrenner's ecological framework [8], confirming that the impact of an environment depends on the quality of interactions rather than merely its presence. Strong school connectedness, positive teacher–student relationships, and a safe school climate were consistently associated with reduced delinquency trajectories, particularly among adolescents with histories of maltreatment, through compensatory mechanisms whose effects were most evident in longitudinal studies extending into early adulthood [41]. Conversely, school disengagement, academic failure, and unsafe learning environments were found to exacerbate delinquency risk [38], likely by increasing unsupervised peer interaction and reinforcing deviant social norms. Taken together, these findings underscore the importance of school-based interventions that not only strengthen institutional connectedness but also actively disrupt negative peer influence by fostering social–emotional competencies and creating inclusive, supportive learning environments.

At the individual level, self-control, emotion regulation, and mental health emerged primarily as central mediating mechanisms through which family and broader environmental risks are translated into the behavioral manifestations of juvenile delinquency, rather than as isolated causal factors. Across longitudinal studies, deficits in self-control and mental health problems consistently mediated the effects of parental maltreatment and cumulative childhood risk, while simultaneously heightening adolescents' susceptibility to deviant peer influence and aggressive behavior [33], [35], [45]. Poor self-regulation and elevated negative emotionality were associated with substantially

higher probabilities of involvement in high-risk developmental trajectories, by as much as 83%, and further amplified vulnerability to peer-driven delinquency and aggression [33]. Importantly, the behavioral expression of these individual vulnerabilities exhibited race-specific variation, with stronger associations observed among African American adolescents (AOR = 2.82) and White adolescents (AOR = 2.15) relative to Latino youth [34]. These specific disparities exemplify the "Western-centric" context noted by Bistamam et al. [20]; rather than indicating inherent behavioral differences, these patterns likely reflect unequal exposure to cumulative structural stressors and differential patterns of justice system involvement unique to the study's setting. This underscores the need to interpret individual-level effects within their broader socio-structural context, as risk markers identified in Western samples may not fully generalize to non-Western populations.

Conversely, psychological assets such as academic aspirations, empathy, and intolerance toward deviance functioned as robust protective buffers that reduced adolescents' susceptibility to delinquency across multiple risk contexts. This reinforces the theoretical perspective discussed by Han and Park [9], suggesting that cognitive assets, such as long-term thinking and moral evaluation, serve as critical mechanisms that inhibit the translation of antisocial potential into actual behavior. Specifically, empathy consistently moderated the influence of negative peer affiliation by weakening social learning processes that normalize deviant behavior [49], whereas high future expectations attenuated the effects of exposure to community violence by reinforcing goal-oriented self-regulation and adaptive coping strategies [33], [44]. Academic achievement emerged as one of the most stable protective factors, consistently reducing the risk of detention and gang affiliation across racial groups [42], suggesting that cognitive–motivational assets may operate as relatively universal protective mechanisms compared to more context-dependent socio-emotional skills. Collectively, these findings challenge narratives that frame juvenile delinquency as an individual moral failure and instead support its conceptualization as a manifestation of disrupted developmental regulatory systems, in which psychological vulnerabilities and strengths dynamically interact with structural inequalities and gendered risk patterns [35].

At more distal ecological levels, community contexts, although comparatively underexamined in the literature [39], [44], [50], were shown to play a meaningful, albeit more context-dependent, role in shaping trajectories of juvenile delinquency. This scarcity of focal research confirms the observation by Trinidad et al. [2], who noted that environmental and situational factors are frequently treated as secondary background variables rather than primary drivers in delinquency research. Despite this limitation, longitudinal evidence suggests that neighborhood collective efficacy, encompassing social cohesion, trust, and informal social control, functions primarily as a promotive factor by reducing both the initial levels and the developmental progression of offending behavior, particularly among adolescents exposed to early risks such as childhood maltreatment. Under these conditions, supportive communities may operate as a secondary buffer when family systems are compromised, rather than as primary protective mechanisms [39]. In contrast, structural community disadvantage, including concentrated poverty, social disorganization, and exposure to violence, was consistently associated with elevated delinquency risk by normalizing deviant behavior and constraining access to protective resources. However, the magnitude and significance of these community-level effects varied substantially across studies. We attribute this variation to inconsistency in measurement strategies, specifically the reliance on subjective versus objective neighborhood indicators and the frequent treatment of community variables as controls rather than focal mechanisms. These findings indicate that community influences are highly context-dependent and interact dynamically with school processes, peer selection mechanisms, and gendered developmental pathways [44], [46], [50].

Consistent with the conceptual framework established by Van der Laan et al. [7], the findings further highlight an important distinction between promotive effects, such as neighborhood cohesion that is directly and negatively associated with delinquency, and protective buffering effects, which do not consistently moderate the impact of acute risk exposures such as community violence. This distinction suggests that while community resources may lower baseline levels of delinquency, they are often insufficient to offset the behavioral consequences of

chronic or severe violence exposure, thereby underscoring the need for interventions that directly target violence reduction itself. Importantly, the limited number of studies explicitly examining community-level mechanisms, together with methodological constraints, including the scarcity of longitudinal multilevel designs, limited use of objective neighborhood indicators, and incomplete testing of causal chains, should not be interpreted as evidence of the domain's limited theoretical relevance. Rather, these gaps reflect a longstanding literature bias toward proximal determinants, such as family and individual factors, which are more readily measured and modeled [39], [44], [50]. This echoes the conclusion of Pyle et al. [3], who noted that despite the popularity of ecological models, empirical research often fails to integrate broader systemic factors. From a socioecological perspective, communities represent critical arenas in which cross-system risks originating from family, school, and individual domains accumulate or are mitigated over time. Accordingly, the paucity of rigorous community-level evidence constitutes a pressing research gap, with important implications for prevention. Effective juvenile delinquency prevention, therefore, requires structurally oriented, community-based approaches, such as strengthening collective efficacy, reducing poverty and violence, and expanding access to prosocial opportunities, that complement, rather than replace, individual- and family-level interventions.

From a developmental perspective, the synthesized findings indicate that juvenile delinquency is inherently heterogeneous and strongly shaped by timing effects, with no single universal trajectory applicable across individuals. Evidence from longitudinal, trajectory-based studies consistently revealed substantial variation in the onset, intensity, and persistence of delinquent behavior, patterns that are often obscured in cross-sectional or static risk models. Early to mid-adolescence emerged as a particularly sensitive developmental period during which biological maturation, cognitive reorganization, and expanding social networks converge to heighten vulnerability to risk exposure while simultaneously increasing responsiveness to protective influences [37], [41]. This empirically substantiates the developmental immaturity model described by Steinberg and Scott [27], which posits that the temporal gap between socio-emotional arousal and cognitive control systems drives adolescent risk-taking.

Early risk exposure, such as maltreatment or adverse childhood experiences (ACEs), was shown to accelerate delinquency trajectories and produce stronger initial effects; however, several studies also documented partial attenuation of these effects over time, indicating the coexistence of sensitive periods and enduring developmental plasticity [35], [45]. Importantly, the effectiveness of protective factors, including school connectedness, parenting quality, and parent–child closeness, was highly contingent on the timing of risk exposure, with dynamic shifts in protection becoming increasingly influential in cases of later-emerging or reactivated risk [39], [41]. Collectively, these findings help reconcile previously mixed results in the literature by demonstrating that inconsistencies often reflect differences in developmental timing and analytic approach rather than substantive contradictions.

The integrated findings of this systematic literature review underscore the limitations of deficit-oriented approaches that focus exclusively on identifying and reducing risk factors, and instead provide strong empirical support for a shift toward resilience-based models that conceptualize risk and protection as distinct yet dynamically interacting developmental processes. Synthesizing evidence across longitudinal, trajectory-based, and cross-national designs, this review demonstrates that commonly cited risk factors, such as low self-control, maltreatment, and structural disadvantage, are not deterministic. Substantial heterogeneity in outcomes is observed among adolescents exposed to both high and low levels of risk, indicating that risk exposure alone is insufficient to predict delinquency trajectories [33]. This empirical variation validates the developmental perspective of Loeber and Farrington [10], confirming that offending pathways are malleable and subject to "turning points" rather than being fixed destinies. This synthesis helps reconcile previously mixed findings in the literature by highlighting the importance of differentiating promotive factors, which lower baseline levels of delinquency across the adolescent population, from protective factors, which conditionally moderate the impact of specific risk exposures depending on individuals' risk histories and the timing of exposure.

Within this integrative framework, protective factors were found to operate through three primary mechanisms: (1) as moderators that attenuate the association between risk exposure

and delinquency (e.g., empathy, school connectedness, future expectations, and collective efficacy) [35], [39], [42], [44]; (2) as mediators that explain the psychological and relational pathways through which risk is translated into behavior (e.g., via self-regulation, mental health, family bonding, and peer selection processes) [35], [36], [38], [40]; and (3) as compensatory factors that directly provide adaptive alternatives to adolescents' developmental needs for affiliation, status, and self-control (e.g., academic achievement, intolerance toward deviance, and parental monitoring) [33], [34], [49]. Theoretically, these mechanisms illustrate the operational reality of Bronfenbrenner's [8] ecological framework, demonstrating that resilience emerges not from the absence of risk, but from the dynamic interplay between individual vulnerability and protective environmental interactions.

Ultimately, the patterns identified in this systematic literature review substantiate core principles of developmental psychopathology, particularly multifinality, equifinality, and developmental cascades. Beyond merely confirming these theoretical perspectives, the present synthesis advances existing frameworks by demonstrating how risk and protective factors dynamically interact across time and contexts to shape heterogeneous delinquency trajectories, rather than exerting isolated or deterministic effects. These findings reinforce a dual-focus prevention science paradigm that aligns with recent recommendations by Aazami et al. [12] and Gubbels et al. [18], emphasizing the integration of developmental risk reduction with the active cultivation of protective and promotive assets. From this perspective, juvenile delinquency is most accurately understood not as an isolated behavioral outcome, but as an indicator of disrupted developmental regulation across interconnected systems. Accordingly, effective prevention strategies must be multilevel, developmentally timed, and contextually grounded, integrating universal, selective, and indicated interventions that simultaneously reduce exposure to risk and strengthen resilience capacities at the individual, family, school, and community levels to generate sustainable and equitable developmental outcomes.

4. CONCLUSION

This Systematic Literature Review (SLR) demonstrates that juvenile delinquency is a complex developmental phenomenon that is multifactorial in nature and shaped by dynamic interactions across ecological systems. The findings indicate that no single determinant is sufficient to explain juvenile delinquency; rather, delinquent behavior emerges from the accumulation and interdependence of individual, family, peer, school, and community factors over the course of adolescent development. Family and peer domains consistently emerged as the most robust and universal determinants across cultural contexts, while schools and communities function as arenas that may either exacerbate risk or serve protective roles, depending on the quality of environmental conditions and levels of connectedness.

The review further confirms that protective factors are not merely the inverse of risk factors, but operate through distinct mechanisms as moderators, mediators, and compensatory resources. Positive parenting practices, school connectedness, self-regulation, empathy, and academic aspirations were shown to attenuate the effects of risk exposure, including among adolescents experiencing early structural vulnerabilities. Moreover, evidence of heterogeneous developmental trajectories and timing effects underscores that juvenile delinquency does not follow a uniform pattern, with early to mid-adolescence representing a particularly sensitive period for effective intervention.

Conceptually, this SLR provides strong support for socioecological frameworks and the developmental psychopathology perspective, while also advocating a shift from deficit-based models toward resilience-oriented approaches in understanding juvenile delinquency. Effective prevention requires multilevel, developmentally informed, and strength-based strategies that integrate risk reduction with the enhancement of developmental assets. By synthesizing global evidence published between 2000 and 2024, this study offers a more comprehensive empirical foundation for the development of adaptive, contextually responsive, and culturally sustainable interventions and policies aimed at preventing juvenile delinquency.

Nevertheless, these conclusions should be interpreted with caution. This review synthesized a relatively limited number of

empirical studies, reflecting both stringent inclusion criteria and substantial heterogeneity in study designs, contexts, and outcome measures. The reliance on a single bibliographic database, the absence of a formal risk-of-bias assessment, and the predominance of observational study designs constrain the certainty and generalizability of the evidence. Accordingly, the findings should be viewed as indicative patterns rather than definitive causal conclusions. Future research would benefit from longitudinal, mixed-methods, and cross-cultural designs, particularly in underrepresented non-Western contexts such as Indonesia, to strengthen confidence in the identified mechanisms and to inform prevention strategies that are both empirically grounded and contextually relevant.

4.1 Recommendations

Based on the findings of this SLR, juvenile delinquency prevention should adopt a comprehensive, multilevel, and developmentally informed approach that prioritizes families and schools as core intervention contexts. Effective prevention requires the integration of family-based strategies that strengthen positive parenting, parent–child attachment, and consistent monitoring with school-based interventions that promote academic engagement, safe school climates, and adolescents' social–emotional competencies, particularly during early to mid-adolescence as a sensitive developmental period. Public policies should further support early identification of adverse childhood experiences and emerging mental health problems, accompanied by timely and accessible services through coordinated cross-sector collaboration among education, health, social services, and juvenile justice systems. To address gaps in the existing evidence base, future prevention efforts should be informed by longitudinal and multilevel research designs, with greater investment in community-level interventions that enhance collective efficacy, reduce structural disadvantage, and expand prosocial opportunities. Finally, given the predominance of Western-centric evidence, culturally adaptive implementation and empirical testing in non-Western and low- to middle-income contexts are essential to ensure the effectiveness, sustainability, and equity of global juvenile delinquency prevention initiatives.

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