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Systematic review: Impact of juvenile incarceration

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ABSTRACT

Background: The juvenile justice system was established with the intent of rehabilitation (Fagan & Zimring, 2000). However, despite these intentions, the reality of juvenile incarceration is that it often fails in this rehabilitative process, with numerous studies highlighting the adverse outcomes associated with confinement (Lambie & Randell, 2013; Gatti et al., 2009).
Objective: The aim of this systematic review was to consolidate current knowledge and provide a comprehensive understanding of how juvenile incarceration affects various domains of life including mental and physical health, adaptive functioning, educational attainment, employment, and recidivism.
Participants: Many of the studies reviewed used samples from larger longitudinal projects (1970s-2000s) and were later filtered to focus on individuals incarcerated during adolescence. Additionally, some studies included a broader range of participants with any justice system contact, such as arrests, serving as a useful comparison group to those incarcerated.
Method: The Preferred Reporting Items for Systematic Reviews and Meta-analyses guidelines were followed to conduct our review (PRISMA; Moher et al., 2009). A modified checklist was used to outline the inclusion and exclusion criteria for individual studies.
Results: Two electronic databases were searched, including PsycINFO and PubMed/MEDLINE. Thirty-four full-text articles were reviewed for quality, and sixteen were excluded due to either the (a) sample population, (b) lack of statistical outcomes, or (c) omission of the association between juvenile incarceration and outcomes. Guided by methodological quality criteria, eighteen studies were included in the review.
Conclusions: Juvenile incarceration and subsequent interactions that occur within correctional settings, create a cascading effect that shape long-term trajectories often marked by diminished opportunities for positive development and an increase in adverse outcomes. The findings of this review underscore the systemic challenges and shortcomings within the juvenile justice system.

1. Introduction

In the United States, the scope and effectiveness of juvenile incarceration have long been subjects of debate, with mounting evidence challenging the assumption that it is an optimal solution for addressing youth delinquency. While youth incarceration is commonly seen as essential for public safety, research suggests it is neither cost-effective nor beneficial in terms of outcomes (Lambie & Randell, 2013). Unfortunately, these findings seldom influence policy decisions, which is evident from the significant number of juvenile offenders within the justice system. The prevalence of juvenile offenders in the U.S. has declined over the past few decades, yet numbers remain substantial. The 2022 National Report by the OJJDP highlights that the juvenile arrest rate dropped by 58% from 1999 to 2019 (Puzzanchera et al., 2022). Despite this decrease, the justice system still processed approximately 723,000 cases involving youth in 2019. In fact, on a typical day in 2020, approximately 36,000 youth were held in juvenile facilities across the country (Rovner, 2023; Youth.gov, 2023). Furthermore, statistics on juvenile incarceration indicate a significant disparity between boys and girls, as boys have been found to be far more likely to be incarcerated than girls (Puzzanchera et al., 2022).

When examining the number of juveniles within the justice system, it is crucial to consider the broader objectives of juvenile incarceration. Juvenile incarceration serves several specific goals aimed at addressing the needs of young offenders within the context of the juvenile justice system. Firstly, it seeks to provide a structured environment that ensures public safety by temporarily removing juveniles who pose a risk to themselves or others (Redding, 2003). Secondly, incarceration aims to

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hold juveniles accountable for their actions, promoting a sense of responsibility and consequences for delinquent behavior (Office of Juvenile Justice and Delinquency Prevention (OJJDP, 2021)). Ultimately, the overarching goal of juvenile incarceration is to facilitate the successful reintegration of juveniles into society as law-abiding and productive citizens, equipped with the skills and support needed to avoid future criminal behavior (Schubert et al., 2011).

Although the juvenile justice system was established with a greater emphasis on rehabilitation rather than punishment, there is a significant discrepancy between this intention and the reality of juvenile incarceration (Fagan & Zimring, 2000). This discrepancy is important to note as numerous studies highlight the adverse outcomes associated with this practice (Lambie & Randell, 2013; Gatti et al., 2009). Researchers highlighted the profound impact of confinement during adolescence, a pivotal stage for psychological and social development (Cauffman & Steinberg, 2012). The restrictive environment of juvenile detention centers can exacerbate existing issues or introduce new challenges, such as heightened mental health problems and disrupted education (Ramchand et al., 2009; Abram et al., 2017). These disruptions can hinder the acquisition of crucial life skills and educational milestones, potentially perpetuating cycles of poverty and involvement in the justice system (Kirk & Sampson, 2013). From a life course theory perspective, the myriads of consequences of juvenile incarceration produce a cascading effect, influencing various aspects of an individual's development and future opportunities (Sampson & Laub, 1997). Thus, while juvenile incarceration aims to redirect young offenders towards more constructive paths in society, its unintended negative consequences are vast, making it a critical area of further exploration.

Despite the predominant focus on singular factors, there remains a pressing need for a comprehensive synthesis of existing studies to better grasp the multifaceted impact of juvenile incarceration. The aim of this systematic review was to consolidate current knowledge and provide a holistic understanding of how juvenile incarceration affects various domains of functioning. More specifically, this review integrates the current literature related to how incarceration during adolescence influences mental and physical health outcomes, adaptive functioning, educational attainment, employment, and recidivism. Through this synthesis, we may improve our understanding of how juvenile incarceration contributes to a cascade of effects that alter the life course.

2. Method

A scoping search was conducted to identify existing reviews or meta-analyses on the impact of juvenile incarceration. The scoping search revealed that no such reviews currently exist. Next, a specific protocol was developed and registered with PROSPERO (CRD42024544445) to avoid duplication and ambiguity. Following registration with PROSPERO, PsycINFO and PubMed/MEDLINE databases were searched. The Preferred Reporting Items for Systematic Reviews and Meta-analyses guidelines were followed to conduct our review (PRISMA; Moher et al., 2009). Search terms and operators for the database searches included a combination of the following: impact or influence, effect or consequence, result or outcome, ramifications or repercussions, incarceration or confinement or detention, imprisonment or captivity or custody, juvenile offenders or juvenile delinquents or delinquent youth, and justice involved youth or youthful offenders or criminal and youth.

References yielded from the initial searches were eliminated if they were duplicates or deemed irrelevant based on title or abstract. The remaining references were excluded after an in-depth quality evaluation of the full-text articles. A modified checklist was used to outline the inclusion and exclusion criteria for individual studies. The modified checklist was adapted from a checklist utilized in Forman-Dolan et al.'s., (2022) systematic review that was formulated from The Comparator and Outcome (PICO) model (Booth & FrySmith, 2004).

2.1. Inclusion and exclusion criteria

The inclusion criteria were based on (a) if the study assessed the impact of juvenile incarceration on at least one of the following factors including: mental health, physical health, adaptive functioning, employment, education, or recidivism, (b) if it examined the relationship between juvenile incarceration and outcomes, (c) if a sound methodological framework was present (e.g., robustness, validity, and reliability of the methodological framework used in the study) with results of the study being directly linked to the aim of the study and (d) if the outcomes related to the impact of juvenile incarceration were described.

Exclusion criteria included the following: (a) the participants in the samples were not incarcerated as juveniles or the participants were not incarcerated in a locked facility (i.e., jail, prison, detention center). Per the U.S. Department of Justice, a juvenile is defined as an individual who has not attained their eighteenth birthday (18 U.S.C. § 5031, 2012). Therefore, this definition guided the exclusion criteria related to sample population. Following this initial criterion, we excluded if (b) no statistical outcomes related to the impact of juvenile incarceration were described. We chose not to include qualitative data in this review to maintain a focus on statistical outcomes. This aligns with our goal of quantitatively assessing measurable effects across studies. Additional exclusion criteria included the following: (c) the type of article was non-peer reviewed, a book review, editorial, or master thesis and (d) if there was a risk of bias (i.e., selection, performance, detection, attrition or reporting bias). The inclusion and exclusion criteria utilized for appraising the quality of articles are provided in Table 1.

Table 1
Modified checklist.

Inclusion Criteria
Yes
☐ Is the study relevant to the research questions?
☐ **Area(s) of Focus** (one of the following must be checked off a 'yes') The impact of juvenile incarceration on at least one of the following factors:
☐ Mental health
☐ Physical Health
☐ Adaptive Functioning
☐ Employment
☐ Education
☐ Recidivism
☐ **Correlation** (one of the following must be checked off a 'yes')
☐ Must examine the relationship between juvenile incarceration and outcomes
☐ **Inferential Statistics** (both must be checked off as a yes)
☐ Includes a sound methodological framework (i.e., a body of methods, a set of procedures, and a discussion of results)
☐ Were the results directly linked to the aim of the study
☐ **Outcomes** (must be checked off as 'yes')
☐ Description of the impact of juvenile incarceration
Exclusion Criteria
Yes
☐ **Sample of Focus** (any of the following are grounds for exclusion)
☐ Participants in the sample were not incarcerated as a juvenile
☐ Participants in the sample were not incarcerated in a locked facility (i.e., jail, prison, detention center)
☐ **No Statistical Outcomes** (the following are grounds for exclusion)
☐ No statistical outcomes related to the impact of juvenile incarceration
☐ **Type of Article** (any of the following are grounds for exclusion)
☐ Non-peer reviewed article
☐ Book review
☐ Editorial
☐ Master Thesis
☐ **Assessing Risk of Bias** (any of the following are grounds for exclusion)
☐ Selection Bias
☐ Performance Bias
☐ Detection Bias
☐ Attrition Bias
☐ Reporting Bias

3. Results

The systematic review consisted of two electronic databases including PsycINFO and PubMed/MEDLINE. The search generated 4494 articles, and 2020 articles were identified after duplicates were removed. Thirty-four full-text articles were reviewed for quality, and sixteen were excluded due to sample population, a lack of statistical outcomes, and a lack of examining the relationship between juvenile incarceration and outcomes. Fig. 1 outlines the process for inclusion and exclusion.

3.1. Methodological quality

As previously noted, we reviewed the impact of juvenile incarceration on various domains of life. The methodological quality of 34 articles was independently assessed by two reviewers. The reviewers rated each article with either a 0 - Poor, 1 - Good, or 2 - Excellent, depending on whether inclusion or exclusion criteria were satisfied. Nine studies met all eligibility criteria and received a rating of "excellent," while nine studies received a rating of "good." Sixteen studies received a rating of "poor" due to failing to satisfy important assessment criterion including sample population and statistical outcomes. Therefore, guided by methodological quality criteria outlined in Table 2, eighteen studies were included in the review.

3.2. Characteristics of included studies

All the studies reviewed were conducted in the United States. Most of the samples used in these studies were derived from larger projects that collected longitudinal data on a diverse set of individuals anytime between the 1970's to 2000's. For the studies reviewed, the samples were later filtered to specifically examine individuals who were incarcerated during adolescence. Some studies included a broader range of participants, such as those who had any contact with the justice system (e.g., arrest), which, while not the primary focus of this review, serves as a useful comparison group to those who were incarcerated.

Some studies only included participants under the age of 18. However, most of the studies reviewed included participants that exceeded 18 years of age at recruitment. Therefore, authors relied on retrospective data to ascertain their history of juvenile incarceration. Upon confirmation of juvenile justice involvement, data was collected to analyze the long-term effects of juvenile incarceration at various time points in the individuals' lives. Additional information on the origin of sample, the final sample used in the studies reviewed, and the sociodemographic characteristics of participants are outlined in Table 3. The articles in Table 3 are categorized according to the specific domains of life they examine.

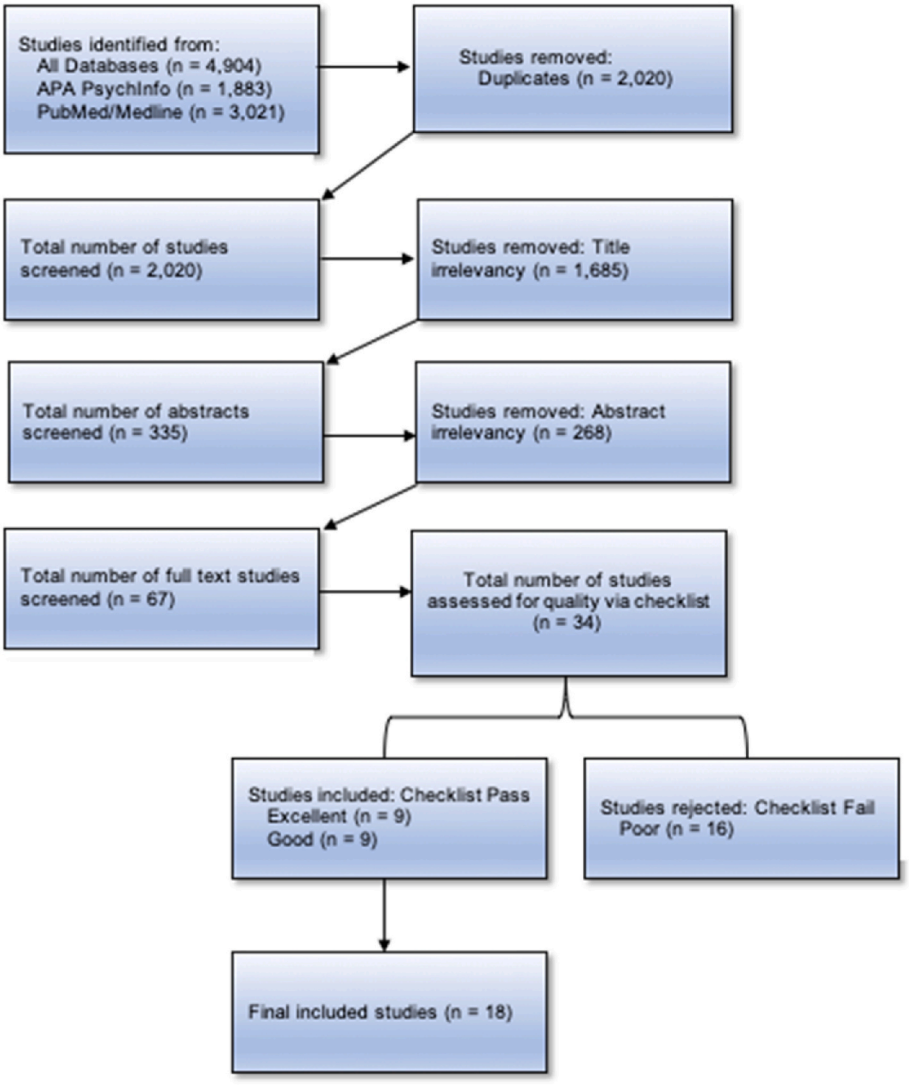

Fig. 1. PRISMA flowchart.

Table 2
Quality assessment chart.

Quality of Study	Articles Evaluated	Relevance	Correlates	Sample Population	Statistical Outcomes
Excellent	Myner et al. (1998) White et al. (2010) DeLisi et al. (2011) Gilman et al. (2015) Abram et al. (2017) Nguyen et al. (2017) Walker and Herting (2020) Powell (2022) Schweer-Collins et al. (2024)	Area of focus related to the impact of juvenile incarceration on at least one aspect of an individual's life.	Examined the relationship between juvenile incarceration and outcomes.	Samples included individuals that were incarcerated as juveniles in a locked facility.	Relevant statistical outcomes related to the impact of juvenile incarceration are discussed.
Good	Dmitrieva et al. (2012) Aalsma et al. (2016) Barnert et al. (2018)	Area of focus related to the impact of juvenile incarceration on at least one aspect of an individual's life.	Examined the relationship between juvenile incarceration and outcomes.	Samples included individuals that were incarcerated as juveniles in a locked facility, but they are not the sole focus of the study.	Relevant statistical outcomes related to the impact of juvenile incarceration are discussed.
Good	Lewis et al. (1994) Ramchand et al. (2009) Emmert, (2018) Umbach et al. (2018)	Area of focus related to the impact of juvenile incarceration on at least one aspect of an individual's life.	Examined the relationship between juvenile incarceration and outcomes.	Samples included individuals that were incarcerated as juveniles in a locked facility.	Statistical outcomes related to the impact of juvenile incarceration are discussed but not all outcomes noted are relevant.
Good	Teplin et al. (2012) Abram et al. (2015)	Area of focus related to the impact of juvenile incarceration on at least one aspect of an individual's life.	Examined juvenile incarceration and outcomes, but the relationship is not clearly defined.	Samples included individuals that were incarcerated as juveniles in a locked facility.	Relevant statistical outcomes related to the impact of juvenile incarceration are discussed.

4. Review of articles

The objective of this review was to offer a comprehensive understanding of how juvenile incarceration affects various domains of life. By adopting a broad scope, this review aimed to illuminate the various consequences of juvenile detention. The reviewed articles were categorized according to the specific domains of life they examine, detailing the ways in which each area was impacted by the experience of juvenile incarceration. The specific domains covered in this review include mental health, physical health, adaptive functioning, education, employment, and recidivism. When an article addressed multiple life domains, its findings were integrated into the relevant sections to provide a cohesive understanding of how juvenile incarceration impacts each area. Lastly, it is important to note that the terms confinement, detention, and incarceration were used interchangeably in the studies reviewed, and thus were used as such in the review.

4.1. Mental health

This section explores the profound impact of juvenile incarceration on mental health, highlighting how the unique stressors of the justice system exacerbate the psychological challenges faced by adolescents and emerging adults (Powell, 2021). Powell (2021) aimed to understand the mental health consequences of confinement, including depression and anxiety. Powell (2021) believed that incarceration in late adolescence (aged 16–17) and emerging adulthood (aged 18–24) would be more harmful than involvement in adulthood (aged >25). For this review, the focus is on the late adolescent subsample, and those who were 18 in the emerging adulthood subsample. It was found that average symptoms of depression and anxiety are significantly higher for those reporting any incarceration during late adolescence (age 17, $p < .01$) and emerging adulthood (age 18, $p < .001$). Additionally, confinement earlier in the life course (ages 16, $p < .01$; 17–22, $p < .05$) was correlated with significant increases in the number of reported symptoms of depression and anxiety (Powell, 2021).

Similarly to Powell (2021), White et al. (2010) examined whether institutional confinement increased levels of depression and anxiety in adolescent males. The preliminary ad hoc analyses did suggest a tentative link between confinement and heightened anxiety, as well as a potential decrease in depression following release from confinement. However, upon conducting further analyses, it was found that first confinement experience did not increase levels of depression or anxiety among male adolescents (White et al., 2010). The authors attributed their null findings to limited information on the array of confinement settings, as well as the lack of statistical power needed to identify significant differences between groups, especially for anxiety. White et al.'s (2010) findings contrast with those of Powell (2021), as they had a substantially smaller sample size, and Powell's (2021) segmentation of the sample into different age ranges based on the age graded hypothesis may have contributed to statistically significant results.

Like the aforementioned studies, Barnert et al. (2018) analyzed the impact of incarceration on symptoms of depression. However, they incorporated an additional variable by examining the influence of child incarceration (ages 7–13) on the rates of suicide in adulthood. Individuals first incarcerated as children showed a higher incidence of subsequent adult depressive symptoms (37.7%) and suicidality (28.1%) compared to those incarcerated at ages 14–32 (23.7% for depressive symptoms, 10.1% for suicidality, $p < .001$). When comparing individuals in the child incarceration subsample (ages 7–12 vs 13–14), significantly higher rates of subsequent adult suicidality among those first incarcerated between ages 7 to 12 were found (49.9% vs. 17.1%, $p = 0.04$). Similar trends were observed in the sub-analyses examining depressive symptoms. These results demonstrate an association between child incarceration and substantially worsened mental health outcomes during adulthood.

Although studies reviewed thus far focused on a select few disorders, Teplin et al. (2012) and Abram et al. (2015) analyzed a wide range of psychiatric disorders in juveniles five years post-detention using the same sample. Teplin et al. (2012) focused on the prevalence and persistence of disorders, while Abram et al. (2015) examined their

Table 3
Characteristics of study sample.

References	Origin of Sample	Sample	Demographic Characteristics
Mental Health			
Abram et al. (2015)	Recruited from the Cook County Juvenile Temporary Detention Center, Chicago, Illinois.	1829 youth (1172 male and 657 female), age (10–13 or ≥14 years).	1005 African American, 296 non-Hispanic white, 524 Hispanic, and 4 other race/ethnicity.
Teplin et al. (2012)	The Northwestern Juvenile Project, sampling youth from the Cook County Juvenile Temporary Detention Center, Chicago, Illinois.	Final sample size was 1829: 1172 males and 657 females, age range, 10–18 years (mean, 14.9 years; median, 15 years).	1005 African Americans, 296 non- Hispanic whites, 524 Hispanics, and 4 other race/ethnicity.
White et al. (2010)	The Pittsburgh Youth Study (PYS). In 1987–88, random samples of first and seventh grade boys enrolled in the City of Pittsburgh public schools were selected.	A total of 510 youths (49 confined and 461 controls), ages 11 to 14.	57.5% African American, with the remainder almost all non-Hispanic white (less than 2% of the sample were Hispanic or Asian).
Powell (2022)	The National Longitudinal Survey of Youth 1997 (NLSY97), a cohort of 8984 youth born between 1980 and 1984.	Final sample of 39,320 person-years for analysis (N = 7598).	Demographic information not reported.
Physical Health			
Aalsma et al. (2016)	Criminal and death records of youth offenders (ages 10–18 years at first arrest) in Marion County, Indiana, from January 1, 1999, to December 31, 2011, were examined.	49,479 adolescents and data were collected from 0.1 to 12.9 years after first arrest (mean, 7.3 years; median, 7.7 years).	Characteristics of sample not provided. However, according to 2010 Census data, Marion County residents were 65.2% white, 28.4% black, 9.3% Hispanic, and 5.9% other race/ethnicity.
Adaptive Functioning			
Dmitrieva et al. (2012)	The Pathways study; Sample collected from juvenile and adult court systems in Philadelphia, Pennsylvania, and Phoenix, Arizona (Schubert et al., 2004).	1171 adjudicated adolescents who were between the ages of 14 and 17 years at the time of their committing offense.	42% percent of the participants were African American, 34% were Hispanic, 19% White, and 5% other or biracial.
Umbach et al. (2018)	Recruited from a large correctional facility in New York City between August 2009 and December 2010.	268 sentenced or detained male youths (Mean age = 17.4 years, SD = 0.71, range = 16–18). Only 197 participants completed both waves of data collection.	Black: 51%, 100 individuals Hispanic: 30%, 59 individuals White: 1%, 2 individuals Multiracial/Other: 18%, 35 individuals
Employment			
Emmert, (2018)	The Rochester Youth Development Study (RYDS), which began in 1988 with 1000 middle school students in the Rochester (New York) Public School System.	Data from the first waves of the RYDS used along with data from 250 participants who were interviewed at ages 29–32 years old.	At Wave 14, the participant panel is 68.9% Black, 16.2% Hispanic, and 14.9% White, and 79% of the original sample was still participating.
Recidivism			
Walker and Herting (2020)	Data represents 32 court jurisdictions in a northwest state from January 2002 through December 2015, and a total base sample of court filings of 46,124.	Final analytic sample size of 44,971. Results primarily male (73%) and had a mean age at first offense of about 15.1 years.	White-non-Latinx (68%), Black (9%), Latinx (16%), American Indian/Alaskan Native (4%), Asian (3%), and Pacific Islander (0.003%).
Nguyen et al. (2017)	Used a subset of individuals enrolled in the Pathways to Desistance study. Participants were adolescents who were in the juvenile or adult court systems in Maricopa County, AZ or Philadelphia County, PA during the recruitment period (November 2000 through January 2003).	The subset included 615 participants who were between 14 and 17 (M = 16.5) years old at the time of their court appearance.	Demographic information not reported.
DeLisi et al. (2011)	Conducted between 1995 and 2000 at an urban jail in the western United States.	The final analytic sample was 445 male offenders.	White (n = 240, 53.9%), Hispanic (n = 128, 28.8%), and African American (n = 51, 11.5%).
Myner et al. (1998)	The study was conducted in a rural central California county, Review of Mental health and probation files.	Data were gathered on 138 males convicted of criminal offenses during their juvenile years.	57% of the sample were Hispanic, 26% Caucasian, 12% African American, and 7% other ethnicity, whereas 44% of the sample had a low SES.
Multiple Areas			
Barnert et al. (2018)	The National Longitudinal Study of Adolescent to Adult Health (Add Health), a nationally representative survey conducted among US youth between the years 1994 and 2008.	Analytic sample of 14,689 young adults.	Child incarceration subsample: 84.3% male, 33.1% black, and 22.4% Hispanic.
Lewis et al. (1994)	Subjects were adolescent boys who were incarcerated in the only correctional school in Connecticut during an 18-month period in the late 1970s.	At the time of the original study, the 97 participant's ages ranged from 12.4 to 17.4 years (mean 15 years 3 months; median 15 years 3 months).	37% white, 41% black, 21% Hispanic, and 1% other. The sample consisted of 79 "more violent" subjects (those with histories of assaultive behavior) and 18

(continued on next page)

Table 3 (*continued*)

References	Origin of Sample	Sample	Demographic Characteristics
			"less violent" subjects.
Schweer-Collins et al. (2024)	Participants in this study included females who were followed for the past 18–26 years, beginning in either 1997 (Cohort 1) or 2003 (Cohort 2).	Participants were 13–17 years at study enrollment. At the final wave of data collection, participants were 29–42 years old. At the final assessment wave there were 129 participants.	68.1% non-Hispanic White, 1.8% African American, 11.4% Hispanic, 0.6% Native American, 0.6% Asian, 16.9% multi-ethnic/racial heritage.
Ramchand et al. (2009)	Recruited participants from all 3 juvenile detention facilities in Los Angeles between February 1999 and May 2000.	The final sample included 449 participants, but the data came from the 87-month follow- up that included 395 participants.	At baseline, the majority (87%) of the sample was male, more than half were Hispanic/Latino, and 35% were aged 16 years old.
Abram et al. (2017)	A stratified random sample of 1829 youth at intake to the Cook County Juvenile Temporary Detention Center in Chicago, Illinois, between November 20, 1995, and June 14, 1998	The stratified random sample included 1172 males and 657 females. The 5-year time point consisted of 1561 participants and the 12-year time point consisted of 1520 participants.	1005 African American, 524 Hispanic, 296 non-Hispanic white, and 4 of other race/ethnicity). At baseline, youth had a median age of 15 years old.
Gilman et al. (2015)	The Seattle Social Development Project (SSDP) which consists of a multiethnic community sample of males and females followed prospectively from 1985, when participants were in the fifth grade, into adulthood.	Only those individuals who ever had a police contact in adolescence were included in the analyses (n = 325). Split into 2 groups: never incarcerated (n = 217) versus incarcerated (n = 108).	From origin sample: 396 (49%) were female, 345 (49.9%) were European American, 177 (25.6%) were African American, 130 (18.8%) were Asian American, and 40 (5.8%) were Native American. Of these, about 5% were Hispanic.

comorbidity and continuity. Both studies used similar procedures but differed in data analysis, with Teplin et al. (2012) exploring disparities by sex, race/ethnicity, and age. Interestingly, the authors found that Hispanics were over twice as likely as non-Hispanic whites to have any anxiety disorder (AOR, 2.18; 95% CI, 1.37–3.49; Teplin et al., 2012). Further, non-Hispanic whites had nearly twice the odds of substance use disorders compared to African Americans (AOR, 1.96; 95% CI, 1.54–2.49). While males showed no racial or ethnic differences in disorder persistence, substance use disorders were about three times more likely to persist among non-Hispanic white and Hispanic females compared to African American females (Teplin et al., 2012). These racial/ethnic disparities suggest that juvenile incarceration may contribute to broader societal inequalities in mental health outcomes.

Teplin et al. (2012) found that females had higher rates of mood disorders (AOR, 1.33; 95% CI, 1.05–1.68) and anxiety disorders (AOR, 1.42; 95% CI, 1.06–1.91) over time. Additionally, three years post-baseline, males had double the odds of substance use disorders compared to females (AOR, 2.00; 95% CI, 1.64–2.43), increasing to 2.5 times after five years (AOR, 2.61; 95% CI, 1.96–3.47). These findings suggest gender-specific mental health patterns post-incarceration, indicating a complex relationship between juvenile detention and psychological outcomes.

As previously noted, Abram et al.'s (2015) study slightly differed from Teplin et al.'s (2012) study, as the focus was comorbidity and continuity of psychiatric disorders. Females had significantly higher rates when in detention (odds ratio, 1.3; 95% CI, 1.0–1.7), but males had significantly higher rates than females five years after detention (odds ratio, 2.3; 95% CI, 1.6–3.3; Abram et al., 2015). In general, even after adjusting for demographic characteristics, participants with more disorders at baseline were more likely to have a disorder about 5 years after detention.

Studies on the juvenile justice system often focus on males due to their majority presence in the correctional system. While Abram et al. (2015) and Teplin et al. (2012) included both genders, Schweer-Collins et al. (2024) uniquely examined the long-term outcomes of females using a longitudinal sample. This approach is particularly noteworthy given the scarcity of research specifically addressing the experiences and outcomes of females in the juvenile justice system. Participants who entered the system at age 12.7, had an average of 4.3 assignments to locked settings and spent 193 days in such settings by age 18. The study found high rates of PTSD, with half meeting the criteria, and significant substance use, with over half using alcohol and 41.9% using illicit drugs post-assessment (Schweer-Collins et al., 2023).

Many studies highlighted drug and alcohol use as major issues for formerly incarcerated juveniles, and findings from Gilman et al. (2015) further validate this conclusion. They discovered that juvenile incarceration significantly predicted adult alcohol and drug use problems ($p < .01$), with participants over twice as likely to meet criteria for alcohol abuse or dependence ($p < .05$; Gilman et al., 2015). Ramchand et al. (2009) revealed that within the year before their follow-up, half of the participants used tobacco, alcohol, or illegal drugs, with about a third using hard drugs (excluding marijuana). Over 20% showed signs of substance abuse, 25% had three or more symptoms of dependence, and 33% experienced five or more depression symptoms. It is important to note that due to participants having a history of both incarceration and group home placement in Ramchand et al.'s (2009) study, results may not be solely attributable to juvenile incarceration.

4.2. *Physical health*

Barnert et al. (2018) examined the influence of child incarceration (ages 7–13) on adult general health amongst other previously discussed factors. Based on self-report measures, it was found that 21.1% of individuals first incarcerated as children reported poor general health in adulthood, in contrast to 13.0% in the age 14–32 incarceration group and 8.4% in the never incarcerated group ($p < .001$). Similarly, 16.9% of those first incarcerated as children reported adult functional limitations (i.e., climbing stairs), compared to 8.4% in the age 14–32 incarceration group ($p = .001$).

Like Barnert et al. (2018), Schweer-Collins et al. (2023) examined the long-term health impacts of juvenile justice involvement but focused exclusively on a female sample. Schweer-Collins et al. (2023) found that over one-third of the participants reported chronic health conditions, including anemia and arthritis, while about 15–20% reported experiencing obesity and high blood pressure. Additionally, the participants indicated below-average levels of general health in adulthood.

Shifting from general health outcomes to more severe consequences, such as mortality, a study conducted by Ramchand et al. (2009) examined the mortality of previously incarcerated juvenile offenders, collecting data approximately 7 years after being placed in a group home. They found that 3% of the sample had died, with causes including gunshot wounds, homicide, drug overdose, and a car accident. The annual mortality rate was five times higher than the county rate for the same age group (Ramchand et al., 2009). Adjusting for gender and race, male participants had nearly three times the mortality rate of the general young male population.

While Ramchand et al. (2009) findings make it challenging to directly link juvenile incarceration to mortality, Aalsma et al. (2016) provided more concrete evidence by examining mortality among juveniles with various forms of justice contact, including arrest, detention, incarceration, and transfer. Participants detained in county centers for short durations (i.e., average of two weeks) and those incarcerated in state juvenile correctional facilities for longer periods (i.e., months or years) served as the subsamples for this review.

During the study, approximately 518 youth offenders died (Aalsma et al., 2016). In the first five years after arrest, only detained youth had an increased risk of death compared to those merely arrested (Hazard Ratio (HR) = 1.6, 95% CI = 1.2, 2.1; Aalsma et al., 2016). After five years, both incarcerated (HR = 2.5, 95% CI = 1.8, 3.6, $p < 0.001$) and detained (HR = 1.7, 95% CI = 1.2, 2.2, $p = 0.001$) youth had higher death risks. Incarcerated youth faced a greater risk of death than detained youth, indicating that death rates rose with the severity of justice system involvement. Male offenders (HR = 2.7, 95% CI = 2.1, 3.4, $p < 0.001$) had a higher death likelihood than females (HR = 1.0; Aalsma et al., 2016), and older age at first arrest (17–18 years old) was significantly linked to increased death risk (HR = 3.65, 95% CI = 2.09, 6.35, $p < 0.001$). These studies underscore the escalating risk of mortality among youth involved in the justice system.

4.3. Adaptive functioning

The impact of juvenile incarceration on adaptive functioning is a vital area of study as it sheds light on how imprisonment during formative years can disrupt developmental processes crucial for a young person's ability to handle common demands in life (Mendel, 2022). To explore these developmental disruptions, Umbach et al. (2018) examined whether time spent incarcerated lead to impairments in aspects of executive functioning (i.e., identifying and regulating emotions, and controlling cognitive functions), as assessed through an emotional go/no-go task. The emotional variant of the go/no-go task assesses emotion regulation, defined as the capability to restrain behavioral responses when faced with emotionally charged stimuli (Umbach et al., 2018).

When analyzing if incarceration resulted in decreases in cognitive functioning, it was found that there was a main effect on time for cognitive control ($p = .001$), emotional regulation ($p = .018$), and emotion recognition ($p < .001$). This demonstrated that task performance significantly declined from baseline to follow up (Umbach et al., 2018). Additional analyses were conducted to assess potential confounding variables, and no notable main or interaction effects (p's > 0.30) were found. Therefore, cognitive decline resulting from incarceration is likely irrespective of initial literacy level, self-reported psychological well-being, or duration between baseline and follow-up (Umbach et al., 2018).

Dmitrieva et al. (2012) similarly analyzed cognition and emotion regulation but did so within the broader framework of psychosocial maturity. For this study, psychosocial maturity was conceptualized as consisting of temperance, perspective, and responsibility (Dmitrieva et al., 2012). Temperance was evaluated by impulse control and the management of aggression while perspective included the consideration of others and focusing on the future. Responsibility involved personal accountability and the ability to resist peer pressure. Although Dmitrieva et al. (2012) was interested in two types of incarceration settings, including confinement in a secure facility and in a residential treatment facility, for the purpose of this review, only those confined in a secure facility were of focus. They found that secure incarceration had a negative impact on short term psychosocial maturity. Interestingly, they did not find sustained differences in maturity as a function of time spent in secure settings. However, they did observe long-term negative effects on psychosocial maturity for those youth incarcerated in residential treatment (Dmitrieva et al., 2012).

When conducting additional analyses, Dmitrieva et al. (2012) found that youth who recently spent more time in a secure facility, and those who were held in a secure setting with adverse characteristics showed lower levels of overall psychosocial maturity, temperance, and responsibility. However, the detrimental effects related to recent incarceration were only found immediately after that period of incarceration. Despite this, these results could provide evidence that incarceration may restrict youths' chances to exercise responsible decision-making and exposes them solely to peers exhibiting deviant behavior, who are unlikely to serve as adequate role models (Dmitrieva et al., 2012).

Abram et al. (2017) took a different approach to examining the effects of juvenile incarceration on indicators of adaptive functioning by analyzing eight positive outcomes among delinquent youth five and twelve years after detention. The eight positive outcomes included educational attainment, gainful activity, desistance from criminal activity, interpersonal functioning, residential independence, parenting responsibility, mental health, and abstaining from substance use. When comparing outcomes by gender it was found that five years after detention, females showed a higher likelihood of achieving positive outcomes in every domain except abstaining from substance abuse (odds ratio [OR], 0.90; 95% CI, 0.68–1.19). When analyzing the outcomes twelve years after detention, it was revealed that only 20% of males and nearly 50% of females had achieved positive outcomes in more than half of the assessed domains.

4.4. Education and employment

Lewis et al. (1994) found that on average, previously incarcerated male delinquents dropped out of school during the ninth grade. They determined that only 10% graduated from high school, with another 31% earning high school equivalency certificates, often while incarcerated for adult crimes. Additionally, just three individuals pursued college education, with minimal completion rates. Similarly, Ramchand et al. (2009) and Abram et al. (2017) both found low rates of educational attainment among participants, with only 59% and 50% respectively achieving a high school diploma or its equivalent. Moreover, employment or school enrollment rates were low, with approximately 20% of males and 33% of females engaged in full-time employment or education (Abram et al., 2017).

Given the findings of Lewis (1994) and Ramchand et al. (2009) that indicate lower completion rates of educational milestones among previously incarcerated juveniles, it is crucial to assess how their correctional experience impacts future employment. Notably, Ramchand et al. (2009) found that only 32% were employed full-time, with 14% actively seeking employment, and over a third of participants were incarcerated at the time of the study. Additionally, 14% reported experiencing homelessness in the past year, particularly prevalent among White participants compared to non-White participants (Ramchand et al., 2009).

While Ramchand et al. (2009) provided statistics on rates of employment for previously incarcerated adolescents, Emmert (2019) conducted a more in-depth analysis. Emmert (2019) found that the age at first incarceration significantly impacts the length of non-employment, with younger first-time inmates facing longer periods of unemployment. Younger individuals at first incarceration (i.e., 16 years old) were found to have longer cumulative periods of non-employment compared to those advancing in age (Emmert, 2019). Additionally, it was discovered that those incarcerated at age 16 experience over 13 times longer periods of non-employment.

Those who managed to secure employment often found themselves limited to entry-level positions. Lewis et al. (1994) concluded that previously incarcerated juveniles commonly held intermittent jobs in unskilled positions such as dishwashing and janitorial work. Another 14% pursued careers in illegal activities such as robbery and drug trafficking. Interestingly, Lewis et al. (1994) discovered that out of 70 previously incarcerated juveniles, only 30% received formal job training post-release.

The lasting effects of juvenile incarceration often make finding stable employment or higher earning jobs challenging, forcing many to rely on government assistance. Gilman et al. (2015) found that juvenile incarceration significantly predicted welfare reliance in adulthood ($p < .01$). More specifically, it was found that participants were more than twice as likely to receive public assistance ($p < .05$) compared to their counterparts who were not incarcerated during adolescence (Gilman et al., 2015).

4.5. Recidivism

While the juvenile justice system aims to rehabilitate youth, a substantial body of literature suggests a complex relationship between juvenile incarceration and subsequent recidivism rates. Gilman et al. (2015) analyzed the long-term consequences of juvenile incarceration on adult functioning (ages 27–33). Initially, juvenile incarceration significantly predicted crime ($p < .001$) and incarceration ($p < .001$). Further, it was found that those who experienced juvenile incarceration were nearly four times more likely to face adult incarceration ($p < .01$) when compared to their counterparts who were not incarcerated during adolescence.

To understand which factors are associated with recidivism among juvenile offenders, Myner et al. (1998) evaluated the correlation coefficients between recidivism and 23 predictor variables, finding ten that significantly correlated with recidivism. A significant correlation between the length of first incarceration and the number of subsequent convictions ($r = 0.35$, $p < .001$) indicates that incarceration does not deter juvenile offenders. Age at first conviction was found to be the most significant predictor of recidivism, explaining 58% of the variance (Myner et al., 1998). Therefore, younger offenders were more likely to reoffend. Interestingly, Ramchand et al. (2009) found that about two-thirds of participants engaged in illegal activities, other than alcohol or drug use, in the year before the follow-up interview. Additionally, 37% were arrested, charged, and booked for a crime during that year. Nearly half had been incarcerated in jail or prison within the 90 days before the interview, with a quarter spending the entire period behind bars (Ramchand et al., 2009).

While Ramchand et al.'s (2009) research offers valuable insights, the possibility of confounding factors (i.e., group home placement) limits the ability to isolate the true effect of incarceration. Therefore, Walker and Herting's (2020) findings may provide more substantial evidence as they took a distinct approach by analyzing the effects of pretrial juvenile detention on recidivism with their sample consisting mainly of males. Pretrial detention was chosen as an area of focus as it makes up about 75% of all juvenile detention admissions. It was revealed that pretrial detention was linked to a 33% increase in felony recidivism and an 11% increase in misdemeanor recidivism within one year (Walker & Herting, 2020). Additionally, a small effect was observed for the length of stay, with a 1% increased risk of recidivism per day of detention. The interaction effects observed indicate that the criminogenic risks linked to pretrial detention were most pronounced among first-time offenders and diminished as the youth's criminal history becomes longer (Walker & Herting, 2020).

Based on Walker and Herting's (2020) findings, it is plausible that pretrial juvenile detention, even for a short stay, impacts recidivism, especially for those with few prior offenses. The results of the study lend partial support to the idea that time spent in confinement makes adolescents more vulnerable to peer contagion, thereby increasing the likelihood of recidivism. This notion aligns with the findings of Schweer-Collins et al. (2024) regarding previously incarcerated juvenile females, as 73% of their sample had interactions with the adult legal system, and about 35.5% had experienced incarceration as adults. It is important to note that the average length of stay in detention for Schweer-Collin et al.'s (2024) sample ($M = 193$ days) significantly exceeded the stay of participants in Walker and Herting's (2020) study in pretrial detention ($M = 8.13$ days), allowing for prolonged susceptibility.

In contrast, Abram et al.'s (2017) study revealed significant sex differences in terms of desistance from criminal activity, with males showing a notably lower likelihood of ceasing criminal behavior compared to females (OR, 9.81; 95% CI, 6.90–13.94). This is further supported by Ramchand et al.'s (2009) findings that conclude female adolescents were less likely to have been arrested, and to have spent time in prison or jail than their male counterparts. Interestingly, in terms of race, Abram et al.'s (2023) found that African American males experienced the most adverse outcomes, marked by incarceration, criminal activity, and limited positive achievements. These findings possibly highlight systemic barriers and social disparities that disproportionately hinder African American males from breaking the cycle of incarceration.

Juvenile incarceration clearly impacts the rate of reoffending later in life, but it is important to consider how it influences the likelihood of one engaging in specific types of crime, and if this varies by length of time and the number of commitments to confinement. DeLisi et al. (2011) analyzed the enduring criminogenic effects of juvenile confinement and specifically, its role in homicide offending. Male offenders with greater commitments to confinement during adolescence (estimate = 0.60, $z = 2.74$) and those who were confined during adolescence (estimate = 0.99, $z = 2.53$) were significantly more likely to be arrested for homicide later in their criminal careers. These findings provide some evidence that juvenile confinement may disrupt successful reintegration back into society and exacerbate the potential for recidivism.

Nguyen et al. (2017) conducted a study to examine whether correctional environments facilitate the accumulation of "criminal capital," or obtaining illegal wages, and if it encourages offending by serving as a "school of crime." It was found that total days incarcerated and exposure to deviant peers predicted an increase in an individual's daily illegal wage rate, even after accounting for criminal experiences and criminal embeddedness (Nguyen et al., 2017). Additionally, a positive relationship was found between the number of friends involved in income-generating crimes within facilities and the reported subsequent illegal wages. This finding reinforces the idea that institutions act as "schools of crime," where individuals learn certain criminal definitions, techniques, skills, and obtain information from their peers (Nguyen et al., 2017).

5. Discussion

This review explored the multifaceted impact of juvenile incarceration in the United States across domains including mental health, physical health, adaptive functioning, employment, education, and recidivism. The findings highlight how incarcerating juveniles does not achieve the intended or desired effects of the justice system, but instead, often has deleterious repercussions on various aspects of juvenile development and life outcomes in adulthood.

5.1. Juvenile incarceration: a life-course perspective

According to life course theory, experiences during adolescence can profoundly shape an individual's trajectory through life stages (Sampson & Laub, 1997). Juvenile incarceration disrupts the normal developmental trajectories of youth, often leading to heightened levels of stress, trauma, and social isolation during a formative period. These experiences can exacerbate pre-existing mental health conditions or contribute to the development of new disorders. For instance, youth in detention often face elevated rates of anxiety and depression (Powell, 2021) as well as increased suicide rates later in life (Barnert et al., 2018) which illustrates the severe impact of these formative experiences on their mental health trajectories. High rates of PTSD in incarcerated females (Schweer-Collins et al., 2023) further demonstrates how the trauma of detention can lead to enduring psychological effects, reinforcing the theory's emphasis on the lasting impacts of early adverse

experiences. Substance abuse later in life is also prevalent, which could be attributable to the stressful environment of incarceration, or the barriers they face because of confinement (Gilman et al., 2015; Ramchand et al., 2009). This finding supports life course theory by showing how early stressors can lead to maladaptive coping mechanisms (i.e., substance use) that persist into adulthood.

The life course theory posits a "snowball" effect, where adolescent incarceration disrupts developmental trajectories crucial for shaping future life outcomes, resulting in cascading consequences (Glaser, 1969; Sampson & Laub, 1997). Umbach et al. (2018) demonstrated that youth in detention experience deficits in executive functions like cognitive control, emotion recognition, and emotion regulation, impairing their ability to navigate social interactions and make sound decisions crucial for their personal and professional development. Additionally, incarceration during youth has been found to impede educational development, as evidenced by lower completion rates of educational milestones among previously incarcerated juveniles (Abram et al., 2017; Lewis et al., 1994; Ramchand et al., 2009). This limitation further restricts the acquisition of cognitive skills and adaptive behaviors essential for adult roles.

The compounded effect of disrupted development, impaired cognitive abilities, and lack of educational attainment due to juvenile incarceration creates enduring barriers to employment. Alarmingly, previously incarcerated juveniles often find themselves limited to intermittent jobs in unskilled positions such as dishwashing and janitorial work (Lewis et al., 1994), underscoring the consequences of disrupted cognitive development and educational setbacks. These findings emphasize the significant impact of incarceration during adolescence on long-term vocational outcomes, affirming that the snowball effect initiated by early detention can exacerbate challenges in accessing higher-skilled employment (Sampson & Laub, 1997). More broadly, juvenile incarceration and its long-term effects on development significantly hinder economic stability, demonstrated by higher reliance on public assistance, elevated unemployment rates, and increased homelessness among previously incarcerated juveniles (Gilman et al., 2015; Ramchand et al., 2009). It is important to note that the lack of economic stability may contribute to the adverse health consequences observed among previously incarcerated youth (Barnert et al., 2018; Schweer--Collins et al., 2024), as they often lack the financial resources needed to maintain their well-being.

Further, the economic challenges stemming from deficits caused by juvenile incarceration perpetuate a cycle where restricted legal opportunities reinforce ongoing criminal behavior, thereby increasing the likelihood of repeated encounters with the justice system and sustaining the cycle of recidivism. Studies consistently demonstrate that juveniles who experience incarceration are more likely to reoffend, which exemplifies the snowball effect, where initial negative experiences such as incarceration led to compounding disadvantages that amplify over time, influencing future behavior and outcomes (Myner, 1998; Delisi et al., 2011; Gilman et al., 2015; Ramchand et al., 2009; Walker & Herting, 2020). Thus, within the framework of life course theory, juvenile incarceration profoundly influences developmental pathways, shaping individuals' life trajectories and outcomes across the lifespan.

The life course theory also highlights how race and ethnicity shape the trajectories of previously incarcerated juveniles. Teplin et al. (2012) found significant racial and ethnic disparities in mental health outcomes among juveniles involved in the justice system. Furthermore, Abram et al. (2023) underscored the disproportionate impact on African American males within the juvenile justice system, highlighting their higher rates of incarceration, persistent involvement in criminal activities, and limited attainment of positive outcomes. These findings align with the life course theory's perspective on cumulative disadvantage and the impact of early life experiences on long-term trajectories (Sampson & Laub, 1997).

5.2. Juvenile incarceration: a social learning perspective

Although the life course theory provides a sound conceptual framework for the cascading effects of juvenile incarceration across various life domains, the social learning theory provides additional insight as it explains how incarcerated juveniles learn and adopt behaviors through their interactions within the correctional environment (Akers, 2009; Boman, Mowen, & Higgins, 2019). In detention centers, juveniles surrounded by delinquent peers often adopt maladaptive behaviors, impacting their psychosocial development and maturity as an immediate consequence (Dmitrieva et al., 2012). More specifically, it has been found that adverse correctional environments hinder the development of temperance, perspective, and responsibility, which are crucial for managing impulses, resisting negative peer influence, and practicing responsible judgement (Dmitrieva et al., 2012). With poor development of these skills, coupled with the lack of exposure to positive role models, juveniles may find it challenging to navigate social and personal challenges effectively, potentially increasing the likelihood of continued involvement in criminal behavior.

Not only does deviant peer affiliation affect the development of certain skills, but it provides juveniles with the opportunity to learn criminal techniques, thereby enhancing their criminal knowledge. This process is emphasized by social learning theory, which posits that individuals acquire behaviors through observing and imitating influential figures in their environment (Akers, 2009; Boman et al., 2019). The correctional environment facilitates the transmission of criminal knowledge and networks, further embedding young offenders in criminal subcultures (Gatti et al., 2009). These interactions can solidify their criminal identities and behaviors, making it more challenging to reintegrate into society and pursue lawful paths. This notion is supported by Nguyen et al.'s (2017) findings that exposure to deviant peers predicts increasing involvement in illegal income generation. Additionally, a positive relationship was found between the number of friends engaged in income-generating crimes within facilities and the subsequent reported illegal wages.

Clearly, the peer contagion seen in detention centers enables youth to learn criminal techniques and attitudes from their peers. This peer contagion creates a "school of crime" effect where juveniles may become more proficient and committed to criminal behavior, leading to higher rates of re-offending (Nguyen et al., 2017; Walker & Herting, 2020). Based on this view, Walker and Herting's (2020) observation of a 1% increased risk of recidivism per day of detention could be attributed to increased exposure to deviant peers. DeLisi et al.'s (2011) findings could also be explained by peer contagion seen in the correctional environment. When examining a sample of high-risk offenders to understand their likelihood of committing homicide, those who were confined during adolescence showed a higher likelihood of being arrested for homicide later in life (DeLisi et al., 2011). Although this correlation was not directly analyzed by the authors, based on social learning theory, it is possible that frequent exposure to other high-risk peers reinforced criminal attitudes and behaviors, leading to more serious criminal offenses.

It is evident that influence from peers in correctional settings significantly increases the likelihood of previously incarcerated juveniles engaging in criminal behavior learned from their surroundings. Such behavior carries substantial risks, potentially leading to fatal outcomes. Ramchand et al. (2009) underscores this point, revealing that individuals in their study who died experienced fatalities that may be the result of engaging in criminal activities such as gunshot wounds, homicide, drug overdoses, and car accidents. Moreover, Aalsma et al.'s (2016) findings indicated that incarcerated youth faced higher mortality rates compared to detained youth, suggesting that prolonged exposure to deviant peers may contribute to increased risks of death.

Examining how gender influences the trajectories of previously incarcerated juveniles within the framework of social learning theory provides insights into their varied adult outcomes. Males tend to

experience worse outcomes following incarceration compared to females (Abram et al., 2017), including higher rates of psychiatric disorders (Abram et al., 2015). Further, males were found to display a lower likelihood of ceasing criminal behavior (Abram et al., 2017), and more likely to have been arrested, and to have spent time in prison or jail when compared to females (Ramchand et al., 2009). While findings on substance use outcomes vary by gender (Teplin et al., 2012; Abram et al., 2017), the overall trend suggests that males experience more severe consequences than females in various aspects of post-incarceration life. Males more frequent interactions within the juvenile justice system increase opportunities for learning negative behaviors from peers, possibly contributing to their worse outcomes compared to females (Archer & Flexon, 2022).

5.3. Conclusion

The impact of juvenile incarceration can be viewed through the lens of social learning theory, which is further understood within the framework of life course theory. Together, these theories emphasize how early life experiences, like juvenile incarceration and the interactions that occur within correctional settings, create a cascading effect that shape long-term trajectories marked by diminished opportunities for positive development and adverse outcomes. Ultimately, the findings of this review underscore the systemic challenges and shortcomings within the juvenile justice system. Therefore, there is a critical need for policies that reduce reliance on incarceration and emphasize community-based alternatives that promote positive youth development.

5.4. Implications

Based on our findings, diversion programs and community-based sentencing alternatives are pivotal in addressing the systemic challenges within the juvenile justice system as they are focused on rehabilitation and positive development. Diversion programs steer youth away from formal judicial proceedings and help maintain the youths' connections to their families and communities (Wilson & Hoge, 2013). Importantly, studies have shown that youth who participate in diversion programs are less likely to reoffend and more likely to succeed in education and employment than those who go through traditional court proceedings (Mendel, 2022). Community-based sentencing alternatives, such as probation and community service, allow young offenders to remain integrated within their communities under supervision. This approach minimizes the disruptive effects of incarceration and leverages community support systems to foster rehabilitation and reduce recidivism (Pappas & Dent, 2023). These policies align with the review's findings by promoting strategies that emphasize rehabilitation and positive outcomes over punitive measures.

5.5. Future directions

Future research should continue to explore the long-term effects of diversion programs and community-based sentencing alternatives on youth recidivism and success in various life domains. Studies could investigate how different types of diversion programs compare in effectiveness and identify the specific elements that contribute to their success. Additionally, examining the impact of community-based alternatives on diverse populations and in various community settings will provide further insights into optimizing these approaches. Future work could also assess how these interventions can be improved or tailored to enhance their effectiveness and ensure they are equitably applied across different demographics.

5.6. Limitations

This review is not without its limitations. First, some studies included in this review utilized data that was collected decades before analyses were conducted, potentially limiting the relevance of findings to current contexts. Further, the limited access to current juvenile samples for research purposes constrain the generalizability of findings and understanding of broader trends in juvenile incarceration outcomes. Next, longitudinal studies often face challenges with attrition rates among samples, which can affect the continuity and completeness of data over time. Further, reliance on life calendars and self-reports to gather information on adolescent offending may introduce inaccuracies, as recall and reporting biases can influence data reliability. Finally, we opted to not report on findings related to relationships and children, as it is difficult to attribute these outcomes directly to juvenile incarceration without clear causal evidence.

CRediT authorship contribution statement

E. Ackerman: Writing – original draft, review & editing, Methodology, Investigation, Conceptualization. **J. Magram:** Writing – original draft, review & editing, Methodology, Investigation, Conceptualization. **T.D. Kennedy:** Writing – review & editing, Methodology, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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