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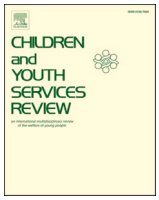

# Pre-adoption and post-adoption factors associated with internalizing problems in adopted children and adolescents: A systematic review

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ABSTRACT

This systematic review examined pre- and post-adoption factors associated with internalizing problems in adopted children and adolescents. Forty observational studies published between 1998 and 2024 were included, identified through searches across seven databases and screened according to PRISMA 2020 and JBI guidelines. Eligible studies assessed anxiety and depression with validated instruments in samples of adoptees under 18 years. Findings showed that pre-adoption risks, such as older age at placement, maltreatment, and institutional care, were associated with higher levels of internalizing symptoms. However, results were heterogeneous, with several studies reporting null or inconsistent effects. Post-adoption factors showed more consistent patterns: parental warmth, sensitivity, family cohesion, and open adoption communication emerged as protective, whereas parental depressive symptoms, parenting stress, rejection behaviors, and family conflict were linked to greater risk. Differences across reporters (parents, teachers, children) highlighted the importance of multi-informant assessment. Overall, the findings suggest that while pre-adoptive adversity contributes to vulnerability, modifiable family and contextual processes play a central role in shaping adoptees' emotional adjustment. These results underscore the developmental potential of adoption and emphasize the value of family-centered post-adoption supports. Future research should adopt longitudinal, multi-informant, and culturally diverse designs to clarify causal pathways and inform targeted interventions.

## 1. Introduction

In Spain, child adoption has been a phenomenon of considerable social relevance over the past two decades. Adoption rates peaked in 2004, with 828 domestic adoptions (Meil et al., 2023) and 5541 intercountry adoptions recorded (García López Hortelano and Mellado Peña, 2015). The most recent figures from the Spanish Ministry of Youth and Childhood indicate 555 domestic adoptions and 183 intercountry adoptions (Ministerio de Juventud e Infancia del Gobierno de España, 2024). Although intercountry adoptions have declined markedly, plausibly reflecting changes to international adoption policies and improvements in child protection systems, Spain remains among the countries with the highest cumulative numbers of adoptions worldwide. It is important to distinguish adoption from other forms of out-of-home care, such as institutional care or foster care, which are transitional arrangements. By contrast, adoption confers permanent legal and affective ties that are not time-limited (Jiménez-Morago et al., 2015). Parallel developments in other European contexts have likewise framed adoption as a preferred permanence option when children's needs cannot be met by their birth families (Department for Education, 2016).

With regard to mental health, research consistently shows that, as a group, adopted children and adolescents are at elevated risk for psychological and behavioral difficulties relative to non-adopted peers (Behle & Pinquart, 2016; Palacios & Brodzinsky, 2010). Documented difficulties include elevated rates of anxiety and depressive symptoms, social withdrawal, somatic complaints, attention problems, and, in some cases, peer relationship difficulties (Behle & Pinquart, 2016; Juffer & van IJzendoorn, 2005). However, findings from two *meta*-analyses suggest that most adopted children are well-adjusted (Bimmel et al., 2003; van IJzendoorn et al., 2005). Adoption is associated with substantial gains in physical, cognitive, and psychosocial development following early adversity (Palacios et al., 2011; Rutter, 1998; Segatto & Dal Ben, 2013). For example, research on post-institutionalized children has documented significant catch-up in height, weight, IQ scores, and attachment security after placement in stable adoptive families, particularly when adoption occurs earlier in development (van IJzendoorn &

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Juffer, 2006). Within this complex picture, internalizing problems—encompassing symptoms of anxiety and depression and related somatic complaints (Zahn-Waxler et al., 2000)—have emerged as a particularly salient outcome.

The psychological adjustment of adoptees reflects the interplay of multiple risks and resources operating before and after adoption. Pre-adoption factors include age at adoption; number, timing, and type of pre-adoption placements (institutional vs. family-based); exposure to maltreatment and neglect; and adverse prenatal influences such as maternal stress, substance use, or malnutrition (Marceau et al., 2016). Importantly, the developmental timing of these adversities appears to matter: earlier and more prolonged exposure to deprivation has been associated with more pronounced difficulties, whereas placement during infancy or early toddlerhood is often linked to more favorable trajectories (Rutter et al., 2007; van IJzendoorn et al., 2005). Findings from *meta*-analyses and large cohort studies indicate that these risks carry meaningful associations with later outcomes, but also that they do not fully account for variability in adoptees' trajectories, nor do they explain why many children with significant early adversity are nonetheless well adjusted (Bimmel et al., 2003; van IJzendoorn et al., 2005). This has prompted greater attention to post-adoption environments and mechanisms that could amplify or mitigate pre-adoptive risk.

Post-adoption factors encompass parent–child relational quality (e.g., warmth, sensitivity, satisfaction), parenting style and practices (authoritative, authoritarian, permissive; consistency of discipline), and adoption-related processes, including both communication about the adoption and contact with birth families (Duncan et al., 2021). In this regard, the literature distinguishes between structural openness, referring to the formal level of contact or information exchange with birth relatives (e.g., confidential vs. fully disclosed arrangements, direct or mediated contact), and communication openness, which concerns how openly and comfortably adoption-related topics are discussed within the adoptive family (Brodzinsky, 2006; Grotevant & McRoy, 1998). These processes coexist within the broader post-adoption environment and may shape children's adjustment through distinct relational pathways. Family functioning (cohesion, expressiveness, control, conflict, or sense of coherence) and broader contextual factors such as school climate and experiences of ethnic discrimination in intercountry adoptions further contribute to this post-adoptive ecology (Duncan et al., 2021).

Evidence suggests that these processes matter not only as correlates of current adjustment but also as potential pathways through which early adversity exerts its influence. For instance, via caregiving quality and family organization. More recent transdiagnostic models in developmental psychopathology further propose that childhood adversity may alter socioemotional and threat-related information processing and accelerate biological aging, whereas supportive caregiving buffers these challenges, underscoring the importance of considering developmental processes over time rather than relying exclusively on cross-sectional associations (McLaughlin et al., 2020a). Such models highlight potential mediating mechanisms—such as stress reactivity, emotion regulation, and family coherence—and moderators including age at placement, gender, and caregiving sensitivity (Ji et al., 2010).

At the same time, the adoption field is heterogeneous. Adoptions may be domestic or intercountry; children may be placed with relatives, former foster carers, or unrelated adopters; and cases frequently entail transracial or cross-cultural transitions. Children's ages at placement and their pre-adoptive histories vary widely, shaping both needs and outcomes. These sources of heterogeneity complicate synthesis and generalization. Moreover, methodological features—such as reliance on parent-reported measures, variation across instruments (e.g., CBCL [Child Behavior Checklist], SDQ [Strengths and Difficulties Questionnaire], BASC [Behavior Assessment System for Children], CDI [Children's Depression Inventory]), and differences in informants (parents, teachers, youth themselves)—introduce additional complexity through reporter effects. Longitudinal designs are unevenly represented, making it challenging to infer directionality or to test mechanisms that unfold across developmental periods. Prior broad-scope reviews have made important contributions (e.g., Duncan et al., 2021), yet the breadth of outcomes and predictors considered can dilute precision, limiting the direct applicability of findings to clinical and preventive contexts.

Against this backdrop, prior syntheses such as Duncan et al. (2021) have highlighted the importance of post-adoption processes—including parental warmth, attachment, communication, and family support—for adoptees' mental health. Yet these reviews have typically cast a wide net across diverse outcomes, from externalizing to academic adjustment, limiting the precision with which internalizing symptoms can be understood. Moreover, few have systematically integrated pre- and post-adoption factors within the same analytic frame, and even fewer have examined how study design features (e.g., reporter, measurement, longitudinal follow-up) shape conclusions. Although highly informative, Duncan and colleagues' review did not adhere to formal methodological frameworks such as PRISMA (Page et al., 2021) or the JBI Manual for Evidence Synthesis (Aromataris et al., 2024), which constrains transparency and reproducibility.

The present review seeks to address these gaps by concentrating specifically on internalizing problems—a clinically meaningful outcome encompassing anxiety, depression, and related emotional difficulties—and by jointly considering pre- and post-adoption factors. This integrated approach allows us to evaluate whether commonly cited pre-adoptive risks (e.g., institutional deprivation, maltreatment, older age at placement) show consistent associations with internalizing outcomes, to identify which post-adoptive processes (e.g., parent–child relationship quality, parenting style, family functioning, adoption-related communication, school and social context) are reliably linked to these problems, and to assess whether moderators and mediators provide plausible mechanisms explaining variability across adoptees.

In sum, this systematic review has three objectives: (1) to synthesize the evidence on pre-adoption factors and their associations with internalizing outcomes in adopted children and adolescents; (2) to examine post-adoption processes and their links to internalizing problems; and (3) to evaluate moderators, mediators, and reporter differences as potential explanatory mechanisms. By applying PRISMA guidelines (Page et al., 2021) and the JBI Manual for Evidence Synthesis (Aromataris et al., 2024), the review follows standardized procedures to ensure methodological transparency, strengthen confidence in the emerging patterns, and highlight directions for future research and intervention.

## 2. Method

### 2.1. Study design, protocol registration and reporting

This study is a systematic review of pre- and post-adoption factors associated with internalizing problems in adopted children and adolescents. A protocol was prepared a priori and registered in PROSPERO (https://www.crd.york.ac.uk/PROSPERO/view/CRD420251085905; registered 03 July 2025). Reporting follows PRISMA 2020 guidance (Page et al., 2021), and review methods draw on the JBI Manual for Evidence Synthesis (Aromataris et al., 2024). Because this review synthesizes published, de-identified data, ethical approval was not required.

### 2.2. Information sources and search strategy

The search was structured using the PEO framework (Population, Exposure, Outcome) recommended by the JBI for etiology/risk questions (Moola et al., 2020), defining the Population as adopted children and adolescents, Exposures as pre-adoption (e.g., institutional care, maltreatment/neglect, age at adoption, number/timing/type of placements) and post-adoption factors (e.g., parent–child relationship quality, warmth/sensitivity, parenting style and practices, adoption communication/openness and contact, family functioning and climate, school/social context), and the Outcome as internalizing problems

(anxiety and/or depression) assessed with validated instruments. Systematic searches covered Embase, Medline (via PubMed), APA PsycINFO, ERIC, PSICODOC, Scopus, and Web of Science Core Collection from database inception through February 2, 2025 (final search). No date limits were applied.Searches were restricted to English and Spanish peer-reviewed publications.

In line with the JBI three-step approach (Aromataris et al., 2024), we conducted initial exploratory searches to identify seed records and refine controlled vocabulary and free-text terms, developed a comprehensive strategy in a core database and iteratively tested key terms and Boolean/proximity operators, and then translated and adapted the strategy to each database's syntax (e.g., field tags and thesauri such as MeSH/Emtree). As an illustrative example, a simplified search strategy combined controlled vocabulary and free-text terms related to adoption (e.g., adopt* OR adoptee* OR "adopted child*"), internalizing problems (e.g., internaliz* OR anxi* OR depress*), and risk or protective factors (e.g., "risk factor*" OR "protective factor*" OR parent* OR famil*), using Boolean operators (AND/OR) to link concept blocks (i.e., adoption AND internalizing problems AND risk/protective factors) and applying truncation to capture term variants. Full database-specific strategies (syntax, coverage, and retrievals) are provided in the PROSPERO record and reproduced in Appendix A.

To complement database searching, we performed backward and forward citation tracking of included studies, screened reference lists of relevant reviews, ran targeted searches of dissertation/thesis repositories, and contacted study authors when clarification or missing data were identified. Consistent with the protocol, only published, peer-reviewed studies were eligible; grey literature was checked but did not yield eligible records.

### 2.3. Eligibility criteria

Eligibility criteria were defined according to the PEO (Population, Exposure, Outcome) framework recommended by the JBI manual for reviews of etiology and risk (Moola et al., 2020). This approach was chosen for its suitability in synthesizing evidence on risk and protective factors in complex psychosocial domains.

**Population (P).** Studies were included if participants were children or adolescents under 18 years of age who had already been placed with an adoptive family, regardless of the type of adoption (national, international, kinship, or non-kinship). Eligible studies required formal legal adoption, typically through adoption agencies or official child welfare systems. The focus was on the adoptive family context; therefore, children in temporary placements such as foster or institutional care without subsequent adoption, and adopted adults (>18 years), were excluded. No restrictions were applied with respect to country, cultural context, or socioeconomic background, provided that adoption had been formalized.

**Exposures (E).** Eligible exposures comprised pre-adoption factors (e.g., institutional care, age at adoption, number and timing of placements, maltreatment/abuse, early deprivation) and post-adoption factors (e.g., parental warmth and sensitivity, parenting style and practices, adoption communication or openness, family functioning and cohesion, school and social context, perceived discrimination). Excluded were studies focusing exclusively on biological or individual pre-adoption characteristics (e.g., cognitive deficits, prenatal drug exposure, or genetic vulnerability). These factors were not incorporated because the review aimed to synthesize variables directly tied to the adoption process and family environment. Including biological risk factors would have broadened the scope beyond what was methodologically manageable and less clinically actionable in the context of adoption-specific interventions.

**Outcome (O).** The primary outcome was internalizing problems restricted to anxiety and depression symptoms, measured with validated and reliable instruments (e.g., CBCL, SDQ, YSR, CDI). Studies that reported only related constructs (e.g., withdrawal, somatic complaints, general emotional problems) without anxiety or depression measures were excluded, to maintain specificity and comparability across studies.

**Study design.** Observational studies (cross-sectional, cohort, longitudinal; prospective or retrospective) were eligible. Intervention trials, case studies, and purely qualitative designs were excluded.

**Language and publication type.** Only peer-reviewed articles published in English or Spanish were included. Grey literature was screened but did not yield any eligible records.

### 2.4. Data management and study selection process

All retrieved records were imported into Rayyan, a web-based platform designed to support systematic review management (Ouzzani et al., 2016). Duplicate entries were automatically detected and manually verified before removal. The study selection process proceeded in two stages. First, titles and abstracts were screened independently by two reviewers (LQF and a trained research assistant). Disagreements at this stage were resolved by a third reviewer (TGL). Second, full-text screening was conducted independently by two reviewers (TGL and LQF), with uncertainties resolved through discussion and consensus.

### 2.5. Data extraction

Data from the included studies were extracted independently by two reviewers (TGL and LQF) using a structured Excel sheet specifically designed for this review. The extraction tool was piloted on approximately 10 studies and refined through discussion until consensus was reached. Discrepancies during extraction were infrequent and resolved through discussion between the two reviewers.

The following information was systematically extracted from each study: study identification (authors, year, journal, DOI), design, sample characteristics (size, age, sex, country, recruitment), pre-adoption and post-adoption factors examined, outcome instruments, direction of associations, moderators or mediators tested, and main findings. These categories were developed a priori drawing on systematic review guidelines (Aromataris et al., 2024; Higgins et al., 2024).

To minimize bias from incomplete reporting, study authors were contacted to request missing information. Specifically, the authors of six studies were approached. Two responded but could not provide the requested data due to the age of the study, three did not reply, and one (Hein et al., 2017) provided additional analyses. In this latter case, the authors disaggregated data from the internalizing behaviors subscale of the BASC, and shared the specific correlations between adoption-related factors and the scores of this subscale. When pre- or post-adoption variables were not reported in a study, these were coded as "N/R" (not reported).

### 2.6. Risk of bias assessment

The methodological quality of the included studies was appraised using the JBI Critical Appraisal Checklists for cross-sectional and cohort designs (Moola et al., 2020). These tools assess key domains such as representativeness of samples, clarity in the definition and measurement of exposures and outcomes, control of confounding variables, adequacy of follow-up (for cohort studies), and appropriateness of statistical analyses. The JBI checklists incorporate elements that overlap with other established frameworks, including the Mixed Methods Appraisal Tool (MMAT; Hong et al., 2018), ensuring consistency across heterogeneous observational designs while providing greater specificity for quantitative studies.

To operationalize the appraisal, an AI-based assistant (ChatGPT, GPT-5; OpenAI, 2025) generated an initial draft of the risk-of-bias assessments for all included studies ($n = 40$). This decision was informed by emerging empirical research suggesting that large language models

may demonstrate meaningful agreement with human reviewers in structured methodological appraisal tasks, such as risk-of-bias evaluations, although evidence remains preliminary and performance is variable (Rose et al., 2025). Given the still-developing evidence base regarding the reliability and appropriate role of AI in evidence synthesis, and in line with recommendations emphasizing transparency and explicit human oversight when integrating AI tools into review workflows (Gartlehner et al., 2025; Marshall & Wallace, 2019), the AI output was used exclusively as a structured preliminary coding aid. It did not replace human judgment. All final ratings were independently reviewed, validated and determined by the research team.

To validate this AI-generated draft, a random 20% subsample ($n$ = 8), stratified by design (cross-sectional vs. cohort), was then independently reappraised by two reviewers (TGL and LQF) to validate and, where necessary, correct the draft ratings. Inter-rater agreement was quantified at the item level using Cohen's κ for the JBI categories (Yes/No/Unclear), with "Not applicable" items excluded listwise (Fleiss et al., 2003). κ was interpreted using conventional benchmarks (0.61–0.80 = substantial; ≥0.81 = almost perfect; Landis & Koch, 1977). Agreement was almost perfect (κ = 0.874). On this basis, for the remaining studies, half of the AI appraisals were independently checked by a single reviewer; any item-level changes relative to the AI draft were cross-checked with the other reviewer to reach consensus. Full appraisal results are presented in Appendix B.

## 3. Results

### 3.1. Study selection

The database search yielded 1,134 records. After the removal of 312 duplicates, 822 unique records remained for screening. At the title and abstract stage, 676 records were excluded. The remaining 146 articles were retrieved for full-text review, of which 107 were excluded for the following reasons: (1) participants older than 18 years ($n$ = 2), (2) non-adopted samples ($n$ = 4), (3) articles not published in English or Spanish ($n$ = 6), (4) inaccessible full texts ($n$ = 21), (5) qualitative or non-observational designs ($n$ = 5), (6) studies not addressing exposures of interest ($n$ = 9), (7) studies not examining internalizing outcomes ($n$ = 50), and (8) studies not analyzing the association between exposures and outcomes ($n$ = 10). Additionally, one study was identified through citation searching and included. In total, 40 studies met the eligibility criteria and were included in the review. The complete selection process is illustrated in the PRISMA 2020 flow diagram (Fig. 1), and a detailed akdown of exclusion reasons is provided in Appendix C. The list of included studies is shown in Appendix D.

### 3.2. Study characteristics

Forty studies published between 1998 and 2024 were included. The detailed study characteristics are summarized in Table 1. Designs were predominantly cross-sectional ($n$ = 23), with 2 additional cross-sectional analyses conducted within longitudinal cohorts and 15 longitudinal studies. Across the 39 studies reporting sample size, the combined sample comprised 11,732 participants; and one study did not report sample size (Von Korff et al., 2006). Participant ages spanned from infancy (≈0.4 years) to 18 years, with many samples concentrated in school-age and adolescence (e.g., Aramburu et al., 2020; Pace et al., 2022). The proportion of females ranged widely—from 37.9% to 100% (Carrera et al., 2024; Tan & Marfo, 2006; Tan et al., 2012).

Most studies were conducted in North America ($n$ = 18, 45%) and Europe ($n$ = 15, 37.5%), with additional samples from South America ($n$ = 3, 7.5%) and Asia ($n$ = 2, 5%). Overall, 33 of the 40 studies (82.5%) were based in North American or European contexts. Samples were predominantly community-based. Thirty-six studies (90%) recruited participants exclusively from community settings (e.g., adoption agencies, registries, social or health services, adoptive family organizations), and two additional studies (5%) combined community and clinical recruitment (Miller et al., 2009; Tan et al., 2007). Only one study

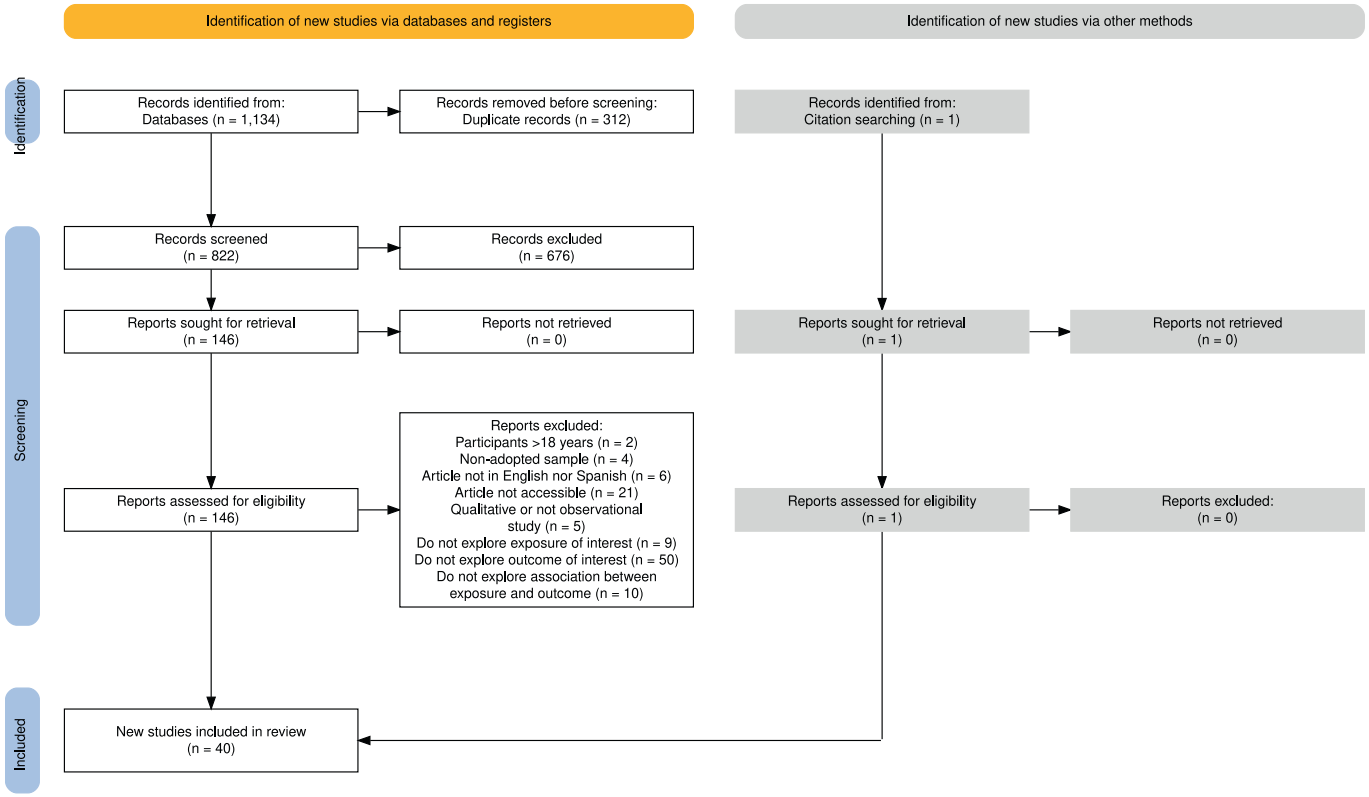


**Fig. 1.** PRISMA 2020 flow diagram of the study selection process.

**Table 1**
Characteristics of the studies included in the systematic review.

| Id | Authors (year) | Design | Sample size (*N*) | Study groups (*n*) | Age (*M* ± *SD*, min–max) | Sex (% female) | Country | Type of sample | Recruitment location | Sampling method |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Aramburu et al. (2020) | Cross-sectional | 100 | Single group | 13.9 ± 1.4 (12–18) | 57 | Spain | Community | Post-adoptive follow-up center | Non-probability (convenience sampling) |
| 2 | Carrera et al. (2024) | Cross-sectional | 66 | Single group | 15.8 ± 1.4 (12–18) | 37.9 | Spain | Community | Adoption agencies and institutions | Non-probability (convenience sampling) |
| 3 | Colvert et al. (2008) | Longitudinal | 217 | (G1) International (165)<br>(G2) Domestic (52) | (T1) 6<br>(T2) 11 | N/R | United Kingdom | Community | Adoption agencies | Non-probability (convenience sampling) |
| 4 | Finet et al. (2019) | Longitudinal | 92 | (G1) Post-institution (50)<br>(G2) Post-foster (42) | (T1) 1.29 ± 0.12<br>(T2) 1.63 ± 0.12<br>(T3) 10.08 ± 0.45 | 100 | Netherlands | Community | Adoption agencies | Non-probability (convenience sampling) |
| 5 | Fuentes Rebollo et al. (2004) | Cross-sectional | 56 | Single group | 12.9 (11–18) | 62.5 | España | Community | Child and Family Protection Services | Non-probability (convenience sampling) |
| 6 | Gagnon-Oosterwaal et al. (2012) | Longitudinal | 95 | Single group | 7.3 | 72.5 | Canada | Community | Hospital | Non-probability (convenience sampling) |
| 7 | Gleitman & Savaya (2011) | Cross-sectional | 169 | Single group | 15.43 ± 2.33 | 55 | Israel | Community | Adoption agencies | Non-probability (convenience sampling) |
| 8 | Goldberg & Smith (2013) | Longitudinal | 120 | (G1) Lesbian adoptive families (40)<br>(G2) Gay adoptive families (35)<br>(G3) Heterosexual adoptive families (45) | 2.33 ± 0.53 | 53 | United States | Community | Adoption agencies | Non-probability (convenience sampling) |
| 9 | Goldberg & Smith (2017) | Longitudinal | 174 | (G1) Lesbian adoptive families (54) agencies<br>(G2) Gay adoptive families (53)<br>(G3) Heterosexual adoptive mothers (38)<br>(G4) Heterosexual adoptive fathers (29) | (T1) 3.38 ± 0.53<br>(T2) 5.43 ± 0.52 | 47.1 | United States | Community | Adoption agencies | Non-probability (convenience sampling) |
| 10 | Groza & Ryan (2002) | Cross-sectional | 291 | (G1) International (230)<br>(G2) Domestic (61) | (G1) 6.01 ± 2.08<br>(G2) 5.92 ± 1.79 | (G1) 53<br>(G2) 44 | United States | Community | Adoption agencies | Systematic random sampling and convenience sampling |
| 11 | Groza et al. (2003) | Longitudinal | 96 | Single group | (T1) 6<br>(T2) 10 | 51 | United States | Community | Adoption agencies | Non-probability (convenience sampling) |
| 12 | Gunnar et al. (2007) | Cross-sectional | 1937 | (G1) Post-institution (899)<br>(G2) Comparison (1038) | (4–18) | 55 | United States | Community | Minnesota Department of Human Services (International Adoption Project Survey) | Non-probability (convenience sampling) |
| 13 | Hein et al. (2017) | Longitudinal | 74 | Single group | 5.17 ± 1.66 (2–9) | 54.1 | United States | Community | Community-based recruitment (support groups) | Non-probability (convenience sampling) |
| 14 | Hornfeck et al. (2019) | Cross-sectional | 172 | (G1) International (115)<br>(G2) Domestic (57) | 4.15 ± 2.04 (2–12) | 51.5 | Germany | Community | Adoption agencies | Non-probability (convenience sampling) |

(*continued on next page*)

**Table 1** (*continued*)

| Id | Authors (year) | Design | Sample size (*N*) | Study groups (*n*) | Age (*M* ± *SD*, min–max) | Sex (% female) | Country | Type of sample | Recruitment location | Sampling method |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | Ji et al. (2010) | Cross-sectional (from longitudinal sample) | 379 | (G1) No Risk<br>(G2) Pre only<br>(G3) Post only<br>(G4) Both pre and post | 15.5 ± 1.2 | 46.8 | United States | Community | California Long Range Adoption Study (CLAS), through social workers | Non-probability (convenience sampling) |
| 16 | Jiménez-Etcheverría & Palacios (2020) | Cross-sectional | 52 | Single group | 6.69 ± 1.52 (4–9) | 40.4 | Chile | Community | Non-governmental adoption agencies and the Chilean National Service for Minors (SENAME) | Non-probability (convenience sampling) |
| 17 | Keil et al. (2022) | Longitudinal | 10 | Single group | (T1) 2.29 ± 0.78<br>(T2) 4.25 ± 0.83 | 60 | United States | Community | Adoption agencies | Non-probability (convenience sampling) |
| 18 | Kernreiter et al. (2020) | Cross-sectional | 94 | (G1) 2–3 years (29)<br>(G2) 4–17 years (68) | 6.03 ± 3.65 (2–17) | 54 | Austria | Community | Adoption offices from the Austrian juvenile custody service | Non-probability (convenience sampling) |
| 19 | Laurent et al. (2013) | Longitudinal | 361 | Single group | (T1) 1.5<br>(T2) 2.25<br>(T3) 4.5 | 43 | United States | Community | Adoption agencies | Non-probability (convenience sampling) |
| 20 | Liskola et al. (2018) | Cross-sectional | 242 | Single group | 10.5 ± 1.15 | 51.65 | Finland | Community | Adoption organizations (Finnish Adoption study, FinAdo) | Non-probability (convenience sampling) |
| 21 | Merz & McCall (2010) | Cross-sectional | 1380 | (G1) Psychosocially deprived (342)<br>(G2) Various levels of deprivation (899)<br>(G3) Globally deprived (97)<br>(G4) Non-deprived (42) | (G1) 10.12 ± 3.35<br>(G2) 8.83 ± 3.47<br>(G3) 6.74 ± 1.89<br>(G4) 12.27 ± 3.42 | (G1) 56.1<br>(G2) 64.5<br>(G3) 55.7<br>(G4) 55.7 | United States | Community | Adoption agency | Non-probability (convenience sampling) |
| 22 | Miller et al. (2009) | Longitudinal | 50 | (G1) International adoption clinic patients (26)<br>(G2) Community adoptees (24) | 9.25 ± 0.75 (8–10) | 48 | United States | Community and clinical | International Adoption Clinic database, mailings, announcements, and advertisements in local adoption newsletters | Systematic random sampling and convenience sampling |
| 23 | Moretti et al. (2024) | Cross-sectional | 79 | (G1) Post-institution (41)<br>(G2) Post-foster (38) | 4.92 ± 1.52 (3–7) | 47.89 | Argentina | Community | Adoption agencies | Non-probability (convenience sampling) |
| 24 | Nichols et al. (2015) | Cross-sectional | 198 | (G1) Post-institution<br>(G2) Internationally adopted with no or limited institutionalization<br>(G3) Domestically adopted | 11.52 | 45.5 | United States | Clinical | Private outpatient mental health clinic in Minnesota | Non-probability (convenience sampling) |
| 25 | Pace et al. (2022) | Cross-sectional | 79 | Single group | 14.03 ± 2 (11–18) | 48.1 | Italy | Community | Public social health services for adoption, intercountry adoption agencies and associations for adoptive parents | Non-probability (convenience sampling) |
| 26 | Paine et al. (2020) | Longitudinal | 96 | Single group | (T1) 0.42<br>(T2) 1.75<br>(T3) 3<br>(T4) 4 | 49 | United Kingdom | Community | Local authority adoption teams (The Wales Adoption Cohort Study) | Probabilistic (cluster) |
| 27 | Paine et al. (2021) | Longitudinal | 96 | Single group | (T1) 0.42<br>(T2) 1.75<br>(T3) 3 | 49 | United Kingdom | Community | Local authority adoption teams (The Wales Adoption Cohort Study) | Probabilistic (cluster) |
| 28 | Pinderhughes (1998) | Cross-sectional | 53 | (G1) White late-adopted children<br>(G2) Black late-adopted children<br>(G3) White children adopted as infants | 12.4 ± 2.3 (8–15.9) | 38 | United States | Community | Adoption agencies | Non-probability (convenience sampling) |

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**Table 1** (*continued*)

| Id | Authors (year) | Design | Sample size (*N*) | Study groups (*n*) | Age (*M* ± *SD*, min–max) | Sex (% female) | Country | Type of sample | Recruitment location | Sampling method |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (G4) Black children adopted as infants | | | | | | |
| 29 | Reppold & Hutz (2009) | Cross-sectional | 68 | Single group | 14.4 ± 0.5 (14–15) | 51.5 | Brazil | Community | Adoption agencies | Non-probability (convenience sampling) |
| 30 | Rita et al. (2017) | Cross-sectional | 1265 | Single group | 7.5 ± 4.4 (1–18) | 56 | Finland | Community | Adoption organizations (Finnish Adoption study, FinAdo) | Non-probability (convenience sampling) |
| 31 | Santos-Nunes et al. (2022) | Cross-sectional | 135 | Single group | 8.47 ± 1.78 (6–12) | 50.4 | Portugal | Community | Professional and informal networks and national adoption agencies | Non-probability (convenience sampling) |
| 32 | Smith et al. (2018) | Longitudinal | 71 | Single group | (T1) 0.94 (T2) 7 (T3) 15 | 78.9 | Canada | Community | Adoption agencies | Non-probability (convenience sampling) |
| 33 | Tan & Marfo (2006) | Cross-sectional | 695 | (G1) Pre-schoolers (517) (G2) School-age (178) | (G1) 3.64 ± 1.27 (G2) 7.48 ± 1.38 (1.5–11) | 100 | United States | Community | Adoptive family organizations ("Families with Children from China" and "RaisingChinaChildren") | Non-probability (convenience sampling) |
| 34 | Tan & Marfo (2016) | Longitudinal | 1285 | Single group | N/R | 95 | United States | Community | Internet discussion groups and adoption agencies | Non-probability (convenience sampling) |
| 35 | Tan et al. (2012) | Cross-sectional (from longitudinal sample) | 133 | Single group | 5.2 ± 0.7 (2.3–5.9) | 100 | United States | Community | Internet discussion groups and adoption agencies | Non-probability (convenience sampling) |
| 36 | Tan et al. (2007) | Cross-sectional | 1096 | (G1) Special needs pre-schoolers (63) (G2) Special needs school-age (61) (G3) Non-special needs pre-schoolers (689) (G4) Non-special needs school-age (280) | (G1) 3.57 ± 1.21 (G2) 9.14 ± 2.21 (G3) 3.27 ± 1.28 (G4) 8.42 ± 1.8 (1.5–15.7) | 96.3 | United States, Canada, Australia, United Kingdom | Community and clinical | Internet discussion groups and adoption agencies | Non-probability (convenience sampling) |
| 37 | Tarroja (2015) | Cross-sectional | 32 | Single group | 12.84 (8–17) | 53.1 | Philippines | Community | Adoption agencies and adoptive family support group | Non-probability (convenience sampling) |
| 38 | Vantieghem et al. (2017) | Cross-sectional | 56 | Single group | 9.7 ± 2.2 | 64.3 | United States | Community | Adoption agencies, family networks and community flyers | Non-probability (convenience sampling) |
| 39 | Von Korff et al. (2006) | Longitudinal | N/R | (G1) Confidential adoption (G2) Ongoing fully disclosed | (4–12) | N/R | United States | Community | Adoption agencies | Non-probability (convenience sampling) |
| 40 | Wiik et al. (2011) | Cross-sectional | 68 | Single group | 9.6 ± 1.2 | 51.5 | United States | Community | Minnesota and Wisconsin International Adoption Project Registries | Non-probability (convenience sampling) |

(2.5%) relied exclusively on a clinical sample (Nichols et al., 2015). Recruitment was largely non-probabilistic. In particular, 36 studies (90%) used convenience sampling. Four studies (10%) employed more systematic approaches (Groza & Ryan, 2002; Miller et al., 2009; Paine et al., 2020; Paine et al., 2021), including systematic random sampling ($n = 2$) or probabilistic cluster sampling ($n = 2$). Several studies implemented explicit comparison groups, including international vs. domestic adoption ($n = 5$) (e.g., Groza & Ryan, 2002; Hornfeck et al., 2019), post-institution vs. post-foster ($n = 2$) (Finet et al., 2018; Moretti et al., 2024), parental sexual-orientation groupings ($n = 2$) (Goldberg & Smith, 2013, 2017), levels of early deprivation ($n = 1$) (Merz & McCall, 2010), special-needs vs. non-special-needs ($n = 1$) (Tan et al., 2007), or confidential vs. fully disclosed adoptions ($n = 1$) (Von Korff et al., 2006).

### 3.3. Risk of bias

Full result of the risk of bias assessment is shown in Appendix B. Among cross-sectional studies ($n = 24$), methodological quality was generally high. Compliance was universal for Item 2 (*Were the study subjects and the setting described in detail?*), Item 4 (*Were objective, standard criteria used for measurement of the condition?*), Item 7 (*Were the outcomes measured in a valid and reliable way?*), and Item 8 (*Was appropriate statistical analysis used?*)—all 100.0% Yes. High but not universal compliance was observed for Item 3 (*Was the exposure measured in a valid*

*and reliable way?*) at 91.7% Yes, Item 5 (*Were confounding factors identified?*) at 83.3% Yes, and Item 6 (*Were strategies to deal with confounding factors stated?*) at 79.2% Yes. The main shortfall concerned Item 1 (*Were the criteria for inclusion in the sample clearly defined?*), with 58.3% Yes, 37.5% No, and 4.2% Unclear.

For cohort designs ($n = 15$), several domains showed excellent performance: Item 3 (*Was the exposure measured in a valid and reliable way?*), Item 7 (*Were the outcomes measured in a valid and reliable way?*), Item 8 (*Was the follow-up time reported and sufficient to be long enough for outcomes to occur?*), and Item 11 (*Was appropriate statistical analysis used?*) were 100.0% Yes. Confounding was reasonably handled, with Item 4 (*Were confounding factors identified?*) at 86.7% Yes and Item 5 (*Were strategies to deal with confounding factors stated?*) at 80.0% Yes. A consistent limitation was Item 6 (*Were the groups/participants free of the outcome at the start of the study [or at the moment of exposure]?*), which was 0.0% Yes (100.0% No). Follow-up features were adequate but not universal: Item 9 (*Was follow-up complete, and if not, were the reasons for loss to follow-up described and explored?*) showed 66.7% Yes, 20.0% Unclear, 13.3% No, and Item 10 (*Were strategies to address incomplete follow-up utilized?*) showed 73.3% Yes, 20.0% Unclear, 6.7% No. Because most cohort studies were not two-group comparative designs, Item 1 (*Were the two groups similar and recruited from the same population?*) and Item 2 (*Were the exposures measured similarly to assign people to both exposed and unexposed groups?*) were Not applicable in 93.3% of studies; when applicable (6.7%), both were rated Yes.

### 3.4. Pre-adoption factors

The associations between pre- and post-adoption factors and internalizing symptoms are detailed in Table 2.

#### 3.4.1. Age at adoption

Associations with internalizing outcomes were mixed. Several studies reported no association (Gagnon-Oosterwaal et al., 2012; Gleitman & Savaya, 2011; Goldberg & Smith, 2017; Groza & Ryan, 2002; Hein et al., 2017; Miller et al., 2009; Rita et al., 2017; Tan & Marfo, 2016; Tan et al., 2007; Tarroja, 2015; Vantieghem et al., 2017). Others found higher internalizing/depression with older age at placement (variously >18, >24, >60 months) (Carrera et al., 2024 [parent-reported]; Groza et al., 2003; Gunnar et al., 2007; Ji et al., 2010; Jiménez-Etcheverría & Palacios, 2020; Merz & McCall, 2010; Paine et al., 2021; Reppold & Hutz, 2009; Tan et al., 2012), while one study found a negative association (older age linked to fewer internalizing; contrary to authors' interpretation) (Fuentes Rebollo et al., 2004). When examined by subscales or subgroups, effects were sometimes restricted (e.g., anxiety/depression among international adoptees) (Groza & Ryan, 2002) or did not persist long-term (Tan et al., 2012).

#### 3.4.2. Type and history of pre-adoption care

Findings on type of pre-adoption placement (institutional vs. non-institutional/foster/kinship) were heterogeneous. Four studies found no direct association with internalizing symptoms (Finet et al., 2019; Gleitman & Savaya, 2011; Gunnar et al., 2007; Reppold & Hutz, 2009), whereas others reported higher symptoms after institutional care relative to foster/non-institutional care (Groza & Ryan, 2002; Merz & McCall, 2010; Moretti et al., 2024; Pace et al., 2022). Regarding the number and duration of placements, several studies reported null associations (Gleitman & Savaya, 2011; Goldberg & Smith, 2013; Groza et al., 2003), while others found positive associations (Ji et al., 2010; Pace et al., 2022); notably, one study observed fewer internalizing symptoms with more placements, but only among children who spent <400 days in care (Paine et al., 2020). Additionally, two study reported that age at first institutionalization and length of institutionalization were not associated with internalizing symptoms (Hein et al., 2017; Vantieghem et al., 2017), whereas another found that post-institutionalized children reported increased symptoms with longer institutionalization (Wiik et al., 2011).

#### 3.4.3. National vs. international adoption

Comparisons of international and domestic adoptions were examined in six of the 40 included studies. Overall, findings generally favored domestic adoption. Only one study reported no differences between groups (Nichols et al., 2015), whereas others found higher levels of emotional or internalizing symptoms among internationally adopted children (Groza & Ryan, 2002; Hornfeck et al., 2019; Pace et al., 2022; Wiik et al., 2011), especially in older children with a history of institutional deprivation (Colvert et al., 2008).

#### 3.4.4. Deprivation, maltreatment and adverse experiences

Early deprivation was unrelated to internalizing problems in one study (Finet et al., 2019), while another found associations only among globally deprived children, but not among those with psychosocial deprivation or varying levels of deprivation (Merz & McCall, 2010). Maltreatment, abuse, and neglect were consistently linked to higher symptom levels across several studies (Ji et al., 2010; Tan & Marfo, 2006, 2016; Tan et al., 2007); in subsample analyses, sexual abuse also showed positive associations (Groza & Ryan, 2002). Composite indices of adverse childhood experiences were likewise positively associated with internalizing trajectories (Pace et al., 2022; Paine et al., 2020,2021).

### 3.5. Post-adoption factors

#### 3.5.1. Time since placement in adoptive home

Findings on the duration of time spent in the adoptive family were inconsistent across studies. One large study reported that a longer time since placement was unexpectedly associated with higher levels of internalizing problems (Gunnar et al., 2007). Three studies found no associations with parent-reported outcomes (Hein et al., 2017; Tan et al., 2012; Vantieghem et al., 2017). By contrast, evidence from a Spanish cohort indicated that more time in the adoptive home was linked to fewer internalizing symptoms, particularly in teacher reports (Jiménez-Etcheverría & Palacios, 2020). In another study, time since placement was examined as a moderator of the association between single-parent family structure and internalizing symptoms, but no significant moderation effects were found (Rita et al., 2017). Nonetheless, the study reported that children in single-parent families showed higher levels of internalizing symptoms (Rita et al., 2017).

#### 3.5.2. Adoption communication, openness and contact with biological families

Evidence on openness in adoption communication was limited but pointed to some protective associations. Most studies assessed communication openness within the adoptive family rather than structural openness arrangements. In one study, greater openness in adoptive families was inversely related to internalizing symptoms (Aramburu et al., 2020). Another study found that openness was linked to fewer self-reported, but not parent-reported, internalizing problems (Carrera et al., 2024). With respect to structural openness, findings were mixed. In Reppold and Hutz (2009), adolescents who had changed their first name reported higher depressive symptoms, whereas those who maintained contact with their birth families or who were informed about their adoption at an earlier age showed better adjustment. By contrast, Von Korff et al. (2006) found no differences in internalizing symptoms between adoptees in confidential versus fully disclosed contact arrangements. Similarly, adoption secrecy did not exert a direct effect on internalizing behaviors in Tarroja (2015), although it influenced outcomes indirectly through its association with family functioning.

#### 3.5.3. School and social context after adoption

Associations between the school and social environment and internalizing outcomes were mixed. Perceived discrimination was linked to

**Table 2**
Pre- and post-adoption factors associated with internalizing symptoms in adopted children and adolescents.

| Id | Authors (year) | Pre-adoption factor(s) | Post-adoption factor(s) | Instrument (primary outcome) | Direction (pre-adopt – primary) | Direction (post-adopt – primary) | Moderators/mediators tested? |
|---|---|---|---|---|---|---|---|
| 1 | Aramburu et al. (2020) | Maltreatment | Openness in adoption communication | YSR | 0 | – | N/R |
| 2 | Carrera et al. (2024) | Age at adoption | Openness in adoption communication<br>Perceived discrimination | SDQ-C \| SDQ-P | 0 \| + (> 24 months) | – \| 0<br>+ \| 0 | N/R |
| 3 | Colvert et al. (2008) | National vs. international adoption (with or without prior institutional care) | Bullying experiences<br>Family stress | *CBCL-P \| CBCL-T | + (only in 11-year-old: international institutional > international non-institutional > nationally adopted) | 0<br>0 | N/R |
| 4 | Finet et al. (2019) | Pre-adoption placement (type: institutions vs. foster care)<br>Early deprivation | Parental supportive presence<br>Parental intrussiveness<br>Parental efficacy | *CBCL-P | 0<br>0 | +<br>–<br>– | Post-adoption parenting variables (supportive presence, intrusiveness, parental efficacy) — Moderators of the association between pre-adoption experiences and internalizing symptoms (ns) |
| 5 | Fuentes Rebollo et al. (2004) | Age at adoption | N/R | CBLC-P | – | N/R | N/R |
| 6 | Gagnon-Oosterwaal et al. (2012) | Age at adoption | Child-related parenting stress<br>Role-related parenting stress | CBCL-P \| DI (self-reported) | 0 \| 0 | + \| +<br>+ \| 0 | N/R |
| 7 | Gleitman & Savaya (2011) | Age at adoption<br>Pre-adoption placement (number)<br>Pre-adoption placement (type: institutionalization yes/no)<br>Abuse | N/R | YSR | 0<br>0<br>0<br>0 | N/R | N/R |
| 8 | Goldberg & Smith (2013) | Age at adoption<br>Pre-adoption placement (number; institutional & family)<br>Abuse or neglect | Parental depression<br>Parental preparation for adoption<br>Parental relationship conflict | CBLC-P | 0<br>0<br>0 | +<br>0+ | N/R |
| 9 | Goldberg & Smith (2017) | Age at adoption | Parental involvement in school<br>Parent–teacher relationship quality<br>School-initiated contact with parents<br>Parent-initiated contact with school<br>Acceptance by peers' parents<br>Adoption-related difficulties at school<br>Parental input on classroom inclusivity<br>Parental depression<br>Parental relationship conflict | *CBLC-P | 0 | –<br>0<br>0<br>0<br>–+<br>+<br>+<br>0 | N/R |
| 10 | Groza & Ryan (2002) | Age at adoption<br>Pre-adoption placement (type: institutionalization yes/no) (national sample only)<br>National vs. international adoption<br>Physical abuse (international sample | Parent-child relationship satisfaction | CBLC-P | 0<br>+<br>+ (international, only severity)<br>0+ | – | N/R |

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**Table 2** (*continued*)

| Id | Authors (year) | Pre-adoption factor(s) | Post-adoption factor(s) | Instrument (primary outcome) | Direction (pre-adopt – primary) | Direction (post-adopt – primary) | Moderators/mediators tested? |
|---|---|---|---|---|---|---|---|
| | | only)<br>Sexual abuse (international sample only) | | | | | |
| 11 | Groza et al. (2003) | Age at adoption<br>Pre-adoption placement (duration) | Parent-child relationship satisfaction | *CBCL-P | +<br>0 | – | N/R |
| 12 | Gunnar et al. (2007) | Age at adoption (< vs. > 24 months)<br>Pre-adoption placement (type: institutional vs. parental, kinship or foster care) | Time since placement in adoptive home | CBLC-P | + (> 24 months)<br>0 | + | N/R |
| 13 | Hein et al. (2017) | Age at adoption<br>Institutionalization (age at first institutionalization)<br>Institutionalization (duration) | Time since placement in adoptive home<br>Positive parenting<br>Inconsistent discipline | BASC-P | 0<br>0<br>0 | 0<br>0<br>0 | N/R |
| 14 | Hornfeck et al. (2019) | National vs. international adoption | N/R | SDQ-P | + (international) | N/R | N/R |
| 15 | Ji et al. (2010) | Age at adoption (< vs. > 24 months)<br>Pre-adoption placement (number; institutional & family > 1 times)<br>Abuse | Family sense of coherence | DAYS (depression subscale) | + (> 24 months)<br>+<br>+ | – | Family sense of coherence — Moderator of the association between maltreatment and depressive symptoms (sig) |
| 16 | Jiménez-Etcheverría & Palacios (2020) | Age at adoption | Time since placement in adoptive home | SDQ-P \| SDQ-T | + \| + | 0 \| – | N/R |
| 17 | Keil et al. (2022) | N/R | Family cohesion<br>Family expressiveness<br>Family control<br>Family conflict<br>Family achievement orientation | CBLC-P | N/R | –<br>–<br>+<br>0<br>0 | |
| 18 | Kernreiter et al. (2020) | N/R | Parental mental health difficulties | CBLC-P | N/R | + | N/R |
| 1F9 | Laurent et al. (2013) | N/R | Parental depression (mother)<br>Parental depression (father) | CBLC-P (mother \| father) (internalizing subscale) | N/R | + \| 0<br>0 \| + | Child cortisol reactivity — Moderator of the association between paternal depressive symptoms and internalizing outcomes (sig) |
| 20 | Liskola et al. (2018) | N/R | Parental depression (mother)<br>Parental depression (father) | CDI | N/R | 0<br>+ | Maternal depressive symptoms — Moderator of the association between paternal depressive symptoms and child depression (ns) |
| 21 | Merz & McCall (2010) | Age at adoption<br>Pre-adoption placement (type: institutional yes/no)<br>Early deprivation (psychosocially deprived, various levels of the deprivation, globally deprived) | N/R | CBLC-P | + (> 18 months)+<br>+ | N/R | N/R |
| 22 | Miller et al. (2009) | Age at adoption | Child-related parenting stress<br>Role-related parenting stress | BASC-P | 0 | 0<br>0 | N/R |
| 23 | Moretti et al. (2024) | Pre-adoption placement (type: institutions vs. foster care) | N/R | PKBS | + (> institutional care) | N/R | N/R |
| 24 | Nichols et al. (2015) | National vs. international adoption (with or without prior institutional care) | N/R | CBLC-P | 0 | N/R | N/R |
| 25 | Pace et al. (2022) | Age at adoption<br>Pre-adoption placement (type: institutions vs. foster care) | N/R | CBLC-P | Only all combined+<br>+<br>+ | N/R | N/R |

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**Table 2** (*continued*)

| Id | Authors (year) | Pre-adoption factor(s) | Post-adoption factor(s) | Instrument (primary outcome) | Direction (pre-adopt – primary) | Direction (post-adopt – primary) | Moderators/mediators tested? |
|---|---|---|---|---|---|---|---|
| | | Pre-adoption placement (number; > 1 times)<br>National vs. international adoption<br>Abuse or neglect | | | + (international)+ | | |
| 26 | Paine et al. (2020) | Age at adoption<br>Pre-adoption placement (number)<br>Pre-adoption placement (time in care)<br>Pre-adoption placement (time with birth parents)<br>Adverse childhood experiences | N/R | SDQ-P | +<br>–<br>–+<br>+ | N/R | Days in care — Moderator of the association between number of pre-adoption placements and internalizing symptoms (ns) |
| 27 | Paine et al. (2021) | Preadoptive risk (age at placement, no. of days in care & no. of adverse life experiences) | Parental warmth | CBLC-P | + | – | Adoptive parental warmth — Moderator of the association between preadoptive risk and internalizing symptoms (trend, but ns) |
| 28 | Pinderhughes (1998) | Age at adoption (> 60 vs. 24 < months) | Parental satisfaction (mother)<br>Parental satisfaction (father) | CBLC-P | + | –<br>0 | N/R |
| 29 | Reppold & Hutz (2009) | Age at adoption<br>Pre-adoption placement (type: institutional yes/no) | Name change after adoption<br>Contact with biological parents<br>Age and source of adoption disclosure | CDI | 0<br>0 | ++<br>+ | N/R |
| 30 | Rita et al. (2017) | N/R | Single parenthood | CBLC-P | N/R | + (single parenthood) | Time since placement — Moderator of the association between single parenthood and internalizing symptoms (ns) |
| 31 | Santos-Nunes et al. (2022) | N/R | General parenting stress<br>Parental warmth<br>Parental rejection<br>Parental control | PANAS (negative affect subscale) | N/R | +<br>–+<br><br>0 | Attachment dimensions (secure and anxious/ambivalent) — Mediators of the associations between parenting variables and affective outcomes (indirect paths) (sig) |
| 32 | Smith et al. (2018) | Age at adoption | Child-related parenting stress<br>Role-related parenting stress | CBCL-P \| DI, DIA (self-reported) | 0 | + \| + (only adolescents)<br>+ \| 0 | N/R |
| 33 | Tan & Marfo (2006) | Age at adoption<br>Neglect | Child rejection toward the adoptive parent | CBLC-P | 0+ | + | Post-adoption rejection behaviors — Moderator of the association between age at adoption and internalizing symptoms (sig in school girls, not in preschool) |
| 34 | Tan & Marfo (2016) | Age at adoption<br>Neglect (signs/symptoms – sores, rashes, scars, lice…) | Child rejection toward the adoptive parent (avoidance)<br>Child rejection toward the adoptive parent (crying) | *CBCL-P | + (> 24 months vs 0–9 months)+ | ++ | N/R |
| 35 | Tan et al. (2012) | Age at adoption | Time since placement in adoptive home<br>Non-child-related stress<br>Authoritative parenting<br>Authoritarian parenting<br>Permissive parenting<br>Family stress | *CBCL-P | 0 | 0<br>+<br>0<br>+<br>+ | Parenting styles — Mediator of the association between non-child-related family stress and internalizing symptoms (sig) |
| 36 | Tan et al. (2007) | Age at adoption<br>Neglect (signs/symptoms – sores, rashes, scars, lice…) | Extended family support | CBLC-P | 0<br>+ | – (only in school-aged children) | N/R |

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**Table 2** (*continued*)

| Id | Authors (year) | Pre-adoption factor(s) | Post-adoption factor(s) | Instrument (primary outcome) | Direction (pre-adopt – primary) | Direction (post-adopt – primary) | Moderators/mediators tested? |
|---|---|---|---|---|---|---|---|
| 37 | Tarroja (2015) | Pre-adoption risk | Adoption secrecy<br>Family functioning | CBLC-P \| DAP-SPED (latent variable of internalizing symptoms) | 0 | 0<br>– | N/R |
| 38 | Vantieghem et al. (2017) | Age at adoption<br>Institutionalization (age at first institutionalization) | Time since placement in adoptive home<br>Parent-child relationship security | RCADS-P | 0<br>0 | 0<br>– | N/R |
| 39 | Von Korff et al. (2006) | N/R | Contact with biological parents (confidential vs. fully disclosed) | CBCL-P \| YSR | N/R | 0 \| 0 | N/R |
| 40 | Wiik et al. (2011) | Institutionalization (duration)<br>National vs. international adoption (with or without prior institutional care) | N/R | HBQ-P \| HBQ-C | +<br>+ (international) | N/R | N/R |

**Note.** BASC = *Behavioral Assessment System for Children* (Reynolds & Kamphaus, 2006); CBCL = *Child Behavior Checklist* (Achenbach & Rescorla, 2001); CDI = *Children's Depression Inventory* (Kovacs, 1978) ; DAYS = *Depression and Anxiety in Youth Scale* (Newcomer et al., 1995); DI = *Dominic Interactive* (Bergeron et al., 2010); DIA = *Dominic Interactive for Adolescents* (Bergeron et al., 2013); DAP-SPED = *Draw-A-Person: Screening Procedure for Emotional Disturbance* (Naglieri et al., 1991); EAS = *Emotional Availability Scales* (Biringen, 2000); HBQ = *MacArthur Health and Behavior Questionnaire* (Essex et al., 2002); no. = number; PANAS = *Positive and Negative Affect Schedule* (Santos-Nunes et al., 2017); PKBS = *Preschool and Kindergarten Behavior Scales* (Merrell, 2002); RCADS = Revised Child Anxiety and Depression Scale (Ebesutani et al., 2010); SDQ = *Strengths and Difficulties Questionnaire* (Goodman, 1997); T = teachers; P = parents; YSR = *Youth Self-Report* (Achenbach & Rescorla, 2001).

* Data from the last assessment were extracted in longitudinal studies.

Abbreviations ns and sig refer to non-significant and significant results, respectively.

When instruments included specific subscales (i.e., BASC, CBCL, DIA, SDQ, BASC, PKBS, YSR), data were extracted from the internalizing or emotional symptoms subscales.

more self-reported internalizing symptoms in one study (Carrera et al., 2024). In contrast, bullying experiences were not significantly associated with internalizing problems in a little cohort of mainly international adoptees (Colvert et al., 2008). School-related variables showed differential associations: greater parental involvement in school and acceptance by peers' parents were linked to fewer internalizing symptoms, whereas adoption-related difficulties at school and parental perception of classroom inclusivity were associated with higher levels (Goldberg & Smith, 2017).

### 3.5.4. *Parenting stress, satisfaction and parental mental health*

Parental depressive symptoms were consistently associated with children's internalizing outcomes. Several studies found positive associations with either parent- or child-reported symptoms (Goldberg & Smith, 2013, 2017; Laurent et al., 2013; Liskola et al., 2018), although effects varied by parent. For instance, adoptive mothers' depressive symptoms showed broad direct associations with internalizing problems reported by mothers (Laurent et al., 2013), whereas fathers' depressive symptoms were linked to child internalizing outcomes when reported by fathers (Laurent et al., 2013). Importantly, in Laurent et al. (2013), evening cortisol levels and cortisol variability significantly moderated the association between paternal depressive symptoms and child internalizing problems, such that paternal effects were stronger among children showing higher physiological reactivity. Liskola et al. (2018) found that paternal depressive symptoms were positively associated with child depression, whereas maternal depressive symptoms were not. Also, they tested whether maternal depressive symptoms moderated the association between paternal depressive symptoms and child depression; however, the interaction term was not statistically significant. Broader measures of parental mental health difficulties were also positively related to internalizing outcomes across child age and sex groups (Kernreiter et al., 2020).

Parenting stress was another factor linked to emotional adjustment. Maternal stress in both child- and role-related domains was associated with higher parent-reported internalizing symptoms, with child-related stress also predicting self-reported symptoms in adolescents (Gagnon-Oosterwaal et al., 2012; Smith et al., 2018). Other studies found that parenting stress was positively related to children's negative affect (Santos-Nunes et al., 2022), while non-child-related stress showed direct associations with internalizing problems (Tan et al., 2012). In Tan et al. (2012), parenting styles were tested as mediators of the association between non-child-related family stress and internalizing symptoms, and mediation effects were significant, indicating that parenting practices partially explained the impact of family stress on child outcomes. In contrast, one study reported only weak, non-significant links between child-related stress and internalizing after adjusting for covariates (Miller et al., 2009). Finally, parental satisfaction showed more selective associations. Greater maternal satisfaction with adoption was related to fewer internalizing symptoms, whereas paternal satisfaction showed no significant effects (Pinderhughes, 1998).

### 3.5.5. *Parent–child relationship and parenting practices*

Several studies highlighted the role of relational quality and parenting behaviors in adopted children's emotional adjustment. Parent–child relationship satisfaction and security consistently showed a negative association with internalizing outcomes, both in general internalizing scores and in anxiety/depression subscales (Groza & Ryan, 2002; Groza et al., 2003; Vantieghem et al., 2017). Finet et al. (2019) found that parental supportive presence was positively associated with internalizing symptoms, whereas parental intrusiveness and parental efficacy were negatively associated. In addition, post-adoption parenting variables were tested as moderators of the association between pre-adoption experiences and internalizing symptoms, but these interaction effects were not statistically significant. Positive parenting and inconsistent discipline showed no significant associations in one study (Hein et al., 2017). Parental warmth was negatively associated

with internalizing symptoms (Paine et al., 2021; Santos-Nunes et al., 2022). Paine et al. (2021) also found that the interaction between pre-adoptive risk and adoptive parental warmth but did not reach statistical significance. Santos-Nunes et al. (2022) found that parental rejection were positively associated with negative affect, whereas parental warmth was negatively associated and parental control showed no significant association. Attachment patterns (secure and anxious/ambivalent) were examined as intermediary mechanisms linking parenting variables to affective outcomes; parenting stress, warmth, and rejection were significantly associated with attachment dimensions, which in turn predicted emotional outcomes (Santos-Nunes et al., 2022).

Child rejection behaviors toward adoptive parents (avoidance and crying) were directly linked to greater internalizing symptoms (Tan & Marfo, 2006, 2016). In Tan & Marfo (2006), post-adoption rejection behaviors significantly moderated the association between age at adoption and internalizing problems, but only among school-aged girls, underscoring developmental and gender-specific effects. Regarding parenting styles, authoritarian and permissive parenting were associated with higher internalizing problems, whereas authoritative parenting showed no association (Tan et al., 2012). Finally, parental preparation for adoption was not related to internalizing symptoms (Goldberg & Smith, 2013).

#### 3.5.6. *Family functioning and environment*

Indicators of family functioning and the broader relational climate showed heterogeneous associations with internalizing outcomes. General family stress was unrelated to internalizing symptoms in one study (Colvert et al., 2008), while in another it was positively associated in younger children (Tan et al., 2012). Parental relationship conflict was linked to more internalizing problems in one study (Goldberg & Smith, 2013), but not in another that focused on older children (Goldberg & Smith, 2017). Family sense of coherence was negatively associated with depressive symptoms and significantly moderated the impact of maltreatment and pre-adoption adversity on depressive outcomes, attenuating the association between early risk and later depression (Ji et al., 2010). Specific dimensions of the family climate also showed differential results: family cohesion and expressiveness were associated with fewer internalizing symptoms, whereas family control predicted higher levels (Keil et al., 2022). In contrast, family conflict and achievement orientation were not significantly related to outcomes (Keil et al., 2022). Perceived overall family functioning emerged as a strong negative predictor of internalizing problems, outweighing the effects of pre-adoption risk or adoption secrecy (Tarroja, 2015). Finally, extended family support was associated with fewer internalizing symptoms, although this was only observed in school-aged children (Tan et al., 2007). Rita et al. (2017) additionally tested time since placement as a moderator of single parenthood effects on internalizing symptoms, but interaction effects were non-significant.

### 3.6. *Reporter differences (parent, teacher, self)*

Nine studies included more than one informant (Carrera et al., 2024; Colvert et al., 2008; Gagnon-Oosterwaal et al., 2012; Jiménez-Etcheverría & Palacios, 2020; Laurent et al., 2013 ; Smith et al., 2018; Tarroja, 2015; Von Korff et al., 2006; Wiik et al., 2011). Across studies comparing parent and youth self-reports, both convergence and divergence were observed. In Carrera et al. (2024), openness in adoption communication and perceived discrimination were associated with internalizing symptoms in child self-reports, whereas corresponding associations were null in parent reports, indicating reporter divergence. In Gagnon-Oosterwaal et al. (2012), child-related parenting stress was positively associated with internalizing symptoms in both parent and child reports, reflecting partial convergence; however, role-related parenting stress was associated only with parent-reported outcomes. Similarly, Smith et al. (2018) found that child-related parenting stress predicted parent-reported internalizing symptoms across age groups, whereas associations with self-reported symptoms were limited to adolescents. In contrast, Von Korff et al. (2006) reported convergent null findings, with no differences in internalizing symptoms across confidential versus fully disclosed adoption arrangements in either parent or adolescent reports. Wiik et al. (2011) further showed that duration of institutionalization and international adoption status were associated with higher internalizing symptoms in both parent and child reports, indicating cross-informant convergence for deprivation-related effects. Tarroja (2015) combined parent-reported data with a child-completed projective measure to model a latent internalizing construct. While adoption secrecy did not show a direct association with internalizing symptoms across measures, family functioning was negatively associated with the latent internalizing factor, suggesting that relational processes may operate consistently across informant perspectives when modeled jointly.

Studies incorporating teacher reports provided additional nuance. In Colvert et al. (2008), both parent and teacher ratings identified higher internalizing symptoms among internationally adopted children with prior institutional care, particularly at age 11. By contrast, Jiménez-Etcheverría and Palacios (2020) found that time since placement was unrelated to parent-reported internalizing symptoms but negatively associated with teacher-reported symptoms, indicating that teachers detected a protective association not reflected in parent ratings. Reporter-specific patterns were also evident within parent informants. Laurent et al. (2013) found that maternal depressive symptoms were associated with higher child internalizing symptoms as reported by mothers, whereas paternal depressive symptoms were linked to internalizing symptoms in father reports; and cortisol activity moderated these associations.

## 4. Discussion

This systematic review set out to examine pre- and post-adoption factors associated with internalizing problems in adopted children and adolescents, with particular attention to moderators, mediators, and reporter differences. By applying PRISMA guidelines (Page et al., 2021) and the JBI Manual for Evidence Synthesis (Aromataris et al., 2024), this review contributes a methodologically transparent and focused synthesis of 40 studies spanning more than two decades of research. The findings provide a nuanced picture of the interplay between pre-adoption adversity and post-adoption relational processes, underscoring both the vulnerabilities and the resilience of adopted children.

Consistent with developmental psychopathology models, early adversity emerged as a significant, though not deterministic, contributor to adoptees' internalizing difficulties. Older age at adoption, exposure to institutional care, maltreatment, and adverse childhood experiences were repeatedly linked with higher levels of anxiety and depression (Carrera et al., 2024; Gunnar et al., 2007; Ji et al., 2010; Merz & McCall, 2010; Pace et al., 2022). However, the evidence was far from uniform. Multiple studies reported null or inconsistent associations, particularly for age at placement (Gagnon-Oosterwaal et al., 2012; Hein et al., 2017; Rita et al., 2017; Vantieghem et al., 2017), and some even found counterintuitive patterns (Fuentes Rebollo et al., 2004). These discrepancies highlight that pre-adoption risks, while important, are insufficient to explain the variability in adoptees' emotional trajectories. This aligns with prior *meta*-analyses showing that pre-placement adversity elevates risk but does not preclude positive adjustment (Bimmel et al., 2003; Van IJzendoorn et al., 2005).

The heterogeneity of pre-adoption experiences—ranging from mild neglect to severe institutional deprivation—complicates synthesis and may partly explain inconsistent findings. Moreover, children's adaptive capacities and subsequent exposure to protective environments may attenuate the impact of early adversity (McLaughlin et al., 2020b). These results support the notion of differential susceptibility, whereby some children are more sensitive to both adverse and supportive environments (Belsky & Pluess, 2009).

Post-adoption processes showed more consistent and robust associations with internalizing problems. Across studies, parental warmth, sensitivity, and satisfaction were repeatedly associated with lower levels of anxiety and depression (Groza & Ryan, 2002; Paine et al., 2021; Santos-Nunes et al., 2022). Conversely, parenting stress, parental depressive symptoms, and rejection behaviors were strongly linked to higher internalizing difficulties (Gagnon-Oosterwaal et al., 2012; Laurent et al., 2013; Smith et al., 2018). These findings are consistent with broader literature highlighting the centrality of caregiving quality in adoptees' developmental outcomes (Palacios & Brodzinsky, 2010).

Family functioning also emerged as a key protective or risk factor. Greater family cohesion, expressiveness, and sense of coherence were associated with fewer internalizing symptoms, while family conflict and high control predicted greater difficulties (Ji et al., 2010; Keil et al., 2022). Importantly, these family-level factors sometimes outweighed pre-adoptive risks, underscoring the malleability of adoptees' emotional trajectories once in supportive environments (Tarroja, 2015). Evidence on adoption communication and openness, though more limited, suggested protective associations. Openness in adoptive families and early disclosure of adoption were linked to fewer internalizing symptoms (Aramburu et al., 2020; Carrera et al., 2024; Reppold & Hutz, 2009). Importantly, distinguishing between structural openness (e.g., contact arrangements with birth families, confidential vs. fully disclosed adoptions) and communication openness within the adoptive family helps clarify these findings. Across the reviewed studies, communication openness (referring to how openly and comfortably adoption-related topics were discussed) showed more consistent associations with internalizing outcomes. In contrast, structural openness arrangements per se did not uniformly predict adjustment (Von Korff et al., 2006), and in some cases appeared to operate indirectly through broader family processes (Tarroja, 2015). These results resonate with family systems perspectives, which emphasize that secrecy may undermine trust and family functioning, indirectly shaping children's adjustment (Brodzinsky, 2006). At the same time, findings were not always consistent across reporters or outcomes (Von Korff et al., 2006), suggesting that openness may exert its influence indirectly through relational processes.

Broader ecological factors, such as school and peer contexts, showed more mixed effects. Perceived discrimination was consistently associated with higher internalizing problems (Carrera et al., 2024), whereas peer acceptance and school involvement served as protective factors (Goldberg & Smith, 2017). Given that many adoptees navigate transracial and transnational transitions, these results highlight the importance of considering cultural and contextual dimensions alongside family-level processes.

Several studies moved beyond main effects to test conditional and explanatory mechanisms underlying adoptees' internalizing outcomes. Significant moderation effects indicated that associations between risk factors and emotional outcomes were not uniform across children. Family sense of coherence attenuated the association between maltreatment and depressive symptoms (Ji et al., 2010), suggesting that a coherent and structured family climate may buffer the impact of early adversity. Child cortisol reactivity strengthened the association between paternal depressive symptoms and child internalizing problems (Laurent et al., 2013), indicating that children with higher physiological sensitivity may be more vulnerable to parental affective difficulties. Post-adoption rejection behaviors also moderated the association between age at adoption and internalizing symptoms, such that older age at placement was more strongly associated with difficulties among school-aged girls exhibiting higher levels of rejection toward adoptive parents (Tan & Marfo, 2006). In addition to these conditional effects, mediational pathways were identified. Parenting styles partially explained the association between non-child-related family stress and internalizing symptoms (Tan et al., 2012), suggesting that broader family stress may affect children's adjustment through its influence on parenting practices. Similarly, attachment dimensions functioned as intermediary mechanisms linking parenting variables (e.g., warmth, rejection, parenting stress) to affective outcomes (Santos-Nunes et al., 2022). In this model, parenting behaviors were associated with secure and anxious/ambivalent attachment patterns, which in turn predicted positive and negative affect, highlighting the relational processes through which parenting may shape emotional functioning.

At the same time, several hypothesized buffering mechanisms were not supported, including maternal × paternal depressive symptoms (Liskola et al., 2018), preadoptive risk × parental warmth (Paine et al., 2021), post-adoption parenting × early deprivation (Finet et al., 2019), and time since placement × single parenthood (Rita et al., 2017). Together, this pattern suggests that while certain relational and child-specific characteristics condition vulnerability or resilience, not all theoretically plausible protective factors exert interactive effects. Overall, these findings underscore the importance of testing structured developmental models that incorporate both conditional (moderation) and explanatory (mediation) pathways to better understand variability in adoptees' internalizing adjustment.

Reporter differences also proved critical. Parent reports often highlighted associations with parental mental health and stress (Gagnon-Oosterwaal et al., 2012; Laurent et al., 2013; Smith et al., 2018), whereas child self-reports sometimes diverged, revealing either weaker or developmentally specific associations or greater sensitivity to internal experiences such as perceived discrimination and adoption-related communication (Carrera et al., 2024; Smith et al., 2018). Notably, convergence across informants was most evident for deprivation-related risks, including institutionalization and international adoption status (Colvert et al., 2008; Wiik et al., 2011), whereas parent-related variables were more consistently associated with parent-reported outcomes. Teacher reports provided complementary contextual information, occasionally detecting protective effects—such as reduced internalizing symptoms with longer time in adoptive homes—not reflected in parent ratings (Jiménez-Etcheverría & Palacios, 2020). Such variations across informants is consistent with longstanding evidence that parents, children, and teachers frequently provide non-overlapping evaluations of children's emotional and behavioral functioning (Achenbach et al., 1987; De Los Reyes & Kazdin, 2005). This findings underscore the importance of multi-informant approaches when assessing internalizing symptoms and adjustment in adopted populations.

The methodological appraisal indicated generally strong practices across included studies, particularly regarding valid measurement of exposures and outcomes and use of appropriate statistical analyses. However, notable weaknesses were also identified. Cross-sectional studies often lacked clearly defined inclusion criteria, limiting external validity. Cohort studies frequently failed to ensure that participants were free of the outcome at baseline, undermining causal inference. Moreover, attrition was incompletely addressed in several longitudinal designs. The predominance of convenience sampling and limited representation of non-Western contexts further restrict generalizability. These findings mirror concerns raised in broader adoption research (Duncan et al., 2021) and underscore the need for more rigorous and culturally diverse designs.

### 4.1. Limitations

Several limitations must be acknowledged. First, heterogeneity in study samples, measures, and analytic strategies precluded quantitative *meta*-analysis. Second, by restricting inclusion to peer-reviewed publications, the review may be subject to publication bias, although screening of grey literature did not yield additional eligible records. Third, despite contacting authors, missing data in some studies constrained synthesis. Fourth, while the review focused specifically on anxiety and depression, other related internalizing outcomes, such as somatic complaints or withdrawal, were excluded to preserve conceptual clarity. Finally, although the review applied robust appraisal tools, reliance on reported data inevitably entails some risk of

misclassification or incomplete assessment.

### 4.2. Implications for practice and policy

The findings have several implications for adoption practice and policy. Pre-adoption histories should be carefully considered in assessments and matching processes, but should not be viewed as deterministic indicators of maladjustment. Post-adoption support services should prioritize enhancing parental mental health, reducing parenting stress, and fostering warm, sensitive caregiving relationships. Training and support for adoptive parents regarding open communication about adoption may further promote children's adjustment. At the systemic level, schools and communities should be engaged as partners in supporting adoptees, particularly by addressing discrimination and promoting inclusive environments. These insights can inform post-adoption services, which remain underdeveloped in many contexts (Selwyn et al., 2015).

### 4.3. Future directions

Future research should address several gaps. Longitudinal designs are needed to trace developmental trajectories and test causal mechanisms linking pre-adoptive adversity and post-adoptive processes to internalizing outcomes. Multi-informant and multi-method approaches will help disentangle informant effects and provide a more comprehensive picture of adjustment. Greater cultural diversity in study samples is also essential, given the global nature of adoption. Additionally, studies should incorporate advanced analytic methods, such as network analysis or person-centered approaches, to examine complex interactions among risks and resources. Finally, future work should directly evaluate the effectiveness of post-adoption interventions targeting parental mental health, communication, and family functioning in reducing children's internalizing problems.

## 5. Conclusions

This systematic review demonstrates that while pre-adoption adversity contributes to adoptees' vulnerability to internalizing problems, post-adoption relational and contextual processes are central in shaping outcomes. Parental warmth, reduced parental stress and depression, cohesive family environments, and open communication about adoption consistently emerge as protective factors. These findings underscore that adoption represents not only a legal placement but also a developmental opportunity for recovery and resilience. By synthesizing evidence across diverse contexts, this review provides a foundation for strengthening post-adoption supports, advancing theory-driven research, and ultimately promoting the emotional well-being of adopted children and adolescents.

## 6. Declaration of generative AI

During the preparation of this work the author(s) used ChatGPT (GPT-5; OpenAI) in order to generate initial drafts of the methodological risk-of-bias appraisals. The technology was applied with human oversight and control: the authors carefully reviewed and edited the AI output (including independent checks of a stratified subsample) recognizing that AI can produce authoritative-sounding content that may be incorrect, incomplete, or biased. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the published article.

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## Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.childyouth.2026.108857.

## Data availability

Data will be made available on request.

## References

*References of articles included in the systematic review are marked with an asterisk*

Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA school-age forms & profiles*. University of Vermont, Research Center for Children, Youth, & Families.

Achenbach, T. M., McConaughy, S. H., & Howell, C. T. (1987). Child/adolescent behavioral and emotional problems: Implications of cross-informant correlations for situational specificity. *Psychological Bulletin, 101*(2), 213–232.

Aromataris, E., Lockwood, C., Porritt, K., Pilla, B., & Jordan, Z., (Eds.). (2024). *JBI manual for evidence synthesis*. doi: 10.46658/JBIMES-24-01.

**Aramburu, I., Pérez-Testor, C., Mercadal Rotger, J., Salamero Baró, M., Davins Pujols, M., Mirabent Junyent, V., … Brodzinsky, D. (2020). Influence of communicative openness on the psychological adjustment of internationally adopted adolescents. *Journal of Research on Adolescence, 30*(Suppl 1), 226–237. https://doi.org/10.1111/jora.12464

Behle, A. E., & Pinquart, M. (2016). Internalizing problems in adopted and nonadopted children and adolescents: A meta-analysis. *Aggression and Violent Behavior, 28*, 60–70. https://doi.org/10.1016/j.avb.2016.03.002

Belsky, J., & Pluess, M. (2009). Beyond diathesis stress: Differential susceptibility to environmental influences. *Psychological Bulletin, 135*(6), 885–908. https://doi.org/10.1037/a0017376

Bergeron, L., Berthiaume, C., St-Georges, M., Piché, G., & Smolla, N. (2013). Reliability, validity, and clinical use of the Dominic Interactive: A DSM-based, self-report screen for school-aged children. *The Canadian Journal of Psychiatry, 58*(8), 466–475. https://doi.org/10.1177/070674371305800805

Bergeron, L., Smolla, N., Valla, J.-P., et al. (2010). Psychometric properties of a pictorial instrument for assessing psychopathology in youth aged 12 to 15 years: The Dominic Interactive for Adolescents. *The Canadian Journal of Psychiatry, 55*(4), 211–221. https://doi.org/10.1177/070674371005500404

Bimmel, N., Juffer, F., van IJzendoorn, M. H., & Bakermans-Kranenburg, M. J. (2003). Problem behavior of internationally adopted adolescents: A review and meta-analysis. *Harvard Review of Psychiatry, 11*(2), 64–77. https://doi.org/10.1080/10673220303955

Biringen, Z. (2000). *Emotional availability: Conceptualization and research findings. American Journal of Orthopsychiatry, 70*(1), 104–114.

Brodzinsky, D. (2006). Family structural openness and communication openness as predictors in the adjustment of adopted children. *Adoption Quarterly, 9*(4), 1–18. https://doi.org/10.1300/J145v09n04_01

*Carrera, P., Román, M., Cáceres, I., & Palacios, J. (2024). Internalizing problems in adopted eastern European adolescents: The role of the informant, early adversity and post-adoption processes. *Psicothema, 36*(2), 103–112. https://doi.org/10.7334/psicothema2023.152

*Colvert, E., Rutter, M., Beckett, C., Castle, J., Groothues, C., Hawkins, A., Kreppner, J., O'connor, T., Stevens, S., & Sonuga-Barke, E. J. (2008). Emotional difficulties in early adolescence following severe early deprivation: Findings from the English and Romanian adoptees study. *Development and Psychopathology, 20*(2), 547–567. https://doi.org/10.1017/s0954579408000278

De Los Reyes, A., & Kazdin, A. E. (2005). Informant discrepancies in the assessment of childhood psychopathology: A critical review, theoretical framework, and recommendations for further study. *Psychological Bulletin, 131*(4), 483–509. https://doi.org/10.1037/0033-2909.131.4.483

Department for Education. (2016). *Adoption: A vision for change*. DfE. (Policy paper).
Duncan, C., Grant, M., Jones, T., & Steele, H. (2021). Adopted children's mental health and wellbeing: A systematic review of post-adoption influences. *Adoption & Fostering, 45*(4), 370–389. https://doi.org/10.1177/03085759211058358
Ebesutani, C., Bernstein, A., Nakamura, B. J., Chorpita, B. F., & Weisz, J. R. (2010). A psychometric analysis of the revised Child anxiety and Depression Scale—Parent Version in a clinical sample. *Journal of Abnormal Child Psychology, 38*, 249–260. https://doi.org/10.1007/s10802-009-9363-8
Essex, M. J., Boyce, W. T., Goldstein, L. H., Armstrong, J. M., Kraemer, H. C., Kupfer, D. J., & MacArthur Assessment Battery Working Group (2002). The confluence of mental, physical, social, and academic difficulties in middle childhood. II: developing the Macarthur Health and Behavior Questionnaire. *Journal of the American Academy of Child and Adolescent Psychiatry*, *41*(5), 588–603. Doi: 10.1097/00004583-200205000-00017.
*Finet, C., Vermeer, H. J., Juffer, F., Bijttebier, P., & Bosmans, G. (2019). Adopted children's behavioral adjustment over time: Pre-adoption experiences and adoptive parenting. *The Journal of Early Adolescence, 40*(4), 453–479. https://doi.org/10.1177/0272431619858408
Fleiss, J. L., Levin, B., & Paik, M. C. (2003). *Statistical methods for rates and proportions* (3rd ed.). Wiley.
*Fuentes Rebollo, M. J., Molina, M. F., & Muñoz, I. M. B. (2004). Problemas de conducta, evaluados con el CBCL, en adolescentes adoptados Españoles [Behaviour problems, assessment with CBCL, in spanish adopted adolescents]. *Análisis y Modificación de Conducta, 30*(133), 663–691. https://psycnet.apa.org/record/2005-03654-002.
*Gagnon-Oosterwaal, N., Cossette, L., Smolla, N., Pomerleau, A., Malcuit, G., Chicoine, J.-F., Belhumeur, C., Jéliu, G., Bégin, J., & Séguin, R. (2012). Pre-adoption adversity, maternal stress, and behavior problems at school-age in international adoptees. *Journal of Applied Developmental Psychology, 33*(5), 236–242. https://doi.org/10.1016/j.appdev.2012.04.002
García López Hortelano, M., & Mellado Peña, M. J. (2015). International adoption in Spain: Current situation. *Anales de Pediatría (English Edition), 82*(5), 291–292. https://doi.org/10.1016/j.anpede.2015.05.001
Gartlehner, G., Nussbaumer-Streit, B., Hamel, C., Garritty, C., Griebler, U., King, V. J., Devane, D., & Kamel, C. (2025). Responsible integration of artificial intelligence in rapid reviews: A position statement from the Cochrane rapid reviews methods group. *Cochrane Evidence Synthesis and Methods, 3*(6), Article e70063. https://doi.org/10.1002/cesm.70063
*Gleitman, I., & Savaya, R. (2011). Adjustment of adolescent adoptees: The role of age of adoption and exposure to pre-adoption stressors. *Children and Youth Services Review, 33*(5), 758–766. https://doi.org/10.1016/j.childyouth.2010.11.020
*Goldberg, A. E., & Smith, J. Z. (2013). Predictors of psychological adjustment in early placed adopted children with lesbian, gay, and heterosexual parents. *Journal of Family Psychology, 27*(3), 431–442. https://doi.org/10.1037/a0032911
*Goldberg, A. E., & Smith, J. Z. (2017). Parent-school relationships and young adopted children's psychological adjustment in lesbian-, gay-, and heterosexual-parent families. *Early Childhood Research Quarterly, 40*, 174–187. https://doi.org/10.1016/j.ecresq.2017.04.001
Goodman, R. (1997). The strengths and difficulties questionnaire: A research note. *Journal of Child Psychology and Psychiatry, 38*(5), 581–586. https://doi.org/10.1111/j.1469-7610.1997.tb01545.x
Grotevant, H. D., & McRoy, R. G. (1998). *Openness in adoption: Exploring family connections*. Sage Publications.
Groza, V., & Ryan, S. D. (2002). Pre-adoption stress and its association with child behavior in domestic special needs and international adoptions. *Psychoneuroendocrinology, 27*(1–2), 181–197. https://doi.org/10.1016/s0306-4530(01)00044-0
*Groza, V., Ryan, S. D., & Cash, S. J. (2003). Institutionalization, behavior and international adoption: Predictors of behavior problems. *Journal of Immigrant Health, 5*(1), 5–17. https://doi.org/10.1023/a:1021096028003
*Gunnar, M. R., van Dulmen, M. H., & International Adoption Project Team. (2007). Behavior problems in postinstitutionalized internationally adopted children. *Development and Psychopathology, 19*(1), 129–148. https://doi.org/10.1017/S0954579407070071
*Hein, S., Tan, M., Rakhlin, N., Grigorenko, E. L., & Hart, L. A. (2017). Psychological and sociocultural adaptation of children adopted from Russia and their associations with pre-adoption risk factors and parenting. *Journal of Child and Family Studies, 26*(10), 2669–2680. https://doi.org/10.1007/s10826-017-0782-9
Higgins, J. P. T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (Eds.). (2024). *Cochrane handbook for systematic reviews of interventions* (Version 7). Cochrane. https://training.cochrane.org/handbook.
Hong, Q. N., Fàbregues, S., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P., & Pluye, P. (2018). *Mixed Methods Appraisal Tool (MMAT) version 2018: User guide*. *McGill University*. http://mixedmethodsappraisaltoolpublic.pbworks.com/.
*Hornfeck, F., Bovenschen, I., Heene, S., Zimmermann, J., Zwönitzer, A., & Kindler, H. (2019). Emotional and behavior problems in adopted children: The role of early adversities and adoptive parents' regulation and behavior. *Child Abuse & Neglect, 98*, Article 104221. https://doi.org/10.1016/j.chiabu.2019.104221
*Ji, J., Brooks, D., Barth, R. P., & Kim, H. (2010). Beyond preadoptive risk: The impact of adoptive family environment on adopted youth's psychosocial adjustment. *The American Journal of Orthopsychiatry, 80*(3), 432–442. https://doi.org/10.1111/j.1939-0025.2010.01046.x
*Jiménez-Etcheverría, P., & Palacios, J. (2020). Psychological adjustment, attachment difficulties, and perceptions of family relationships in adopted and institution-reared children: The case of Chile. *Children and Youth Services Review, 116*, Article 105102. https://doi.org/10.1016/j.childyouth.2020.105102
Jiménez-Morago, J. M., Palacios, J., & Paniagua, C. (2015). *Rupturas en adopción y acogimiento familiar en Andalucía: Incidencia, factores de riesgo, procesos e intervención* (Informe técnico). *Junta de Andalucía.*
Juffer, F., & van Ijzendoorn, M. H. (2005). Behavior problems and mental health referrals of international adoptees: A meta-analysis. *Journal of the American Medical Association, 293*(20), 2501–2515. https://doi.org/10.1001/jama.293.20.2501
*Keil, M. F., Leahu, A., Rescigno, M., Myles, J., & Stratakis, C. A. (2022). Family environment and development in children adopted from institutionalized care. *Pediatric Research, 91*(6), 1562–1570. https://doi.org/10.1038/s41390-020-01325-1
*Kernreiter, J., Klier, C., Zeiler, M., Huscsava, M. M., Fiala, C., & Felnhofer, A. (2020). The anonymously adopted child: Impact of age and parental psychopathology on adoptees' mental health. *Children and Youth Services Review, 119*, Article 105672. https://doi.org/10.1016/j.childyouth.2020.105672
Kovacs, M. (1978). *Children's Depression Inventory (CDI)* [Database record]. *APA PsycTests*. https://doi.org/10.1037/t19482-000
*Laurent, H. K., Leve, L. D., Neiderhiser, J. M., Natsuaki, M. N., Shaw, D. S., Fisher, P. A., Marceau, K., Harold, G. T., & Reiss, D. (2013). Effects of parental depressive symptoms on child adjustment moderated by hypothalamic pituitary adrenal activity: Within- and between-family risk. *Child Development, 84*(2), 528–542. https://doi.org/10.1111/j.1467-8624.2012.01859.x
*Liskola, K., Raaska, H., Lapinleimu, H., & Elovainio, M. (2018). Parental depressive symptoms as a risk factor for child depressive symptoms: Testing the social mediators in internationally adopted children. *European Child & Adolescent Psychiatry, 27*(12), 1585–1593. https://doi.org/10.1007/s00787-018-1154-8
Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33*(1), 159–174. https://doi.org/10.2307/2529310
Marceau, K., De Araujo-Greecher, M., Miller, E. S., Massey, S. H., Mayes, L. C., Ganiban, J. M., & Leve, L. D. (2016). The Perinatal Risk Index: Early risks experienced by domestic adoptees in the United States. *PLoS One, 11*(3), Article e0150486. https://doi.org/10.1371/journal.pone.0150486
Marshall, I. J., & Wallace, B. C. (2019). Toward systematic review automation: A practical guide to using machine learning tools in research synthesis. *Systematic Reviews, 8*(1), 163. https://doi.org/10.1186/s13643-019-1074-9
McLaughlin, K. A., Colich, N. L., Rodman, A. M., & Weissman, D. G. (2020). Mechanisms linking childhood trauma exposure and psychopathology: A transdiagnostic model of risk and resilience. *BMC medicine, 18*(1), 96. https://doi.org/10.1186/s12916-020-01561-6
McLaughlin, K. A., Weissman, D., & Bitrán, D. (2020). Childhood adversity and neural development: A systematic review. *BMC Medicine, 18*, 320. https://doi.org/10.1186/s12916-020-01790-9
Meil, G., Rogero-García, J., & Díaz-Gandasegui, V. (2023). Family diversity in Spain. In *The changing faces of families* (pp. 122–141). doi: 10.4324/9781003193500-7.
Merrell, K. W. (2002). *Preschool and Kindergarten Behavior Scales* (2nd ed.). PRO-ED.
*Merz, E. C., & McCall, R. B. (2010). Behavior problems in children adopted from psychosocially depriving institutions. *Journal of Abnormal Child Psychology, 38*(4), 459–470. https://doi.org/10.1007/s10802-009-9383-4
*Miller, L., Chan, W., Tirella, L., & Perrin, E. (2009). Outcomes of children adopted from Eastern Europe. *International Journal of Behavioral Development, 33*(4), 289–298. https://doi.org/10.1177/0165025408098026
Ministerio de Juventud e Infancia del Gobierno de España. (2024). *Boletín de datos estadísticos de medidas de protección a la infancia, n° 26. Datos 2023 (provisionales)*. Observatorio de Infancia. https://observatoriodelainfancia.mdsocialesa2030.gob.es.
Moola, S., Munn, Z., Tufanaru, C., Aromataris, E., Sears, K., Sfetcu, R., … Mu, P.-F. (2020). Chapter 7: Systematic reviews of etiology and risk. En E. Aromataris & Z. Munn (Eds.), *JBI manual for evidence synthesis*. JBI. Doi: 10.46658/JBIMES-20.
*Moretti, M. P., Ibarra Ureta, N. L. E., & Torrecilla, N. M. (2024). Habilidades sociales y problemas de conducta en niños y niñas con historial de institucionalización y cuidado en hogares de acogida [Social skills and behavioral problems in children with a history of institutionalization and foster care]. *Acta Colombiana de Psicología, 27*(2), 1–17. https://doi.org/10.14718/ACP.2024.27.2.1
Naglieri, J. A., McNeish, T. J., & Bardos, A. N. (1991). *Draw-A-Person: Screening Procedure for Emotional Disturbance (DAP:SPED)*. PRO-ED.
Newcomer, P. L., Barenbaum, E., & Bryant, B. R. (1995). *Depression and Anxiety in Youth Scale (DAYS)*. PRO-ED.
*Nichols, T., Martin, M., & Martin, D. (2015). Psychosocial differences in post-institutionalized, internationally adopted children and other groups of children referred for clinical services. *Adoption Quarterly, 18*(4), 311–326. https://doi.org/10.1080/10926755.2015.1088105
OpenAI. (2025). *ChatGPT* [Large language model]. https://chat.openai.com/chat.
Ouzzani, M., Hammady, H., Fedorowicz, Z., & Elmagarmid, A. (2016). Rayyan—a web and mobile app for systematic reviews. *Systematic Reviews, 5*, 210. https://doi.org/10.1186/s13643-016-0384-4
*Pace, C. S., Muzi, S., & Madera, F. (2022). Emotional-behavioral problems, attachment and verbal skills in late-adopted adolescents: The role of pre-adoption adversities and adoption variables. *Child Abuse & Neglect, 130*(Pt 2), Article 105188. https://doi.org/10.1016/j.chiabu.2021.105188
Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., & Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ, 372*, Article n71. https://doi.org/10.1136/bmj.n71
*Paine, A. L., Fahey, K., Anthony, R. E., & Shelton, K. H. (2020). Early adversity predicts adoptees' enduring emotional and behavioral problems in childhood. *European Child & Adolescent Psychiatry, 30*(5), 721–732. https://doi.org/10.1007/s00787-020-01553-0
*Paine, A. L., Perra, O., Anthony, R., & Shelton, K. H. (2021). Charting the trajectories of adopted children's emotional and behavioral problems: The impact of early

adversity and postadoptive parental warmth. *Development and Psychopathology, 33* (3), 922–936. https://doi.org/10.1017/S0954579420000231

Palacios, J., & Brodzinsky, D. (2010). Adoption research: Trends, topics, outcomes. *International Journal of Behavioral Development, 34*(3), 270–284. https://doi.org/10.1177/0165025410362837

Palacios, J., Román, M., & Camacho, C. (2011). Growth and development in internationally adopted children: Extent and timing of recovery after early adversity. *Child: Care, Health and Development, 37*(2), 282–288. https://doi.org/10.1111/j.1365-2214.2010.01174.x

*Pinderhughes, E. E. (1998). Short term placement outcomes for children adopted after age five. *Children and Youth Services Review, 20*(3), 223–249. https://doi.org/10.1016/S0190-7409(98)00005-X

Reynolds, C. R., & Kamphaus, R. W. (2006). Behavior Assessment System for Children-Second Edition (BASC-2) [Database record]. *APA PsycTests*. https://doi.org/10.1037/t15079-000

*Reppold, C. T., & Hutz, C. S. (2009). Effects of the history of adoption in the emotional adjustment of adopted adolescents. *The Spanish Journal of Psychology, 12*(2), 454–461. https://doi.org/10.1017/s1138741600001839

*Rita, N., Elovainio, M., Raaska, H., Lahti-Nuuttila, P., Matomäki, J., Sinkkonen, J., & Lapinleimu, H. (2017). Child and family-related predictors of psychological outcomes in children adopted from abroad: What is the role of caregiver time? *Scandinavian Journal of Psychology, 58*, 312–317. https://doi.org/10.1111/sjop.12374

Rose, C. J., Bidonde, J., Ringsten, M., Glanville, J., Potrebny, T., Cooper, C., Muller, A. E., Bergsund, H. B., Meneses-Echavez, J. F., & Berg, R. C. (2025). Using a large language model (ChatGPT-4o) to assess the risk of bias in randomized controlled trials of medical interventions: Interrater agreement with human reviewers. *Cochrane Evidence Synthesis and Methods, 3*(5), Article e70048. https://doi.org/10.1002/cesm.70048

Rutter, M., Beckett, C., Castle, J., Colvert, E., Kreppner, J., Mehta, M., … Sonuga-Barke, E. (2007). Effects of profound early institutional deprivation: An overview of findings from a UK longitudinal study of Romanian adoptees. *European Journal of Developmental Psychology, 4*(3), 332–350. https://doi.org/10.1080/17405620701401846

Rutter, M., & the English and Romanian Adoptees (ERA) Study Team. (1998). Developmental catch-up, and deficit, following adoption after severe global early privation. *Journal of Child Psychology and Psychiatry, 39*(4), 465–476. https://doi.org/10.1111/1469-7610.00343

Santos-Nunes, M., Narciso, I., Vieira-Santos, S., & Pereira, C. (2017). Escala de Afeto Positivo e Negativo para Crianças-Pais (PANAS-CP)-Versão Reduzida [Positive and Negative Affect Schedule-Parent-Child (PANAS-CP)-Short-Version]. *Psicologia clínica e da saúde–Instrumentos de avaliação [Clinical and health psychology–Assessment instruments]. Lisboa: Editora Pactor*.

*Santos-Nunes, M., Narciso, I., Viera-Santos, S., & Roberto, M. S. (2022). Parenting and emotional well-being of adoptive school-aged children: The mediating role of attachment. *Journal of Family Psychology, 36*(3), 331–343. https://doi.org/10.1037/fam0000924

Segatto, B., & Dal Ben, A. (2013). The recovery function of adoption. a study carried in the Italy's Veneto region. *Interdisciplinary. Journal of Family Studies, 18*(2), 98–113.

Selwyn, J., Wijedasa, D., & Meakings, S. (2015). *Beyond the adoption order: Challenges, interventions and adoption disruption*. British Association for Adoption and Fostering.

*Smith, C., Cossette, L., Melançon, F., Beauvais-Dubois, C., Smolla, N., Gagnon-Oosterwaal, N., Chicoine, J.-F., Belhumeur, C., Malcuit, G., Pomerleau, A., Séguin, R., & Bégin, J. (2018). Behavior problems in adolescence among international adoptees, pre-adoption adversity, and parenting stress. *Journal of Applied Developmental Psychology, 57*, 53–61. https://doi.org/10.1016/j.appdev.2018.04.005

*Tan, T. X., & Marfo, K. (2006). Parental ratings of behavioral adjustment in two samples of adopted chinese girls: Age-related versus socio-emotional correlates and predictors. *Journal of Applied Developmental Psychology, 27*(1), 14–30. https://doi.org/10.1016/J.APPDEV.2005.12.004

*Tan, T. X., & Marfo, K. (2016). Pre-adoption adversity and behavior problems in adopted chinese children: A longitudinal study. *Journal of Applied Developmental Psychology, 42*, 49–57. https://doi.org/10.1016/j.appdev.2015.11.006

*Tan, T. X., Marfo, K., & Dedrick, R. F. (2007). Special needs adoption from China: Exploring child-level indicators, adoptive family characteristics, and correlates of behavioral adjustment. *Children and Youth Services Review, 29*(10), 1269–1285. https://doi.org/10.1016/j.childyouth.2007.05.001

*Tan, T. X., Camras, L. A., Deng, H., Zhang, M., & Lu, Z. (2012). Family stress, parenting styles, and behavioral adjustment in preschool-age adopted chinese girls. *Early Childhood Research Quarterly, 27*(1), 128–136. https://doi.org/10.1016/j.ecresq.2011.04.002

*Tarroja, M. C. H. (2015). Preadoption risks, family functioning, and adoption secrecy as predictors of the adjustment of Filipino adopted children. *Adoption Quarterly, 18*(3), 234–253. https://doi.org/10.1080/10926755.2015.1026010

van Ijzendoorn, M. H., & Juffer, F. (2006). The Emanuel Miller Memorial Lecture 2006: Adoption as intervention. Meta-analytic evidence for massive catch-up and plasticity in physical, socio-emotional, and cognitive development. *Journal of Child Psychology and Psychiatry, and Allied Disciplines, 47*(12), 1228–1245. https://doi.org/10.1111/j.1469-7610.2006.01675.x

van IJzendoorn, M. H., Juffer, F., & Poelhuis, C. W. (2005). Adoption and cognitive development: A meta-analytic comparison of adopted and nonadopted children's IQ and school performance. *Psychological Bulletin, 131*(2), 301–316. https://doi.org/10.1037/0033-2909.131.2.301

*Vantieghem, M. R., Gabard-Durnam, L., Goff, B., Flannery, J., Humphreys, K. L., Telzer, E. H., & Tottenham, N. (2017). Positive valence bias and parent–child relationship security moderate the association between early institutional caregiving and internalizing symptoms. *Development and Psychopathology, 29*(2), 519–533. https://10.1017/S0954579417000153.

*Von Korff, L., Grotevant, H. D., & McRoy, R. G. (2006). Openness arrangements and psychological adjustment in adolescent adoptees. *Journal of Family Psychology, 20*(3), 531–534. https://doi.org/10.1037/0893-3200.20.3.531

*Wiik, K. L., Loman, M. M., Van Ryzin, M. J., Armstrong, J. M., Essex, M. J., Pollak, S. D., & Gunnar, M. R. (2011). Behavioral and emotional symptoms of post-institutionalized children in middle childhood. *Journal of Child Psychology and Psychiatry, 52*(1), 56–63. https://doi.org/10.1111/j.1469-7610.2010.02294.x

Zahn-Waxler, C., Klimes-Dougan, B., & Slattery, M. J. (2000). Internalizing problems of childhood and adolescence: Prospects, pitfalls, and progress in understanding the development of anxiety and depression. *Development and Psychopathology, 12*(3), 443–466. https://doi.org/10.1017/S0954579400003102