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Ecological systems in relation to Latinx youth in the juvenile justice system: A narrative literature review

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Abstract

We conducted a narrative review of literature focused on Latinx youth in the Juvenile Justice System (JJS). The goal of this review was to identify the behavioral health needs and social and cultural factors that place Latinx youth at disproportionate risk for contact and entrenchment with the JJS. Ecodevelopmental Theory (ET) was used as the guiding framework for this review, and a total of 16 peer reviewed articles from Embase, PsychINFO, and Pubmed were collected, analyzed, and summarized. Consistent with ET, we organized themes from the literature into the following sections: (a) microsystem (i.e., family, psychiatric care, sexual health care, school); (b) mesosystem (i.e., family and social environment); (c) exosystem (i.e., family and neighborhood context, and bicultural stress); and (d) macrosystem (i.e., generational status, cultural stress, social class). Sociopolitical disparities, such as disproportionate sentencing by social class and trauma stemming from political violence, and intersections of cultural variables (e.g., generational status and acculturation) should be closely considered in any prevention and intervention efforts targeting Latinx youths. More research to understand and address the unique needs of this population is also needed.

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CRedit authorship contribution statement

David Hoskins: Conceptualization, Data curation, Funding acquisition, Methodology, Validation. **Peggy Tahir:** Methodology. **Margareth Del Cid:** Validation. **Leyla Perez-Gualdron:** Data curation. **Marina Tolou-Shams:** Supervision, Funding acquisition.

Declaration of Competing Interest

The authors certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

Keywords

Latinx youth; Ecological system; Sexual behavior; Substance abuse; Trauma; Ethnic minority youth

The incarceration of youth in the Juvenile Justice System (JJS) has been tied to the perpetuation of physical and behavioral health disparities (e.g., mental health, substance use, sexual health) as well as to long-term negative effects that expand to youths' social networks (Lambie & Randell, 2013). Having a juvenile record negatively affects an individual's ability to secure work, housing, and a stable social network—all factors associated with maintaining good overall health (Castillo, 2014). In addition, Tapia (2015) noted that literature on the JJS reveals that this system fails to meet the developmental and rehabilitative needs of the youth that it aims to serve, thus exacerbating risk already present in this population. Latinx justice-involved youth face an even graver situation. These youth, when compared to non-Latinx justice-involved youth, have reported some of the highest rates of behavioral health issues, including use of illicit drugs and substance use disorders (U.S. Department of Health and Human Services, 2005; Karnik et al., 2010), mental health disorders (Teplin et al., 2002; Abram et al., 2008), and sexually transmitted infections (Winkelman et al., 2017), and risky sex behaviors (Johnston et al., 2016). They have also been shown to have high rates of lifetime traumatic experiences (Hoskins, Marshall, Koinis-Mitchell, Galbraith, & Tolou-Shams, 2018). Disparate sentencing for justice-involved youth further compounds already precarious circumstances for Latinx youth, leading to their disproportionate confinement rather than referral to mental or behavioral health treatment when compared to their white peers (75% versus 35%, respectively; Miller, 1996; Winkelman et al., 2017). Youth who come into contact with the JJS are embedded within a number of other systems—school, child welfare, and neighborhoods—that may serve to protect against or promote risk related to behavioral health outcomes. For this reason, targeted research examining the characteristics and influences of these various systems may provide valuable insight into how to improve behavioral health and legal outcomes for justice-involved Latinx youth.

In 2017, the Latinx population represented 17.8% of the U.S. general population (excluding military personnel and incarcerated individuals, as the Census does; U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement, 2016), and has been one of the fastest growing ethnic groups in the U.S. In 2000, Latinx comprised 12.5% of the US population, with estimates noting that the Latinx population will expand by 113% from 2000 to 2025, and by 273% from 2000 to 2050 (U.S. Census, 2008; Passel and Cohn, 2009). Approximately one-third of this growing population is under 18, which makes this growth trajectory that much more pronounced for Latinx adolescents (U.S. Census, 2015)—making it all the more important to address the disparate treatment of Latinx youth in regard to JJS.

The Latinx population has experienced the impact of structural racism and systems of oppression in the U.S. for many years. The JJS acts as one of these systems. For instance, Heilbrun, Goldstein, DeMatteo, Newsham, and Gale-Bentz (2017) noted that there are multiple intercepts when youth come into contact with the justice system, including first

contact with the JJS, initial hearing and detention, jail/court, re-entry from the JJS, and community correction and community support (such as probation or parole). In a nationally representative study of adolescents from 2009 to 2014, Winkelman, Frank, Binswanger, and Pinals (2017) noted that Latinx youth and African American youth are the most overrepresented ethnic and racial groups at every one of these intercepts of the JJS. In addition, the American Psychological Association (2008) identified some schools' *zero tolerance* policies as a means of oppression. Zero tolerance policies are predefined disciplinary action utilized in response to a violation of school rules with no regard for the seriousness of offense. To enforce discipline policies, students with behavioral health needs are then referred to law enforcement rather than to teachers/school administrators. Because these strategies are commonly employed at low-income, racially and ethnically diverse schools, their implementation increases the rates at which youth from lower socioeconomic statuses are in contact with the justice system (Rios & Galicia, 2013; Castillo, 2014). It is alarming that, in a country that already has the highest rate of juvenile incarceration in the world (Hazel, 2008), the usage of zero tolerance policies is pushing the rate higher (Castillo, 2014).

Miller (2014) was one of the first researchers to note the lack of examination of the needs of U.S. born, Latinx youth. Tapia (2015) noted that U.S.-born Latinx youth are more prevalent in the JJS than are foreign-born Latinx youth—at a rate of two to one (i.e., 12.6% second generation versus 6.9% first generation) by 2008. Much of the literature focuses on theory from health sciences that identifies a concept called *the Latinx paradox*, which suggests that more acculturated Latinx youth are at greater risk for subsequent behavior health needs (Cagney, Browning, & Wallace, 2007; Vega & Lopez, 2001; Villareal et al., 2009). For example, second-generation Latinx youth, compared to first-generation, are more likely to use and abuse substances (Miller, 2011) and engage in more violent delinquency (Gibson & Miller, 2010). Gibson and Miller also found that second-generation Latinx youth report more violent victimization.

A number of methodological challenges exist for researchers attempting to understand the heterogeneous Latinx population. Data collection that utilizes racial categorization alone fails to provide a comprehensive picture, as Latinx youth may also identify as White, Black, or Asian, but in the JJS, Latinx youth are often classified by race as Hispanic or non-Hispanic White (Arya, 2009). Tapia (2015) indicated that the use of limited racial and ethnic identifiers in available data sets has discouraged researchers from pursuing scholarly inquiry into issues related to the incarceration of Latinx youth as compared to that of other racial and ethnic groups, such as African Americans and Whites. Furthermore, federal and state databases fail to capture the diverse identities of Latinx youth—using inconsistent terms with varied meanings (i.e., *Hispanic* vs *Latino*; Greene & Gabiddon, 2009). Using the term *Latina/o* excludes gender-fluid youth (Velez, 2016). There are limited distinctions made between foreign-born and U.S.-born individuals. The absence of this information undermines the ability to understand the characteristics and needs of Latinx groups, given the well-documented differences between foreign-born and U.S.-born sub-populations. For example, Urbina (2007) noted that both the historical processes that push individuals to migrate to the U.S. and the opportunity to progress economically vary dramatically, both positively and negatively, between these two groups; some examples of influential

immigration factors include the trauma of political warfare, attempts to escape extreme poverty, and the search for education and healthcare. Additionally, Urbina (2007) noted that when public-use data sets (including the U.S. Census) only use *Hispanic* or *Latinx*, they fail to distinguish among foreign-born Latinx groups from South America, Central America, and Mexico. The field therefore needs research on the behavioral health needs of Latinx youth in the JJS that employs rigorous methodology to address the limitations of prior research with this population. We use the term *Latinx* rather than *Hispanic* to describe our population of interest in order to encompass a heterogeneous population that differs internally in terms of characteristics such as race, social class, country of origin, native language, and gender identity (Velez, 2016). We use the term *Latinx* rather than *Latino/a* so as to avoid gender binaries and be inclusive of gender-fluid Latinx youth. In addition, in order to appropriately describe the heterogeneity of this population, we report individual level data when appropriate.

1. Purpose of the study

To address the concerns of the overrepresentation of Latinx youth at all intercepts of the JJS (Winkelman et al., 2017) and well-documented long-term negative health consequences of high incarceration rates for Latinx communities, we reviewed the literature to identify the ecodevelopmental factors (Szapocznick & Coatsworth, 1999) that promote or protect against JJS contact (initial contact and recidivism) and poor behavioral health outcomes (substance use, mental health, sexual and reproductive health) for justice-involved Latinx youth. We explicitly reviewed studies that identify justice involved Latinx youth as their primary focus.

2. Exploring the context of Latinx youth in the JJS

2.1. Conceptual framework: Ecodevelopmental theory (ET)

Ecodevelopmental Theory (Szapocznick & Coatsworth, 1999) is comprised of three theoretical components: (1) social-ecological theory, (2) developmental theory, and (3) social interactions. In social-ecological theory there are four contextual influences, or interacting systems, present in a youth's environment that can be visually depicted as four concentric circles or nested layers; interactions between and among these systems can have a bi-directional and/or circular impact (see Fig. 1).

Social-ecological theory has been recommended by researchers as a guide to conducting public health intervention research (Golden & Earp, 2012). It presupposes that behavioral health is impacted by multiple systems (e.g., neighborhood and school) in the youth's environment. These ecological systems interact with the individual to promote health and/or create unhealthy outcomes (e.g., substance use, delinquency, and entry into the JJS; Kazdough, Abdelghaffar, Bouftini, El Fakir, & Achhab, 2018). Ecodevelopmental Theory also allows for a deeper exploration and evaluation of how interactions between and among systems impact individual youth and how this impact may differ based on familial differences such as nativity and immigrant generation (Szapocznick, Santisteban, Rio, & Perez-Vidal, 1989), exploration of complex interactions, and consideration of multiple factors that influence risk and resilience. Microsystems are the first layer, encompassing the adolescent and their relationships within immediate social contexts, including family and

peers. Second, the mesosystem represents the processes and interactions between two or more microsystems (e.g., between the family and school). The third layer is the exosystem, which includes processes and relationships between two or more microsystems that do not directly involve the adolescent but indirectly affect the adolescent. For example, the cumulative stress encountered by a parent dealing with a stressful workplace (e.g., racism at work, financial stress) may negatively affect the wellbeing of offspring. Finally, the macrosystem encompasses the cultural characteristics of the micro-, meso-, and exosystem, including the broader economy, cultural values, and political system. In this realm, one could study how Latinx immigrant families may experience tensions between the host culture and Latinx culture(s) and the impact that racism has on disproportionate contact with the justice system.

ET's second component applies the transactional developmental model (Sameroff, 1983) and developmental systems theory (Ford & Lerner, 1992) by highlighting the importance of an individual's intrapersonal processes—such as biological, psychological, and emotional processes—and the development of these processes over time (Cairns, Elder, & Costello, 1996). For example, based on gender, immigration status, sociopolitical factors, and resources available, Latinx youths may vary in their intrapersonal developmental experiences.

The third component of ET consists of social relationships and interactions. From this perspective, adolescents experience risk or protection via interactions between mesosystems, such as negative communication between parents and the school system or protective factors such as parental monitoring of peers (e.g., knowing who their child's peers are).

3. Methods

Three databases (PsychINFO, Embase, and PubMed) were used to conduct the literature search based on their ability to identify the majority of publications related to the topic. In order to address our primary research question, we consulted with a librarian to develop search categories to reference adolescents, Latinx, risk behaviors, and each ecological system. We made changes to the search terms to make them specific to each database, as the indexing structures are different in each database. Across all databases, we used the same keywords and created keywords for Mesh/Index terms when Mesh/Index terms were not used. Table 1 identifies the exact search terms utilized for each search and the number of results within each search engine.

The searches of PubMed (N = 537), PsychINFO (N = 1,462), and EMBASE (N = 887) for peer-reviewed publications were conducted on December 13, 2018. From the 2,886 articles identified, we reviewed article titles and/or abstracts for those published after January 1, 1995. We chose this date because in that year, the majority of U.S. states implemented changes that allowed juvenile courts to sentence juvenile offenders to adult incarceration and to institute harsher sentencing (Caudill & Trulson, 2016; Woolard, 2001). Woolard showed that within one year of these changes in Texas, Latinx youth were being sentenced to adult incarceration at a higher rate than were other races and ethnicities. In response to these harsher sentences in the same year, the McArthur Foundation posed a moral mandate nation-

wide to create an evidence-based juvenile justice system. In studying neuroscience and developmental approaches to challenge adolescents being charged with and incarcerated as adults, the Foundation was able to identify differences between adolescent and adult brains. It then promoted rehabilitation for justice-involved youth, such as assessment and referrals to specialty services for behavioral health needs, as an alternative to adult incarceration. The studies met the following three criteria. First, studies involving Latinx youth ages 13–18. We recognized that states differed in their upper and lower age range limits and in how they differentiate status offenders versus delinquent offenders (Office of Juvenile Justice and Delinquency, 2016). We identified 13 as the minimum age for our range, as teenagers are the population most likely to commit crimes. The minimum age that a youth is referred to the justice system is determined by the specific state and frequently not specified. When the state does specify the minimum age requirement, the youth can be referred to either social services or the juvenile justice system. Therefore, if an article included youth younger than 13, we included it only if it focused on youth in the justice system. As for the maximum age limit, we identified 18 as the maximum age for our range. This is also consistent with the majority of states as youth younger than 18 are under the jurisdiction of the juvenile justice system. Similar to the minimum age, we did allow for articles that were juvenile justice focused with samples of up to age 19. Second, studies of justice-involved individuals—including those at first contact with the court, initial hearing and detention, jail/court, re-entry from the JJS, and community correction and community support (such as probation or parole; Heilbrun et al., 2017). Third, origination as a U.S. publication. One-hundred nineteen articles fit into our criteria. Two independent reviewers reviewed these articles, each independently utilizing a matrix methods approach for narrative analysis as defined by Garrard (2016)—including organizing a documents section, creating a review matrix, and conducting an appraisal and critique of the literature. Sixty-six articles were related to the Microsystem, 15 were related to the mesosystem, 17 to the macrosystem, and 23 to the exosystem. Each reviewer created an empirically derived list of the top 5 articles related to each system. Information related to decision-making on articles and relevance of ranking included: (1) purpose of the study, (2) relevance to the ecological model, (3) sample size, percentage of Latinx youth, and setting, and (4) findings/conclusions addressing differences for Latinx subjects (i.e., must have relevance to a Latinx sample versus combining results by race/ethnicity). From this decision tree, we narrowed down the list of articles to 16. Table 2 organizes the articles reviewed by organizing category (e.g., microsystem), order in which the article appears in our results section, publication year, study sample (sample size, gender, and setting), focus area, and primary findings.

4. Results

An initial review of the literature revealed the body of available published research on Latinx youth involvement in the JJS in relation to ET. The literature under the four ecological categories for justice-involved Latinx youth uncovered (a) high rates of behavioral health needs among justice-involved, Latinx youth, (b) systemic bias that place Latinx youth at increased risk for surveillance by and contact with law enforcement, (c) varied experiences contributing to JJS involvement, (d) disparities in specialty mental health care, and (e) an

urgent need to develop practices able to attend to the unique social ecology of Latinx youth. The following results come from the articles listed in Table 2.

5. Social-ecological systems

Microsystem.

The microsystem is the first layer of the social-ecological model. We explored the youth's individual emotional/behavioral health functioning and how relationships with their immediate contexts (e.g., family, peers) are associated. The search resulted in five articles of relevance, which highlight several important factors, including differences in behavioral risk by individual factors (i.e., gender, race/ethnic identity) and the predictive effects of JJS involvement, family composition, parenting styles, and school experiences (Winkelman et al., 2017; Teplin, Abram, McClelland, Dulcan, & Mericle, 2002; Johnston et al., 2016; Caldwell, Silver, & Strada, 2010; Vidourek, King, Merianos, & Bartsch, 2016).

Winkelman et al. (2017) compared a mixed group of adolescents with and without JJS involvement over the prior year. The sample of justice involved Latinx youth consisted of 1,174 youth aged 12–17 with various levels JJS involvement (arrest, probation, detention). The researchers compared outcomes for justice-involved and non-involved youth across and within races/ethnic groups. In this study, JJS involvement reflect the microsystem (i.e., interaction of youth and local law enforcement). The findings showed significant racial and ethnic differences between justice and non-justice involved samples. The higher percentage of African American and Latinx adolescents in the justice-involved sample are consistent with previous research documenting disproportionate contact of racial and ethnic minorities at all levels of the JJS. While not an explicit aim of the study, reported demographic differences across racial/ethnic groups for the justice-involved sample reflect the potential association between social stratification and justice involvement. Such that justice-involved Latinx and African American youth were more likely to have lower incomes, use government assistance, and live in the inner city as compared to White youth. In terms of behavioral health, justice-involved Latinx youth were more likely than African American youth to screen positive for substance use and mood disorders. Latinx youth with prior-year justice involvement reported higher rates of cocaine, stimulant, and marijuana use in comparison to their White and African American counterparts. Additionally, Latinx youth were more likely to have a physical health condition (e.g., STI, asthma, pneumonia, high blood pressure, and diabetes) than White youth. Latinx youth with justice involvement in the past year were more likely to have mood, substance use, and physical health disorders compared to their non-justice involved Latinx peers. From their work, Winkelman et al. (2017) highlight the deleterious impact of JJS involvement on the behavioral health of Latinx youth.

While the negative effects of disproportionate JJS contact has been documented for Latinx youth, less is known about their behavioral health needs upon initial JJS contact (Teplin et al., 2002; Winkelman et al., 2017). Teplin and colleagues provided one of the few large-scale studies examining females in the JJS. As with Winkelman et al.'s study, JJS involvement reflected the microsystem domain. The researchers examined the variability of mental health and substance use diagnoses by race/ethnicity. In this sample, 1,829 youth ages 10 through

18 were randomly sampled at a detention center in Chicago. Of the three ethnic/racial groups, Latinx and White females showed higher rates of disruptive behavior and substance use disorders than did African American females. Understanding the cause of these behavioral health disparities may have been beyond the scope of Teplin et al.'s study (2002). Nevertheless, these findings have valuable implications for justice-involved Latinx youth. If true differences between ethnic/racial groups exists, then detention centers must consider what resources are needed to address the unique needs of justice-involved Latinx youth. Alternatively, variability in diagnoses may point to more exo- or macro-systemic factors contributing to differential diagnosis and/or disproportionate JJS contact of Latinx youth with disruptive behavior and/or substance use related disorders. It is clear that more research is needed to identify the specific behavioral health needs of Latinx youth and their underlying contributors.

Using a mixed methods research approach, Johnston et al. (2016) assessed reproductive healthcare barriers and challenges following health care recommendations in a sample of majority Latinx females detained in the JJS ($N = 27$, 86%). For this study, access to healthcare services represented youth's involvement with the health services microsystem. During their time in a juvenile detention facility, the participants completed online surveys about their sexual health behaviors. A subsequent semi-structured interview assessed their experiences with reproductive health care services. Findings of the study indicated that 50% of the sample reported a past STI diagnosis; 14% reported engaging in transactional sex (i.e., exchanging sex for money, drugs, or housing); the average number of sexual partners over the prior 12 months was 2.9 (range: 0 to > 10), with average lifetime partners of 3.6 (median: 2 and 3, respectively); and of those who had had sexual intercourse, only 8 (33%) reported condom use during their last sexual encounter. The qualitative data revealed a greater emphasis on "personal priorities" over reproductive health and overall health for participating girls. Participants reported desire to get pregnant and fear of getting caught with contraceptives as reasons for not using condoms. Participants identified two important external influences, 1) lack of assistance with reproductive health care from physicians and 2) hearing about "bad experiences" with contraception from social contacts. They also noted the challenges of accessing services while "on the run" from police, including not knowing where to receive healthcare. Johnston et al.'s work not only provided a better understanding of barriers to health care, but also highlighted the interplay between individual and contextual factors (i.e., peer and health care workers) through their mixed-method study design.

Caldwell et al. (2010) conducted a study exploring the relationships between family composition, mental health issues, family substance use, and severity of substance abuse by youth in detention. The microsystem domain within this study is represented by family, specifically family composition and family history of substance use. The sample consisted of 438 (283 males, 155 females) adjudicated offenders, ages 11 to 18, who were in detention centers in the western region of the United States. The sample was comprised of 38% Latinx, 34% African American, and 28% White youth. The researchers found no relationship between severity of substance use by the youth and family composition among the three racial and ethnic groups. Group comparisons showed detained White youth reported higher rates of familial substance use compared to African American and Latinx

youth. African American and Latinx youth in reconstituted families reported higher self-esteem scores than did White youth. There was a stronger negative relationship between depression and self-esteem for White youth than for African American and Latinx youth. In terms of specific substance use, White and Latinx youth reported more cocaine use than did African American youth. White youth reported more methamphetamine use, cigarette use, narcotics/barbiturate, and over-the-counter drug use than did African American and Latinx youth. With regards to substance use, this research suggests that family history of substance nor family composition are robust predictors of substance use for Latinx youth as compared to White youth. However, family composition was a stronger predictor of self-esteem, showing a positive effect for Latinx youth in JJS detainment.

Vidourek et al. (2016) examined indicators for legal involvement among a nationally representative sample of Latinx adolescents in a cross-sectional study. Within Vidourek et al.'s study, the family and school microsystems are reflected in the parenting style and school experiences variables. Using data from the 2012 National Survey on Drug Use and Health, they identified that 7.6% of 3,457 Latinx youth ages 12–17 reported legal involvement (i.e., arrested and booked for breaking the law, on probation in the past 12 months, or on parole or supervised release in the past 12 months). Positive predictors of legal involvement were Latinx ethnicity, male gender, age between 14 and 17 years old, authoritarian parenting style, limited positive school experiences, and recent alcohol use (i.e., past 30 days). While these findings are consistent with trends found for other justice-involved racial/ethnic youth groups, they reinforce the importance of positive school experiences and parenting styles in preventing legal involvement for Latinx youth.

Mesosystem.

According to ET, the mesosystem represents the processes and interactions among two or more microsystems. Search results included three relevant articles, which referred to parental monitoring of peers mediating the relationship between family functioning and problem behaviors (i.e., externalizing behaviors, substance use, and sexual risk behavior) and the relationship between the youths' families and the JJS (Dillon, Pantin, Robbins, & Szapocznik, 2008; Caldwell, Beutler, Ross, & Silver, 2006; Cavanagh & Cauffman, 2015).

Dillon et al. (2008) studied African American and Latinx youth in Miami, Florida, the majority were justice-involved, the remaining having been referred from mental health agencies or school and family community institutions. The authors hypothesized that family functioning would be associated with parental monitoring of peers and problem behaviors, including externalizing behavior, drug use, and sexual risk behavior. Dillon et al.'s study examines the family microsystem (e.g., family functioning) and its interaction with the peer microsystem (e.g., parental monitoring of peers). Participants were both African American (N = 77) and Latinx (N = 113) youth. Of the Latinx participants, the mean age was 15.6, 48% were referred from the JJS and 52% from a drug addiction receiving facility or school system. When African American and Latinx youth were combined, parental monitoring of peers mediated the association between family functioning and externalizing behavior. When analyzing the Latinx subgroup alone, family functioning was positively related to parental monitoring of peers; however, the paths between the hypothesized mediating variable and

externalizing behavior were not significant, suggesting no mediating effect. A significant positive relationship was found between marijuana use and externalizing behavior for the Latinx sample only. Dillon et al. demonstrated that while family functioning and parental monitoring appear to be associated with problem behaviors for all justice-involved youth, the magnitude of these effects differed by ethnic/racial group. For Latinx youth, better family functioning was associated with greater parental monitoring but not influence externalizing behaviors. Compared to other types of substance use, marijuana use was the only substance that was associated with externalizing behaviors in Latinx youth.

Caldwell et al. (2006) conducted one of the first studies to assess a sample of Mexican American male adolescents ($n = 95$) on probation in Southern California. Similar to Dillon et al. (2008), they evaluated the relationship between parental monitoring (mesosystem) and delinquency, with parent monitoring operationalized as adolescent's perception of their parents' knowledge of their whereabouts, progress in school, social and extracurricular activities, and peer associations. Results of the study indicated that more parental monitoring (whether maternal or paternal) was associated with less delinquency but not associated with self-esteem. In addition, greater youth self-esteem was associated with more delinquent behaviors. Results from Caldwell et al. (2006) not only corroborate previous findings on the protective effects of parental monitoring, but also show more specifically that the trend holds true for Latinx youth of Mexican American heritage. Moreover, the positive relationship found between self-esteem and delinquent behaviors could also suggest that Mexican American youth are motivated by more internal factors for engaging in delinquent.

Cavanagh and Cauffman (2015) sought to understand differences between undocumented and documented Latinx families (155 dyads) and their perceptions of the police following a youth's first arrest. Interactions between family (parent documentation status) and law enforcement (attitudes towards police following youth arrest) reflect the mesosystem within this study. Their findings suggested that Latinx youth with undocumented mothers were more likely to have a negative perception of police than were those whose mothers were documented. To confirm that group differences were specific to family perceptions of police, the authors compared the results to those examining family perceptions of judges. There were no differences between the two groups. This study by Cavanaugh and Cauffman indicated that the influence of justice-involvement, arrest in this case, may take on a different significance depending on family-level factors, like documentation status. This may intern alter perceptions about police, which in-turn can negatively impact family-law enforcement interactions.

Exosystem.

The exosystem includes processes and relationships among two or more microsystems that do not directly involve the adolescent but indirectly affect the adolescent. Search results include three relevant articles associated with justice system entry risk for Latinx youth compared to other ethnic and racial groups, individual-level risk factors and entry risk in comparison to other ethnic and racial groups, and the court system's systematic oppression of Latinx youth (Vazsonyi and Chen, 2010; Feldstein Ewing, Venner, Mead, & Bryan, 2011; White, 2016).

Vazsonyi and Chen (2010) conducted one of the first studies to assess entry risk into the JJS by race/ethnicity. The sample was selected from low to lower-middle SES youth who were part of a large-scale, longitudinal violence prevention effort in the Tucson metropolitan area from 1994 to 1999. This study examined the exosystem-level factor of discriminatory practices that contribute to overrepresentation of ethnic/racial minorities groups within the JJS. The study assessed 2,754 youth from five racial and ethnic groups (55% Latinx, 25% European American, 13% American Indian, 4% African American, and 1% Asian American); just over 50% were male. The authors aimed to understand risk for entry into the juvenile justice system among the five groups over the course of 10 years. They found a twofold risk of JJS entry for Latinx youth compared to the other four racial and ethnic groups, with no significant differences in risk among those four groups. Consequently, even before considering the effects of other risk factors Latinx youth are at greater risk of JJS involvement by virtue of their ethnicity. While these findings show an unfortunate trend, documenting the direct effects of exosystem-level influences for Latinx youth allow researchers to identify areas for intervention/reform.

Feldstein Ewing et al. (2011) conducted a study of a diverse sample of justice-involved youth in the southwest [N = 651; 66% male; 41% Latinx, 24% African American, 15% White, and 11% American Indian/Alaska Native (AIAN)]. The authors tested three hypotheses. First, they examined whether racial/ethnic minority youth would be over-represented in the justice system compared to the geographical location where the study took place. The authors found support for the disproportionate representation, such that youth representation in the justice system was twice as high for Latinx youth, six times as high for African American youth, ten times as high for AIAN, and one-fifth as high for White youth compared to the population representation in the geographic region. The second hypothesis posited that rates of substance use would differ across racial and ethnic groups. The authors found that White youth endorsed the greatest proportion of substance use (i.e., alcohol, cigarettes, and hard drugs used). Third, for justice-involved youth, the authors hypothesized that a set of individual-level risk factors would predict substance use for White youth but not for racial/ethnic minority youth. The authors found that externalizing behaviors were associated with hard drug use for White, Latinx, and AIAN youth but not for African American youth. In addition, African American youth were the most likely to be enrolled in school; Latinx youth were second most likely to be enrolled in school, and White and AIAN youth did not differ. Both African American youth and Latinx youth reported the highest self-esteem and lowest externalizing scores. Both the White youth and AIAN endorsed lower self-esteem and higher externalizing scores but did not differ from each other. Much like previous research comparing racial and ethnic groups, Feldstein Ewing et al. (2011) show differences in the rates of substance use and mental health outcomes for justice-involved Latinx youth compared to their peers. Feldstein Ewing et al. expands on previous work associating these behavioral health differences with exosystem-level influences (i.e., disproportionate justice contact for Latinx youth).

White (2016) conducted a study among youth 5,501 (White 40%, African American 13%, and Latinx 42%). The authors utilized administrative court records from Maricopa County, Arizona to analyze data on adjudicated who received a disposition from the juvenile court between 2009 and 2011. The study had two aims. First, they examined whether mental

health problems were related to disposition (confinement versus community supervision). The authors found that youth with mental health problems were more likely to be sentenced to confinement than community supervision. Second, they assessed whether the relationship between mental health problems and disposition varied by race/ethnicity. As with the previous studies, White's study examined biases within the JJS that contribute to differential sentencing for Latinx youth. The findings revealed that Latinx youth (49%) and African American youth (20%) were more likely to be sentenced to confinement. African American youth had the highest rates of mental health problems (49%) and Latinx youth had the lowest (33%), but still high in comparison to other groups. When compared to the referent group (Whites with mental health problems), Latinx youth both with and without mental health problems were sentenced to confinement at higher rates. Similarly, when compared to Whites with mental health problems, Latinx youth and African American youth with mental health problems were sentenced to confinement at higher rates. The author concluded that the juvenile courts' sentencing disparities were largely driven by ethnicity/race over mental health status, in that Whites received more lenient sentencing regardless of whether they had mental health problems. Thus, in addition to ethnicity, current mental health, can also place Latinx youth at increased risk of JJS involvement and harsher sentences. These researchers suggest that instead of receiving appropriate supports, Latinx youth experiencing mental health problems may find themselves at greater risk of JJS.

Macrosystem.

The macrosystem encompasses the cultural characteristics of the previous three systems. We review five articles addressing generational and social class differences of Latinx youth reflecting macrosystem-level factors (Miller, 2015; Tapia, 2016; Karoly, Callahan, Schmiede, & Feldstein Ewing, 2016; Bond-Maupin & Maupin, 1998; Rodriguez, 2007). These articles highlight the cascading effects of macrosystem-level influences on behavioral health outcomes of justice-involved youth. Even though macrosystem-level factors involve higher level processes and are further removed for youth, these may still have a tangible effect on the individual lives of justice-involved Latinx youth and thus are important to examine.

Researchers have underscored the importance of cultural context and generational status in documented the experiences of Latinx youth (Miller, 2015; Tapia, 2015). For instance, Miller and Tapia conducted studies that were observational and retrospective, that allow a closer look at the differences between foreign-born and U.S.-born Latinx youth in the JJS. Miller (2015) assessed the impact of generational status using data from the National Longitudinal Study of Adolescent Health (Add Health) (Harris et al., 2009). The Add Health study was a long-itudinal, nationally representative sample, with 743 Latinx adolescents enrolled in U.S. schools (grades 7 through 12) during the 1994–95 school year. Miller (2015) used data from "Wave 3," when respondents in their late teens and early 20 s were asked about their prior involvement in the JJS. A greater proportion of U.S.-born Latinx respondents under the age of 18 years were incarcerated than were their foreign-born (12.6% vs. 6.9% respectively) counterparts. The number of previous court convictions did not vary significantly by nativity. However, the two groups differed in terms of types of offenses. U.S.-born Latinxs were typically convicted of robbery, theft, possession of drugs, or a major

traffic charge, while a significantly larger proportion of foreign-born Latinxs were convicted of assault, purchase/use of alcohol, or other misdemeanors. Notably, foreign-born Latinxs had a greater likelihood of being convicted once charged. Differences in offense types and rates of conviction by nativity highlight the value of comparing outcomes by generational status to understand why foreign-born Latinx youth fare better than those born in the U.S.

A second study conducted by Tapia (2015) provided an analysis of self-reported arrests across various Latinx subgroups. Tapia used two cross-sectional studies over a ten-year span to analyze arrest levels and their correlates for various racial/ethnic groups. Results from a teen sample in 1998 were compared with a young adult sample in 2008 to observe arrest patterns and changes over time among various ethnic/racial groups. The final sample size was 6,599 in 1998 and 4,246 in 2008. Tapia was able to distinguish between foreign-born and U.S.-born Latinxs. However, it was not possible to distinguish between Latinx subgroups.

Analyses of the 1998 teen cohort, Tapia found that U.S.-born Latinx and Black youth were arrested at the highest rate of all racial/ethnic groups, while foreign-born Latinxs were arrested at the lowest rate. Between 1998 and 2008, the arrest gap between U.S.-born Latinxs and foreign-born Latinxs widened significantly, with the rate for U.S.-born Latinxs more than double that of the foreign-born by 2008. In 2008, U.S.-born Latinxs and Blacks remained the most frequently arrested groups. Arrested rates declined for all groups over the 10-year time-frame, with far more sharper declines for foreign-born Latinxs compared to other group. Both studies by Miller and Tapia showed lower rates of JJS involvement for foreign-born versus U.S. born. Although foreign-born were less likely to be involved in the JJS, they were more likely to be convicted once involved in the system raising questions about differential sentencing based on nativity.

Karoly and colleagues (2016) conducted a study examining generational status with 323 Latinx youth (73% male; mean age 16 years) on probation. The study assessed the association of generational status and parental monitoring (i.e., who youth are spending time with, whereabouts, and family dinner frequency) on sexual risk behavior. Forty percent of the Latinx youth were first-generation (authors defined this as at least one parent born outside the mainland U.S.) and 59% were second-generation or beyond. The researchers found no significant main effects of generational status on sexual behavior. However, they found a significant interaction between generational status and parental monitoring in that parental monitoring was associated with less risky sexual behavior for second-generation and beyond youth but not for first-generation youth.

Social class is another important macrosystem context noted by researchers to play a role in both detainment and sentencing for Latinx youth (e.g., Bond-Maupin & Maupin, 1998; Rodriguez, 2007). The socioeconomic status of Latinx youth varies by generation and country of origin, with foreign-born Latinx youth more likely to have lived in poverty in comparison to third generation Latinx youth (Fry & Passel, 2009). Although, the first generation tends to suffer from financial stress at a higher rate, these youths appear to fare better on health indicators than later generations.

Bond-Maupin and Maupin (1998) analyzed the official records of 591 juveniles referred to juvenile probation and parole. This study took place in rural New Mexico, where Latinx youth were the majority and were also significantly over-represented in referrals to the JJS (92% of those referred were Latinx relative to 82% of the general population). In contrast, White youth were significantly under-represented (1.4% vs. 16.7%). The authors found that 63% of the Latinx sample that was referred to court came from a family income below the median national income.

Rodriguez (2007) conducted a hierarchical linear model and reviewed all delinquent physical referrals of juveniles (N = 3,060) who resided in Phoenix, Arizona from January 2000 to 2002 (i.e., police referrals where youths were screened for detention and had a detention hearing within the following 24 h). The review of physical referrals of juveniles was from the time of court processing to disposition (Latinxs were 63.6% of detained youth and 36.1% of non-detained youth). The researcher assessed whether juveniles' residential community characteristics mediated the effect of race/ethnicity on detention outcomes, for example producing lower detention rates for minority juveniles than for Whites who live in socially disorganized communities. The study showed that Latinxs were more likely than Whites to be detained. Neither the amount of crime in a neighborhood nor its socioeconomic classification explained the disparity. Rodriguez explained these findings through the lens of the political climate in Arizona, noting that Latinx youth may be racially/ethnically profiled.

6. Discussion

Latinx youths have some of the highest rates of arrest and incarceration in the U.S. when compared to other groups (Tapia, 2015). Developing effective strategies to prevent JJS involvement and address the behavioral health needs of Latinx youth requires that researchers, clinicians, and policymakers better understand the data related to Latinx youths' JJS experiences and behavioral health needs.

We used Ecodevelopmental Theory as a framework for conducting and organizing a narrative review of the literature addressing these topics. Specifically, we explored research addressing multiple contexts in which Latinx youths operate—including family and neighborhoods—to determine recommendations for developing and implementing culturally tailored, multisystemic interventions to prevent initial and continued justice involvement. The literature was organized according to the following ecological systems categories: microsystem, mesosystem, exosystem, and macrosystem. Our review revealed some studies at both the exosystem and macrosystem level; the larger body of literature would greatly benefit from exo- and macro-systemic focused studies that address the impact on this population of structural racism and multiple systems of oppression. Below, we summarize some of the narrative review findings and their implications.

Micro and Meso system findings and implications.

Our ET focused review of the literature allows us to integrate and propose proximal variables to inform future scholarship and interventions targeting Latinx youths in the JJS. Consistent with ET, we found protective and risk factors for Latinx youths in respect to JJS involvement in the literature. For instance, there are family variables that served as

protective factors against delinquency, including maternal and parental monitoring (Caldwell et al., 2006). Though this finding may not be consistent, nor unique to Latinx populations, given the cultural salience of collectivism and familism, it will be helpful to further assess cultural parenting frameworks that impact Latinx youth's engagement more specifically. This knowledge would also help to develop culturally informed preventative interventions for Latinx youths/families.

In addition, the literature reviewed revealed that Latinx youth also face specific risk factors that contribute to increased risk of involvement and entrenchment in the JJS. Particularly, Latinx youth in the JJS may engage in high rates of substance use (e.g., Winkelman et al., 2017; Teplin et al., 2007) and sexual risk behaviors (Johnston et al., 2016); however, they seldom receive specialty mental health and substance use referrals upon first contact with JJS. The literature also suggested that Latinx youths (with or without a mental health diagnosis) were sentenced to confinement at higher rates than their White peers, who may receive other services (White et al., 2006). Although some studies reviewed compared different ethnic groups, further research may identify mechanisms that explain intergroup differences in the JJS. Further, assessing socio-cultural factors more specifically impacting Latinx populations in the JJS, would inform increased supports for this overrepresented group.

Another important finding from our review of micro and mesosystems was the detrimental role of negative interactions with school and community officials. School structural variables and practices such as school to prison pipeline should be explored/assessed. Given the disparities in the JJS observed among different racial groups, it is possible that racially charged stereotypes increase the likelihood of JJS involvement of Latinx youth. Further research in this area to inform policy would be necessary, especially to assess the mechanisms that explain different experiences across racial groups. Further information in this area, will also allow for preventative and systemic interventions.

Exo and macro systems findings and implications.

When assessing the literature studied for this narrative review, a salient item was the consideration of generational status in the United States. Specifically, generational status may be a protective factor as immigrant Latinx youths were less represented in the JJS (Tapia, 2016). Of note, those who were immigrants and were involved in the JJS received sentencing at higher rates. The longer in the U.S., the poorer health outcomes and more representation in the JJS may also be observed (Miller, 2015). Further assessing factors contributing to these disparities and experiences would help to inform prevention efforts to support Latinx youth. In addition, increased information and data could be used for advocacy purposes to ensure Latinx youths' access to behavioral and mental health supports needed.

Limitations of the research available.

There is a dearth of available research pertaining to Latinx youth in the JJS; however, our literature search provided a review that covered all five intercepts of the JJS in relation to Latinx youth (Heilbrun et al., 2017). The majority of large-scale studies used were either

cross-sectional or retrospective and conducted either by self-reports or secondary data analyses.

We utilized one qualitative study that was conducted with a small number of participants residing in one city; this study provided an in-depth understanding of the sexual health concerns of Latinx females in the JJS (Johnston et al., 2016). We also noted that in the available body of research there is a lack of attention given to individual, familial, or cultural reasons as to why those who have spent less time in the U.S. are faring better. There is also limited literature examining intragroup pan-ethnic differences.

Consistent with the mesosystemic level of the ecological model, we also explored the transactional nature and interaction of the youths' various contexts as associated with different pathways leading to the JJS (e.g., family interactions, school environment, and cultural stress). While not explicitly stated as the focus, research with a developmental perspective may be helpful to informing clinical interventions with justice-involved populations thus warranting considering in future research.

Assessment needs and treatment implications.

There is a vast diversity of experiences within Latinx families, which is not consistently captured in the existing research on justice-involved Latinx youth. For instance, while researchers have begun to address ethnic differences among Latinx youth in the JJS, there was a dearth of research addressing the needs of sexual gender minority Latinx youth in the JJS or the intersectionality of these factors with race/ethnicity. The external stressors experienced by these youth due to their intersecting identities, such as lack of adequate care, systemic biases, put them at risk for behavioral health needs and seem to be associated with pathways related to the JJS. Practitioners may directly assess this population by exploring the impact of these intersecting identities (e.g., gender, race, sexual orientation) to improve understanding of their diverse experiences.

Given the school-to-prison pipeline, it is also imperative that educational practices are tailored to address the unique Latinx student needs and dismantle structural racism. Interventions should bring awareness to the iatrogenic effects of school discipline practices and their role in increasing contact with the JJS. Mental health, socio-emotional, and civic preventative efforts may be channeled through educational institutions as well. Strength-based interventions addressing cultural, family, and community factors may be of critical benefit for this population, especially when addressing generational differences and diversity within risk factors associated with JJS involvement (e.g., Miller, 2015; Tapia, 2015). In addition, although in our review we did not focus on treatment interventions, a past meta-analysis of treatment interventions showed that treatment effectiveness can be drastically better when targeting one ethnic group (Latinx youth/families; Griner & Smith, 2006). Notably, several studies have designed interventions for Latinx youth in the justice system (Prado et al., 2012; Darnell & Schuler, 2015; Hunter, Godley, Hesson-McInnis, & Rosse, 2014; and Burrow-Sanchez, Minami, & Hops, 2015).

7. Limitations of study and future directions in research

Our narrative review should be considered with some limitations. Findings from the 16 studies were streamlined to present data in a manner that allows the reader to understand the primary outcomes and is sufficient for journal limitations. Even within this constraint, we were able to meet our goal of presenting findings that are specific to Latinx youth, and we presented all relevant data. Lastly, we did not focus on treatment interventions as our interest was to identify factors in the external (physical and sociocultural) environment that promote or protect against JJS contact and poor behavioral health outcomes for Latinx justice-involved youth. Ultimately, our findings from the literature also provide meaningful suggestions for mental and behavioral health interventions. Congruent with ET and cultural strengths approaches, we propose that conducting studies utilizing qualitative, quantitative, and mixed method approaches will increase critical knowledge to understand and support this population. Specifically, qualitative research in which complex identities, trajectories, and experiences of youths in the JJS are explored will help inform interventions that advance new lines of research. In addition, most of the research reviewed emphasized deficit-oriented views of the population, in which the youths' cultural strengths as well as their experiences of discrimination and structural racism are not addressed. By promoting youths' voices and experiences, researchers will further our understanding of the complexity of these experiences. As well, quantitative research that incorporates different lenses on diversity (e.g., generational status, geographic differences) will help to further explore the impact of sociopolitical factors on this population and the diversity of experiences among Latinx subgroups. Also, quantitative research consistently reports generational differences in relation to recidivism; further research should address why these differences exist. Finally, more research is needed that addresses the multiple and intersecting identities of Latinx youth, to inform public policy stakeholders and treatment interventions that can reduce the disproportionate and overrepresentation of Latinx youth in the JJS.

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Fig. 1.
Ecological model.

Table 1

Database search terms.

Category/ ecological system	Database
Justice- involvement	Index and mesh terms
	Embase (‘justice involved’ OR ‘court involved’ OR ‘probation’/exp OR probation OR detained OR incarcerated OR ‘first contact’ OR ‘arrest’/exp OR arrest OR arrested OR ‘juvenile delinquency’/exp OR ‘juvenile delinquency’ OR ‘juvenile justice’/exp OR justice OR reoffending OR ‘detention’/exp OR detention OR adjudicated)
	PsycINFO (“justice involved” OR “justice-involved” OR “court involved” OR probation OR detained OR incarcerated OR “first contact” OR arrest OR arrested OR “juvenile delinquency” OR “juvenile justice” OR reoffending OR detention OR adjudicated)
	PubMed (justice involved OR justice-involved OR court involved OR probation OR detained OR incarcerated OR “first contact” OR arrest OR arrested OR “Juvenile Delinquency”.[Mesh] OR juvenile delinquency OR juvenile justice OR reoffending OR “detention” OR “adjudicated”)
Latinx	Embase (‘hispanic’/exp OR hispanic OR ‘latino’/exp OR latino OR ‘latina’/exp OR latina OR ‘hispanic american’ OR ‘mexican’/exp OR mexican OR ‘mexican american’/exp OR ‘mexican american’ OR ‘puerto rican’/exp OR ‘puerto rican’ OR ‘dominican american’ OR ‘chicano’/exp OR chicano OR ‘central american’/exp OR ‘central american’ OR ‘south american’/exp OR ‘south american’)
	PsycINFO (latino OR latina OR latinx OR hispanic OR “hispanic american” OR mexican OR “mexican american” OR “Dominican American” OR Chicano OR Chicana OR “Central American” OR “South American”)
	PubMed (latino OR latina OR latinx OR hispanic OR “Hispanic Americans”.[Mesh] OR “hispanic american” OR mexican OR Mexican-american OR “mexican american” OR “Puerto Rican” OR “Dominican American” OR Chicano OR Chicana OR “Central American” OR “South American”)
Age	Embase (‘juvenile’/exp OR juvenile OR ‘youth’/exp OR youth OR ‘adolescent’/exp OR adolescent OR teen OR teens OR ‘teenager’/exp OR teenager OR ‘adolescents’/exp OR adolescents OR ‘adulthood’/exp OR adulthood)
	PsycInfo (youth OR teen OR teens OR teenager OR teenagers OR adolescence OR adolescents OR adolescence)
	PubMed (youth OR teen OR teens OR teenager OR teenagers OR adolescence OR adolescents OR adolescence)
Behavioral risk	Embase (‘drug dependence’/exp OR ‘drug dependence’ OR ‘substance abuse’/exp OR ‘substance abuse’ OR ‘substance use’/exp OR ‘drug use’/exp OR ‘drug use’ OR ‘alcohol’/exp OR alcohol OR ‘alcoholism’/exp OR alcoholism OR ‘cannabis addiction’/exp OR ‘cannabis’/exp OR cannabis OR ‘marijuana’/exp OR ‘marijuana’/exp OR ‘opiate’/exp OR opiate OR ‘opioid’/exp OR ‘opioid’ OR ‘vaping’/exp OR ‘vaping’ OR ‘electronic cigarette’/exp OR ‘electronic cigarette’ OR ‘cocaine’/exp OR cocaine OR ‘methamphetamine’/exp OR methamphetamine OR ‘prescription drug misuse’/exp OR ‘prescription drug misuse’ OR ‘diazepam’/exp OR ‘diazepam’ OR ‘heroin’/exp OR ‘heroin’ OR ‘heroin dependence’/exp OR ‘heroin dependence’ OR ‘pain medication use’/exp OR ‘pain medication use’ OR ‘drug overdose’/exp OR ‘drug overdose’ OR ‘mental disease’/exp OR ‘mental disease’ OR ‘mental health’/exp OR ‘mental health’ OR ‘mental illness’/exp OR ‘psychopathology’/exp OR ‘psychopathology’ OR ‘psychiatric’/exp OR ‘psychiatric’)

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Category/ ecological system	Database	Index and mesh terms
Exosystem		(Family OR "Social Support" OR peers OR peer OR school OR parents OR parent OR "parental monitoring" OR mothers OR fathers OR caregiver OR guardians OR "foster care" OR neighborhood OR community OR "family bonding" OR "parental attachment" OR "family conflict" OR "parent-teen communication" OR supervision OR discipline OR gang OR gangs OR "gang involvement" OR church OR religion OR religiosity OR "peer delinquency" OR "peer support" OR "peer influence" OR "peer rejection" OR "parental rejection" OR "family rejection" OR mentor OR mentors OR mentorship OR "school achievement" OR homework OR truancy OR absenteeism OR "school performance" OR "sense of community" OR "teacher perceptions" OR expulsion OR "Adolescent Attitudes" OR "law enforcement" OR police)
	PubMed	("Family"[Mesh] OR Family OR "Social Support"[Mesh] OR peers OR peer OR school OR parents OR parent OR "parental monitoring" OR mothers OR fathers OR caregiver OR "Legal Guardians"[Mesh] OR guardians OR "Foster Home Care"[Mesh] OR "foster care" OR "Residence Characteristics"[Mesh] OR neighborhood OR community OR "family bonding" OR parental attachment OR "family conflict" OR parent-teen communication OR supervision OR discipline OR gang OR gangs OR "gang involvement" OR church OR "Religion"[Mesh] OR religion OR religiosity OR "peer delinquency" OR "peer support" OR "Peer Influence"[Mesh] OR "peer influence" OR "Rejection (Psychology)" OR "[Mesh] OR "peer rejection" OR "parental rejection" OR "family rejection" OR "Mentors"[Mesh] OR mentor OR mentors OR mentorship OR "school attendance" OR "school achievement" OR homework OR truancy OR absenteeism OR "school performance" OR "sense of community" OR "parental abuse" OR teacher perceptions OR "school suspension" OR expulsion OR "Adolescent Attitudes" OR "Law Enforcement"[Mesh] OR "law enforcement" OR "Police"[mesh] OR police)
	Embase	(‘job stress’/exp OR ‘job stress’ OR ‘cumulative stress’ OR ‘racism at work’ OR ‘racism’/exp OR racism OR ‘microaggression’/exp OR microaggressions OR ‘cultural factor’/exp OR ‘cultural factor’ OR ‘everyday discrimination’ OR ‘cultural stress’ OR ‘cultural safety’/exp OR ‘cultural safety’ OR ‘acculturative stress’/exp OR ‘acculturative stress’ OR ‘bi-cultural stress’ OR ‘neighborhood’/exp OR neighborhood OR ‘parental employment’ OR ‘parental support’/exp OR ‘parental support’ OR ‘social support’/exp OR ‘social support’ OR ‘social capital’/exp OR ‘poverty’/exp OR poverty OR ‘parental stress’/exp OR ‘parental stress’)
	PsycINFO	(“Occupational Stress” OR “cumulative stress” OR “work stress” OR “job stress” OR “racism at work” OR racism OR microaggression OR acculturation OR “everyday discrimination” OR “cultural stress” OR “acculturative stress” OR “bi-cultural stress” OR neighborhood OR “cultural factor” OR “parental employment” OR “parental support” OR “Social Support” OR “social capital” OR poverty OR “parental stress”)
Macrosystem	PubMed	(“Occupational Stress”[Mesh] OR “cumulative stress” OR “work stress” OR “job stress” OR “racism at work” OR “racism”[MeSH Terms] OR racism OR microaggression OR microaggressions OR acculturation OR “everyday discrimination” OR “cultural stress” OR “acculturative stress” OR “Bi-cultural stress” OR “Residence Characteristics”[Mesh] OR neighborhood OR “cultural factor” OR “parental employment” OR “parental supports” OR “Social Support”[Mesh] OR “social capital” OR “Poverty”[Mesh] OR “poverty” OR “parental stress”)
	Embase	(‘economics’/exp OR economics OR ‘economic aspect’/exp OR ‘economic aspect’ OR ‘broader microsystem’ OR ‘ecosystem’/exp OR ecosystem OR ‘cultural value’/exp OR ‘cultural value’ OR ‘access to care’/exp OR ‘access to care’ OR ‘access to health care’ OR ‘access to healthcare’ OR ‘health service’/exp OR ‘health service’ OR ‘sexual health’/exp OR ‘sexual health’ OR ‘access to mental health’ OR ‘health care disparity’/exp OR ‘health care disparity’ OR ‘drug dependence treatment’/exp OR ‘drug dependence treatment’ OR ‘community-supervised’ OR ‘residential commitment programs’ OR ‘diversion programs’ OR ‘direct file adult’ OR ‘juvenile probation’ OR ‘juvenile detention’)
	PsycINFO	(Economics OR economy OR “broader microsystem” OR ecosystem OR “cultural values” OR “access to health care” OR “access to healthcare” OR healthcare OR “health care” OR “sexual health” OR “access to mental health” OR “Minority Health” OR “Culturally Competent Care” OR “mental health disparities” OR “healthcare disparities” OR “Substance Abuse Treatment Centers” OR “community-supervised” OR “residential commitment programs” OR “diversion programs” OR “direct file adult” OR “juvenile probation” OR “juvenile detention”)
	PubMed	(“Economics”[Mesh] OR economy OR “broader microsystem” OR ecosystem OR “cultural values” OR “access to health care” OR “access to healthcare” OR healthcare OR “health care” OR “Sexual Health”[Mesh] OR “sexual health” OR “access to mental health” OR “Healthcare Disparities”[Mesh] OR “Minority Health”[Mesh] OR “Culturally Competent Care”[Mesh] OR “mental health disparities” OR “health disparities” OR “healthcare disparities” OR “Substance Abuse Treatment Centers” OR “community-supervised” OR “residential commitment programs” OR “diversion programs” OR “direct file adult” OR “juvenile probation” OR “juvenile detention”)

Category/ ecological system	<u>Database</u> Index and mesh terms
	“residential commitment programs” OR “Residential Treatment”[Mesh] OR “residential treatment” OR “diversion programs” OR “direct file adult” OR “juvenile probation” OR “juvenile detention”

KEY: Three separate searches in each of the three databases were conducted to focus on a specific part of the ecological system (i.e., microsystem, mesosystem, ecosystem, and macrosystem). Use all hedges (justice involvement, latinx, age, behavioral risk) from pages 1–2 under the subheading of the chosen database (e.g., Embase), plus the system (e.g., ‘micro/mesosystem’) hedge. For example, the micro/mesosystem search for Embase would begin with ‘family’/exp, the macrosystem search for Embase starts with ‘economics’/exp. To search the exosystem, use all hedges (justice involvement, latinx, age, behavioral risk) from pages 1–2 under the subheading of the database, plus the exosystem hedge. To search the macrosystem, use all hedges (justice involvement, latinx, age, behavioral risk) from pages 1–2 under the subheading of the database, plus the macrosystem hedge.

Table 2

Search results (N=16 papers) organized by ecodevelopmental theory framework.

Author	Publication year	Sample characteristics				Domain			Primary findings
		Age range	N	Percent latinx	Gender	Geographic region	JJS involvement		
Microsystem									
1. Winkelman, Binswanger, & Pinals	2017	12–17	1,174	100	35% female	United States	History of arrest, probation, or detention in past year	Individual: substance use and physical health disorders Microsystem: JJS (contact)	Latinx youth with prior justice-involvement, had high rates of substance use, physical health disorders when compared to Black and White, justice-involved youth
2. Teplin, Abram, McClelland, Dulcan, & Mericle	2002	10–18	1,829	29.7%	64% male ^a	Cook County, Illinois	Detained for pretrial	Individual: Behavioral health needs Microsystem: JJS (detainment)	Latinx females had high rates of unmet behavioral health needs at time of detainment
3. Johnston, Argueza, Graham, Bruce, Chamberlain, & Anoshiravani	2016	14–19	27	86%	100% female ^a	Northern California	Detained	Individual: Sexual health Microsystem: Health Services	High need for sexual healthcare; difficulty with accessing sexual healthcare
4. Caldwell, Silver, & Strada	2010	11–18	438	34%	65% male ^a	Western Region U.S.	Adjudicated	Individual: Behavioral risk (i.e., mental health and substance use) Microsystem: Family (composition and history of substance use)	Latinx youth in reconstituted families reported higher self-esteem; Latinx youth reported large amounts of cocaine use, low amounts of other drug use compared to Caucasian
5. Vidourek, King, Merianos, & Bartsch	2016	12–17	3,477	100%	49.9% male	U.S. (National)	History of arrest, probation, or parole	Individual: Behavioral risk (i.e., depression & substance use) Microsystems: Family (Parenting style), Peers (peer norms), School (school experience)	Positive predictors of legal involvement: Latinx ethnicity, male, 14 to 17 years of age, experiencing authoritarian parenting, negative school experience, and recent alcohol use
Mesosystem									
6. Dillon, Pantin, Robbins, & Szapocznick	2008	12–17	190	60%	85.8% Male ^a	Florida	Justice involved, substance use treatment, and community agencies	Individual: Behavioral risk (i.e., externalizing behavior, drug use, & sexual risk) Microsystems: Family (Family functioning) Mesosystem: Family-Peers (parental monitoring of peers)	More parental monitoring of peers did not mediate the association between family functioning and externalizing behavior
7. Caldwell, Beutler, Ross, & Silver	2006	13–17	95	100% (Mexican)	100% male	Southern California	On probation	Individual: Self-esteem, delinquency Mesosystem: Family-multiple systems (parent monitoring)	More parental monitoring associated with less delinquency

Author	Publication year	Sample characteristics				Domain		Primary findings	
		Age range	N	Percent latinx	Gender	Geographic region	JJS involvement		
8. Cavanagh & Cauffman	2015	13–17	155	100%	100% male	Southern California	History of previous arrest	Individual: Offending behavior Mesosystems: Family - JJS (parent perceptions of police)	Undocumented families have negative perceptions of police compared to documented families
Exo system									
9. Vazonyi & Chen	2010	8–18	2,754	55.4%	50.2% male ^a	Tucson, Arizona	History of status and delinquent offenses	Microsystem: JJS (entry risk) Exosystem: Discrimination in JJS (Disproportionate risk by ethnicity)	Biases by ethnicity/race; Latinx youth at greatest risk for entry into JJS
10. Feldstein Ewing, Venner, Mead, & Bryan	2011	14–17	651	41%	66% male ^a	Denver & Adams Counties, Colorado	On probation	Individual: Substance use Exosystem: Discrimination in JJS (Disproportionate contact by racial and ethnic minorities)	Racial and ethnic differences in the representation and patterns of substance use
11. White	2016	10–17	5,501	42%	Not specified	Maricopa, Arizona	Adjudicated	Individual: Mental health Microsystem: JJS (confinement) Exosystem: Discrimination in JJS (Differential sentencing by ethnicity)	Latinx youth had the lowest rates of mental health disorders but sentenced to confinement at the highest rates
Macrosystem									
12. Miller	2015	< 18	743	100%	Not specified	U.S. (National)	History of police contact, arrest, conviction,	Individual: Health outcomes Macrosystem: Generational status	More time spent in the U.S. is associated with negative health outcomes
13. Tapia	2016	12–16	1,412	100%	Not specified	U.S. National)	History of arrest	Microsystem: JJS (contact) Macrosystem: Generational status	U.S.-born Latinx youth were most frequently arrested group; foreign-born Latinx youth were convicted at a higher rate yet had less contact with JJS over time
14. Karoly, Callahan, Schmiede, & Feldstein Ewing	2016	13–18	323	100%	73% male	Southwest U.S.	On probation or alternative to incarceration	Individual: Sexual risk Mesosystem: Parental monitoring Macrosystem: Generational status	Second-generation and beyond, parental monitoring of whereabouts was associated with less risky sexual behavior
15. Bond-Maupin & Maupin	1998	10–17	591	92.2% Hispanic	71.7% male ³	Rural New Mexico	On probation and parole	Microsystem: Contact with JJS Macrosystem: Social class	Youth living in poverty were at increased risk for contact with JJS
16. Rodriguez	2007	13–17	3,060	53%	64% male ³	Phoenix, Arizona	History of detainment	Microsystem: Detainment Macrosystem: Social class	Latinx faced high rates of detainment regardless of SES

Note:

^aReported for total sample. Not specified for Latinx sample.