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REVIEW OF THE LITERATURE

Perceived economic hardship and adjustment outcomes of children and adolescents: A systematic review and meta-analysis

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Abstract

Most studies about the relation between economic hardship and child/adolescent outcomes include either objective assessments of economic hardship, such as income and social benefits, or both objective and subjective assessments without disentangling their effects. The aim of this meta-analysis was to synthesize the evidence about the strength of the association between *perceived* (subjective) economic hardship and psychological outcomes of school-aged children and adolescents (ages 6–18). We hypothesized a negative association between perceived economic hardship (by children, parents, or both) and child/adolescent positive adjustment outcomes and a positive association between perceived economic hardship and child/adolescent negative adjustment outcomes. The design and reporting of this meta-analysis followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses. Based on a comprehensive and systematic literature search of relevant peer-reviewed articles and dissertations, 53 cross-sectional studies (344 effects) were included in this meta-analysis. We used correlated and hierarchical effects models with robust variance estimation to synthesize the results. Results showed a small but significant negative pooled effect size for positive adjustment outcomes ($r = -.132$, 95% CI [−0.171, −0.092], $p < .001$) and a positive pooled effect size for negative adjustment outcomes ($r = .177$, 95% CI [0.129, 0.225], $p < .001$). For both positive adjustment and negative adjustment outcomes, *type of outcome* was a significant moderator. Additionally, *parent education* was a significant moderator for positive adjustment outcomes, with stronger effects for studies with less educated parents. For negative adjustment outcomes, the moderator *informants* was also significant. Notably, despite our broad age range, child/adolescent age was not a significant moderator. We also conducted supplementary analyses for the few studies reporting longitudinal effects, which yielded similar, albeit expectedly smaller, effect sizes. Overall, the results point to a small significant relation between perceived economic hardship and adjustment outcomes, which can have implications for research with children and adolescents, by informing strategies to mitigate the effects of perceived hardship.

KEYWORDS
adolescent adjustment, child adjustment, economic hardship, meta-analysis

The aim of this study was to investigate the strength of the association between perceived economic hardship and adjustment outcomes of school-aged children and adolescents. *Perceived economic hardship* is here defined as the subjective experience of economic strain, and therefore drawing from indicators other than actual income, state benefits, or amount of debt. Perceived economic hardship includes feelings about one's economic situation, perception of material deprivation, complaints about money shortage, difficulty in paying bills, and so on (Miller et al., 2025; Schenck-Fontaine & Panico, 2019). Research has mainly focused on objective assessments of economic hardship, although there is evidence

that subjective financial stress with or without low income is also associated with higher levels of child adjustment problems (e.g., Schenck-Fontaine & Panico, 2019). Indeed, previous studies have shown that subjective economic hardship is a better predictor of mental outcomes than objective family income (Chung et al., 2018). Moreover, studies have focused mainly on negative adjustment outcomes such as externalizing behaviors in relation to economic hardship in the family (e.g., Miller et al., 2025). This meta-analysis aimed at addressing these two research gaps by synthesizing studies on the association between *perceived* economic hardship and child/adolescent outcomes while disentangling *positive* versus *negative* adjustment indicators.

The role of family economic hardship in child development has been widely acknowledged, and it is especially relevant in times of economic pressures, armed conflicts, poverty, and migration crises across nations. Research has emphasized the importance of family economic situation in child development, namely in deprived contexts (Dearing & Taylor, 2007). There is strong evidence for a link between family economic hardship and child negative adjustment, including physical, psychological, and behavioral outcomes (e.g., Bellair et al., 2021; Chaudry & Wimer, 2016; Gupta et al., 2007; Neppl et al., 2016; Pearce et al., 2019).

Financial hardship is a determinant factor operating in and outside the family. On one hand, financial hardship affects home resources and parenting practices, limiting the quality of cognitive simulation. Parents with low socioeconomic status (SES) often have fewer opportunities to make investments in child development, both material (e.g., due to fewer resources) and interpersonal (e.g., due to more demanding and less flexible work hours), than their high-SES counterparts (e.g., Dearing, 2014). In fact, low SES jobs often provide less income but also less flexible work schedules and autonomy, thus leaving less time available for parents to devote to their children. On the other hand, low SES can affect the quality of formal education and social opportunities via neighborhood-based school allocation, with poorer children often being selected into schools with worse academic or social environments (e.g., Nieuwenhuis et al., 2021).

Poverty has also a long-term impact on educational achievement (Dearing, 2014), probability of employment, career prospects, and earnings (Currie & Almond, 2011), social exclusion and criminality (e.g., Males & Brown, 2014), and psychological adjustment (e.g., Santiago et al., 2013). In fact, cross-disciplinary research over the last decades has focused on the importance of the school years for subsequent psychological adjustment, emphasizing the importance of investments in mitigating poverty effects early in life (e.g., Beckmann, 2017; Cates et al., 2016; Engle & Black, 2008; Young, 2014).

The family stress model

This meta-analytic study is framed within the family stress model (FSM; Conger & Conger, 2002, 2008), which builds on the dimensions of economic hardship, parent distress, parenting problems, and interparental conflict as influencing child adjustment. The central hypothesis of this model is that family economic hardship might be associated with behavioral problems in children and adolescents because family processes such as problem resolution, rule enforcement, and family relationships have additional challenges for families suffering from economic pressure (e.g., Barnett, 2008; Conger et al., 2010; Ponnet, 2014). Moreover, this model underscores the importance of the subjective dimensions of economic hardship as individuals with the same income levels can experience different levels of economic hardship (Barnett, 2008). There are individual, family, and contextual factors that contribute to different levels of stress experienced even by members of the same family (e.g., Elder et al., 1985; Falconier & Epstein, 2011). As illustrated in Figure 1, perceived economic hardship may make parents more vulnerable to psychological distress and may contribute to exacerbating conflict in the couple. Moreover, parenting difficulties such as maladaptive parenting styles and strained interactions could play a role in the development of child adjustment problems (e.g., Neppl et al., 2016). Perceived economic hardship may interfere with parenting behaviors as the stress of the economic struggle can affect parents' sensitivity in interactions with children.

Economic hardship and adjustment outcomes

A large body of literature has focused on negative adjustment indicators, such as psychological and behavioral problems of children living in economic hardship. Economic hardship has been associated with both internalizing problems, such as depression (e.g., Kavanaugh et al., 2018), and with externalizing problems, such as aggression (e.g., Bellair et al., 2019, 2021; Jiang & Dong, 2022), alcohol and substance abuse (e.g., Hardaway & Cornelius, 2014; Zhu et al., 2019), early sexual debut (McBride et al., 2003), and delinquent behavior (e.g., Rekker et al., 2015). Research also shows links between economic hardship and other negative outcomes such as bullying victimization (e.g., Wang et al., 2023), and suicide attempts (Fergusson et al., 2000), among others. When compared to negative adjustment outcomes, substantially less research has focused on positive developmental indicators such as academic achievement, self-esteem, coping resources, or prosocial behavior. Nevertheless, there is evidence supporting the fact that economic hardship is not only associated with negative child and adolescent outcomes but also with fewer positive skills (e.g., good self-esteem) that could potentially act as protective factors. Economic hardship has been linked to poorer academic achievement (e.g., Hair et al., 2015), lower self-esteem (e.g., Ho et al., 2015; Jiang, 2020; Mayhew & Lempers, 1998), less efficient coping strategies (e.g., Evans & Kim, 2013; Kim et al., 2016), lower sense of control and mastery (e.g., Brown et al., 2016), and also to decreased empathy and prosocial behavior (e.g., Jiang, 2020; Xiao et al., 2023).

JOURNAL OF Research on Adolescence

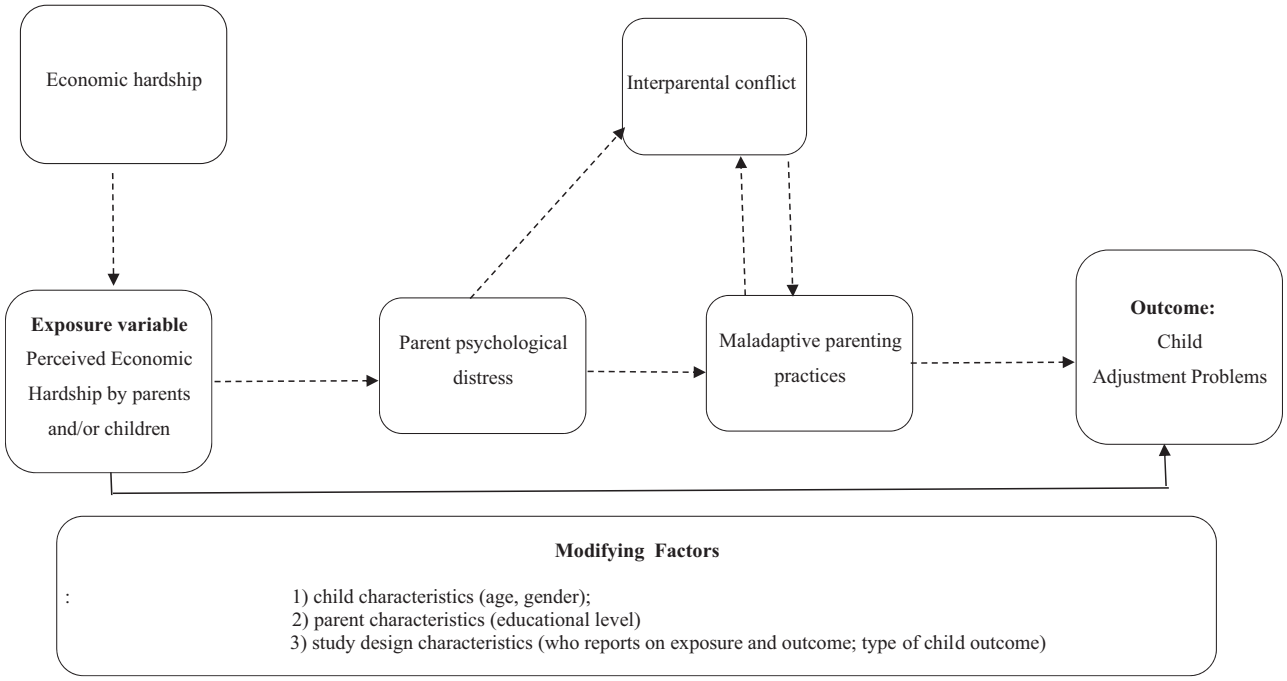

FIGURE 1 Adapted flow chart taken from the diagram published by Masarik and Conger (2017) representing the Family Stress Model (Conger & Conger, 2002).

It is important to recognize that economic hardship may make it harder for children and adolescents to have positive individual and interpersonal experiences due to experiencing negative events connected to poverty such as food insecurity, financial worries, and family conflict. These children and adolescents may develop negative expectations about themselves and others, in a vicious cycle of pessimistic attributional styles (e.g., Hao et al., 2022) that can perpetuate social and economic difficulties. It is therefore important to assess the role of certain socio-psychological characteristics, such as social competence, problem solving, autonomy, and sense of purpose that have been shown to contribute to increased resilience in the face of poverty (Abelev, 2009). Hence, in addition to investigating the association between perceived economic hardship and negative adjustment outcomes (e.g., problematic behaviors such as aggression and substance use), it is also important to investigate the extent of the relation between perceived economic hardship and positive adjustment outcomes (e.g., positive characteristics/skills such as self-esteem, sense of mastery, and proactive behavior), which can offer rewarding personal and interpersonal experiences. Understanding the relation between economic hardship and positive adjustment outcomes can ultimately inform us about how to help children and adolescents break the cycle of increased vulnerability to social and economic difficulties.

This study

The aim of this study was to conduct a meta-analysis on the literature examining concurrent and longitudinal associations between perceived economic hardship and child/adolescent adjustment outcomes. Specifically, we aimed to synthesize the existing literature on the relation between *perceived economic hardship* reported by parents, children, or both, and *adjustment outcomes* of children/adolescents between *ages 6 and 18*, as assessed by comprehensive measures of adjustment or measures of specific positive adjustment (e.g., self-esteem) and/or negative adjustment (e.g., externalizing problems) indicators.

Even though general characteristics of parents and families– such as parents' psychological adjustment, parenting practices, and family environment– can be important contributors to children's psychological adjustment, as hypothesized by the FSM (Conger & Conger, 2002), our meta-analysis focused specifically on the relation between *perceived economic hardship* and *child/adolescent outcomes* (depicted with a solid arrow in Figure 1). We have included not only parents' perceptions of economic hardship (subjective appraisals) but also children's perceptions (when they were available). In other words, since *perceived economic hardship* can be reported sometimes by adolescents (less often by children) and sometimes by parents, the path leading to child/adolescent outcomes can potentially start from both adolescents' own perceptions of economic hardship and from parents' perceptions (see Figure 1). P*erceived* economic hardship may be distinct when the informants are young people because their perceptions can be related to their psychological adjustment and may or may not correspond to the real family economic situation (De Haan & MacDermid, 1999), which might be hard for children and adolescents to estimate.

We have also examined whether the association between perceived economic hardship and child/adolescent

outcomes was influenced by specific socio-demographic and study variables (see bottom of Figure 1). We have included various moderators such as children's individual characteristics like age and gender and parent characteristics such as educational level. With regard to child age, we expect stronger effects for the studies with samples of older children, i.e., those already well into adolescence, since this is a developmental period characterized by increased emotional reactivity and social sensitivity (e.g., Silvers et al., 2012; Somerville, 2013). Higher emotional vulnerability and self-consciousness in adolescence (i.e., worries about social judgment by peers, social comparison with regards to family resources) can contribute to exacerbating the negative effects of perceived economic hardship (e.g., Miller et al., 2025). Regarding gender, studies have found that boys, but just in childhood (and not in adolescence), tend to show higher levels of behavioral problems when compared to girls (e.g., Bongers et al., 2004), whereas girls have been found more likely to perceive financial hardship than boys (e.g., Fröjd et al., 2006). However, we are not aware of studies investigating, specifically, whether the relation between perceived economic hardship and behavioral outcomes is differentially stronger across genders. Yet, given that gender differences in child outcomes, especially those related to behavioral problems, tend to fade away after childhood, we expect studies with a higher proportion of teenage girls to show stronger relations between perceived economic hardship and behavioral outcomes. Finally, concerning parent education, we expect the relation between perceived economic hardship and child outcomes to be stronger in studies including a higher proportion of less educated parents, since they tend to have fewer resources and reduced perceived control over their financial situation (e.g., Caplan & Schooler, 2007), which can affect parenting practices and child outcomes. Higher education could potentially act as a buffer for the detrimental effects of economic hardship by facilitating more stimulating and adequate parenting (e.g., Davis-Kean, 2005), although some studies also highlight the opposite effect by which attaining higher education can exacerbate parent frustration with economic hardship (e.g., Mistry & Elenbaas, 2021). Finally, we also considered the moderator role of study design issues such as the type of informant on both exposure and outcome variables, as well as the type of child/adolescent outcome. Classically, the literature on the FSM has focused on negative adjustment outcomes and, therefore, we have also investigated less studied indicators pertaining to (positive) adjustment indicators.

Specific research questions of this study included: (a) What is the magnitude of the association between perceived economic hardship and children/adolescent adjustment outcomes? (b) Is this association moderated by type of outcome (e.g., academic achievement, internalizing problems), type of informant (i.e., if parents or children reported on exposure and outcome variables), sample characteristics (i.e., age and gender ratio of children/adolescents participating in the included studies, parent education, study country), and study quality?

METHOD

The design and reporting of this meta-analysis are in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Stroup et al., 2000). The completed PRISMA checklist is in Appendix S1 (Prisma 2020 Checklist). This review was not prospectively registered. The study was exploratory in nature, but all major analytic decisions (e.g., inclusion criteria, coding strategy, and moderator definitions) were made prior to data analysis. In addition, the R code used in the analyses is available as Appendices S6 and S7.

Search strategy

In line with the research questions of this meta-analysis, we developed a search strategy, which included combinations of terms referring to the exposure variable *economic hardship* with terms delimiting the sample of interest: *children/adolescents*. These two main categories of search terms were combined in each database using the Boolean operator OR between search terms within each category, and the operator AND between the sets of search terms comprising the two categories. Thus, we combined terms related to the exposure variable *economic hardship* (i.e., economic* pressure, financ* pressure, etc.) with terms referring to the target sample (i.e., adolesc*, child*, young*, etc.). The complete search string can be found as Appendix S2 (Search String). In the searches, we did not include terms related to child/adolescent outcomes, since they were not defined a priori. We focused on outcomes related to adjustment variables, and these were specified under our inclusion criteria.

We first conducted a systematic literature search of English language articles in January 2024, followed by an updated search in May 2025, using the same search strategy. The search for published articles was conducted in the databases ERIC, MEDLINE, PsycINFO, Web of Science, and Scopus. We also inspected the Cochrane Database of Systematic Reviews in search of gray literature, more specifically theses and dissertations.

Eligibility criteria

The inclusion criteria for this meta-analysis were set a priori and were applied to studies identified as being potentially relevant. Studies needed to (a) be an empirical primary study with a quantitative design published in peer-reviewed journals or as theses/dissertations, (b) focus on the association between perceived economic hardship and child/adolescent adjustment outcomes, (c) have samples of typically

developing school-aged children/adolescents (from 6 to 18 years old), (d) include measures of perceived economic hardship and of adjustment outcomes, and (e) be written in the English language.

Hence, the studies were excluded based on (a) study type (e.g., qualitative studies), (b) topic (e.g., not focusing on the association between perceived economic hardship and child/adolescent adjustment outcomes), (c) target group (e.g., adults, or non-normative child/adolescent populations like hospitalized children or children with developmental delays), (d) assessment measures (e.g., included solely an objective exposure measure of financial hardship such as salary or social benefits, or child/adolescent outcomes related to physical health such as BMI, cholesterol, fitness, or cancer remission), (e) language (e.g., written in a language other than English), and (f) insufficient information (e.g., if the articles did not provide enough information to calculate an effect size and the corresponding authors did not respond to our request to provide such data).

The studies, identified through database searches by title, were screened for their eligibility in two different subsequent steps: (i) screening by titles and abstracts, and (ii) full-text screening of all the articles that were found as potentially relevant for the review, using the software Rayyan. Two screeners were involved in the independent double screening of the articles. Disagreements in the inclusion process were resolved through discussion between the two screeners.

Data extraction and coding

Detailed information on each study was extracted to an Excel file, to gain a detailed overview of the existing research. The file contained six main sections: (1) identification of study features (title, authors, country); (2) study design (e.g., cross-sectional vs. longitudinal); (3) participants' characteristics (child/adolescent age and gender; parent education); (4) perceived economic hardship (type of measure and informants); (5) child/adolescent outcomes (type of measure and informants); and (6) methodological quality of the included studies.

We coded the studies that met the criteria for inclusion in this meta-analysis by extracting correlation coefficients (Pearson's *r*) for the associations between economic hardship and child/adolescent adjustment outcomes and recorded sample size (*N*). One study reported *an odds ratio*, and it was therefore converted to Pearson's *r*. When multiple indicators of our variables of interest were reported (i.e., correlations derived from different economic hardship measures or measure subscales), the multiple effects per study were coded, but we did not include both subscales and total scores to avoid redundancy in the data. Some studies reported both concurrent (e.g., correlations between economic hardship and child/adolescent outcome at the first-time assessment—T1) and longitudinal data (e.g., correlations between economic hardship at T1 and child/adolescent outcome at the second time assessment—T2). In these cases, effects for each time point were considered separately. As for longitudinal studies with multiple time-point assessments, we coded data on the longest follow-up only.

The following moderators were also coded in detail.

Participant and study characteristics

The following participant characteristics were included as moderators: (i) *child/adolescent age* (coded as a categorical variable: "below 12" and "12 or older", based on the mean age of the participants); (ii) *child gender* (divided into "sample with mostly boys" and "sample with mostly girls", considered as a categorical variable); (iii) *parent education* (coded as "low": most of the parents in the sample did not have more than a high school diploma; "middle": most of the parents in the sample attended some form of higher education, but did not complete a bachelor's degree; "upper": most of the parents in the sample completed a bachelor's degree). Furthermore, we included as moderators the study characteristics: (i) *country* where the study was conducted, coded as a categorical variable: "US" vs. "China" vs. "Other"; (ii) *type of publication*, coded as a categorical variable: "peer-reviewed article" vs. "PhD thesis".

Outcome type and informants

Outcome type

The type of child/adolescent adjustment outcome was coded with an overarching coding and sub-codings. The overarching coding included *Positive Adjustment* versus *Negative Adjustment* assessments. Under the *Positive Adjustment* category, we coded outcomes as: (i) *Self-esteem, Coping and Resources* (SCR, e.g., measures of self-esteem, mastery, active coping), (ii) *Prosocial Behavior* (PROS, e.g., altruism, perspective-taking, empathic concern), and (iii) *Academic Achievement* (ACAD, e.g., school grades, academic motivation). Under *Negative Adjustment* indicators, we coded outcomes as: (i) *Internalizing Behavior* (INT, e.g., depression, loneliness), (ii) *Externalizing Behavior* (EXT, e.g., aggression, substance abuse), and (iii) *Other* (e.g., feeling pressured by peers and/or being the target of bullying behaviors). These categories were created a posteriori by inspecting selected studies and grouping them into relevant subcategories based on child/adolescent outcomes.

Informants

This variable was coded as PP (parent reporting both on exposure and outcome, e.g., mother reports on both economic hardship and child internalizing problems), CC (children reporting on both exposure and outcome), and Mixed (PC or CP).

Study quality

We used the Joanna Briggs Institute (JBI) critical appraisal checklist to evaluate study quality (Moola et al., 2020). The JBI aims to assess the methodological study quality and possible sources of bias. The protocol checklist evaluates the following areas: (i) inclusion criteria and sample description; (ii) validity and reliability of the exposure measures; (iii) identification and strategies to account for confounding factors; (iv) validity and reliability of outcome measures; and (v) suitability of the statistical analyses. We adapted the checklist identifying seven main criteria related to potential biases: (1) inclusion criteria for selecting participants (age, gender, and parent education); (2) details of participants and study context (e.g., inclusion criteria); (3) quality of the instrument used to assess economic hardship (e.g., reliability); (4) extent to which confounding factors were identified (e.g., parent psychological symptoms); (5) extent to which these confounding factors were controlled for in the analyses; (6) quality of the instrument used to assess child/adolescent outcomes (e.g., standardization); and (7) quality of the statistical analyses. Each study was rated on each of these seven indicators as a "1" (*Yes*, fulfills the criterion) or "0" (*No*, does not fulfill the criterion). We created a global appraisal for each study by computing the proportion of "yes" responses to the possible maximum "yes" scorings.

Data synthesis: Meta-analysis

Two separate meta-analyses were conducted for adjustment outcomes, one for *Positive Adjustment* effect sizes and another for *Negative Adjustment* effect sizes. To conduct the analyses, we first converted the correlations to Fisher's Z to approximate a normal distribution of population effect sizes (Cohn & Becker, 2003). Note that in our dataset, a higher correlation indicated a stronger association between economic hardship and child/adolescent outcomes. Once the analysis was performed, we converted the results back to Pearson's r correlation coefficients to facilitate their interpretation.

We conducted our analyses using the "metafor" package (Viechtbauer, 2010) and "clubSandwich" package (Pustejovsky, 2017) in the R statistical software environment (R Core Team, 2020). To estimate meta-analytic effects that account for complex dependency structures in the data, we applied correlated and hierarchical effects (CHE) models as recommended (Pustejovsky & Tipton, 2021). CHE models are based on robust variance estimation (RVE), which addresses the handling of effect sizes and variance estimates related to both within- and between-study dependencies (Fisher & Tipton, 2015; Tipton & Pustejovsky, 2015; see also Pustejovsky & Tipton, 2021).

CHE-RVE includes two different working models: the "correlational effects", which derive from the assumption that dependencies within studies result from sampling errors since multiple effect sizes are estimated on the same sample (i.e., a study includes several measures of the same construct or measures on different constructs), and "hierarchical effects", which are based on the assumption that dependencies in studies are nested because effect sizes derive from independent samples sharing some features (i.e., multiple research studies are conducted by the same lab or research group). These two models can be implemented simultaneously in the CHE models within a multilevel modeling framework. In our meta-analysis, we performed CHE models in two steps. Firstly, the structure of variances among effect sizes was computed in the "clubSandwich" package (Pustejovsky, 2017) by using a block-diagonal covariance matrix which assumed a correlation of $\rho = .60$ among effect sizes clustered in studies (Pustejovsky & Tipton, 2021). Then, the structure of variances was used in a two-level random effects model, with random intercepts for studies and individual effects, using maximum likelihood estimation (see Borenstein et al., 2011).

To test the robustness of the results regarding the overall effect size in the CHE-RVE method, sensitivity analyses were conducted by manipulating the within-study effect size correlation values to .20, .40, and .80. Furthermore, we included an additional robustness check by rerunning all analyses, eliminating the studies with high risk of bias.

In addition to Q-statistic and the tau (τ), 95% prediction intervals (PI) were reported for assessing heterogeneity (Borenstein et al., 2017). Furthermore, to test the source of heterogeneity, we tested moderators as predictors. In our study, we conducted single-moderator analyses only when at least 5 studies were available and interpreted these findings cautiously given the limited power and increased uncertainty.

Publication bias

To test potential publication bias, we used several methods. First, we visually examined funnel plots to detect any sign of asymmetry. As relying just on visual inspection of the funnel plot is unreliable, we also used the Egger's tests (Egger et al., 1997) to statistically check its asymmetry. We further performed precision-effect test (PET) and precision-effect estimate with standard error (PEESE) models (Carter et al., 2019; Egger et al., 1997; Stanley, 2008; Stanley & Doucouliagos, 2014). While the Egger's test examines whether the slope is statistically significant, the PET–PEESE method examines the intercepts that are interpreted as the unbiased estimates once accounting for small-study effects.

RESULTS

Study identification

A total of 954 potentially relevant articles from the database searches were identified. After removal of duplicates, 516 studies remained for independent title and abstract screening. Four hundred and thirteen articles were eliminated

JOURNAL OF Research on Adolescence

after initial title and abstract screening due to violation of at least one of the inclusion criteria. One hundred and three studies were included and assessed for further full-text screening. From these, 34 were excluded for the following reasons: (i) target group (e.g., studies did not include school-aged children/adolescents, ages 6–18; $k = 16$), (ii) design and assessment measures (e.g., studies did not include a subjective appraisal of economic hardship, $k = 15$), (iii) language (the article was written in a language other than English, $k = 3$). Therefore, 69 studies were found eligible. However, in 15 studies, the authors did not report the relevant coefficients and therefore were contacted (twice) by email whenever available. Only two of the contacted authors provided the relevant coefficients. Hence, 13 studies were further excluded (insufficient data). This resulted in a total of 56 studies.

Since our searches retrieved only 12 longitudinal studies (nine with both cross-sectional and longitudinal data and three with just longitudinal data), we have focused our main analyses on cross-sectional studies only (brief supplementary analyses for the few available longitudinal studies were also conducted). Therefore, we have removed the three studies with longitudinal data only from our main analyses. Before these studies were discarded, we contacted the authors asking for cross-sectional data, but obtained no response. Hence, our main analyses focused on 53 cross-sectional studies corresponding to 344 effect sizes (see Figure 2), since besides these three purely longitudinal studies, which had 18 effect sizes, we discarded also 23 longitudinal effect sizes belonging to the nine studies with both cross-sectional and longitudinal data.

Characteristics of the included cross-sectional studies

Eligible cross-sectional studies ($k = 53$) included 52 published articles and one dissertation. To ensure reliability in the process of extraction of effect sizes from each study, two researchers (the first author and a graduate researcher) independently coded 55% of the articles (29 out of the 53) included in the meta-analysis. Reliability was calculated based on the percentage of agreement on the effect sizes extracted for each study. Disagreements were solved by discussing each disparate coding. The percentage of the agreement was 93%, indicating high interrater reliability.

The included studies were published until the end of May 2025: 18 in the 2020s, 18 in the 2010s, six in the 2000s, nine in the 1990s, and just two in the 1980s. Most studies took place in the USA ($k = 36$), followed by China ($k = 9$), with 8 studies being conducted in other countries: Albania ($k = 1$), Australia ($k = 1$), Belgium ($k = 1$), Germany ($k = 1$), Lithuania ($k = 1$), Turkey ($k = 1$), Singapore ($k = 1$), multi-nations ($k = 1$, which included 18 countries in 3 different continents). Sixty-four percent of the studies included children with a mean age of 12 or above, and 25% of the studies included children with a mean age below 12, with 11% of studies not reporting on sample mean age. With regard to gender composition, in about 45% of the studies, the sample included more girls than boys, whereas in 34% of the studies the sample had more boys, with 13% of the studies having the same percentage of boys and girls in their samples (in 8% of the studies, children's gender was not reported). Parent education level, when available, was mostly reported in the articles jointly as "parental education" (42% of the articles), followed by "maternal education" (32%), and "mothers' and fathers' education" (16%). In four articles, the authors reported the education of non-specified caregivers (e.g., "primary caregiver"), and only two articles reported parent education as the "highest education of both parents". Studies included mostly parents with *low* (majority of the sample with high school or less, 49%) and *middle* (majority of the sample with some form of higher education but not concluded bachelor's, 43%) education. Only 8% of the studies included mostly parents with *upper* education (majority of the sample with a bachelor's or more). Therefore, we combined upper with middle education (i.e., *low* (49%) vs. *middle/upper* (51%) education).

Regarding the exposure variable, all studies included an assessment of economic hardship designated with terms such as "economic stress", "financial hardship", "financial stress", "economic hardship", and "economic pressure". Examples of *perceived* economic hardship indicators, found in the included studies, covered assessments of perceptions of shortage of money, inability to make ends meet, difficulty paying bills, financial cutbacks, and financial worries. In most of the studies ($k = 30$), the authors used ad hoc measures to assess *economic hardship*, with 22 studies using standardized measures (see examples in Table 1) and one study using both ad hoc and standardized measures.

When considering the outcome variable, 18 of the included studies assessed *Positive Adjustment* indicators including: SCR (7 studies), PROS (5 studies), ACAD (5 studies), with one study assessing both SCR and ACAD; 16 of the included studies assessed *Negative Adjustment* indicators such as: INT (5 studies), EXT (3 studies), INT and EXT (7 studies), with one study assessing both EXT and OTHER; 19 of the included studies addressed both *Positive Adjustment* and *Negative Adjustment* outcomes in diverse combinations (see Table 2). Most studies ($k = 37$) used standardized outcome measures (see examples in Table 1), eight studies used ad hoc measures, and another eight studies used both ad hoc and standardized assessments.

Association between economic hardship and positive adjustment outcomes

The concurrent association between economic hardship and child/adolescent positive adjustment outcomes was investigated in 37 studies, corresponding to 212 effect sizes. Ten studies included PROS outcomes (65 effects), 14 studies ACAD outcomes (49 effects), and 20 studies included outcomes related to SCR (98 effects). Using a CHE-RVE model with the within-study effect size correlation

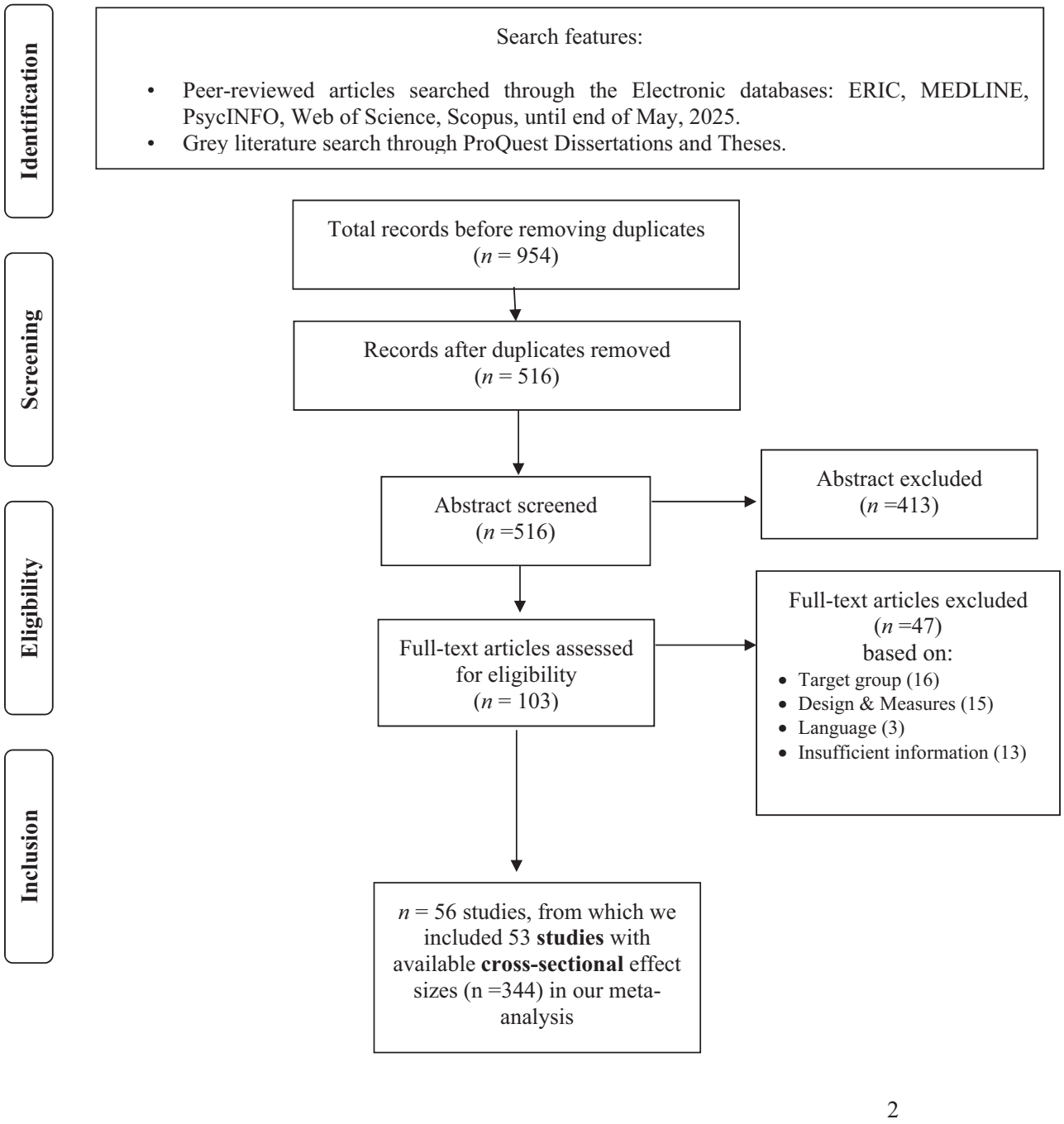

FIGURE 2 PRISMA flowchart for identifying trials included in the review.

specified as .60, we found an average correlation of −.132, 95% CI [−0.171, −0.092], $p < .001$ between adjustment outcomes and perceived economic hardship. The true effect size was heterogeneous, with $Q_{(212)} = 926.63$, $p < .001$, 95% PI [−0.360, 0.110], and variance components, $tau^2 = .010$ and $omega^2 = .004$, between-study and within-study, respectively (see the forest plot in Appendix S3 – Forest Plot Positive Adjustment).

Type of outcome (ACAD, PROS, and SCR) and *parent education* were significant moderators. Both ACAD and SCR had a statistically significant higher mean effect size compared to PROS, $F_{(1,4.56)} = 21.12$, $p = .007$. The correlation was significantly lower for the PROS outcome. Parent education was also a significant moderator. Parents with lower education had a statistically significant higher mean effect size compared to parents with middle/upper education, $F_{(1,23.28)} = 4.72$, $p = .04$. The correlation was significantly higher for studies with low-educated parents. The moderators informants, child age, child gender, and country were non-significant (see Table 3). For country, we reported the results for the studies conducted in the US and China only since the "Other" category included few studies from very

JOURNAL OF Research on Adolescence

TABLE 1 Examples of relevant assessments of perceived economic hardship (Exposure) and child/adolescent outcomes.

Assessments of economic hardship	Child/adolescent outcomes
Personal Financial Wellness Scale	Child Behavior Checklist 6–18 (CBCL 6–18)
Economic Strain Questionnaire	Diagnostic Interview Schedule for Children (DISC-IV)
Economic Hardship Questionnaire	Pearlin's Mastery Scale
Current Economic Stress Scale	Risky Behavior Scale
Economic Stress Subscale of the Responses to Stress Questionnaire (RSQ)	Children's Coping Strategies Checklist (CCSC)
Multicultural Events Scale for Adolescents (MIESA)	Center for Epidemiological Studies Depression Scale (CES-D)
Family Economic Hardship Scale	The Strengths and Difficulties Questionnaire (SDQ)

geographically diverse countries (although the three-way comparison was also performed and revealed similar results; see Table 3).

With regard to the publication bias, the contour-enhanced funnel plot for positive adjustment outcomes is shown in Figure 3. In the PET model, the intercept (estimate of the true effect size), −0.097 (SE = −0.045), was marginally significant ($p = .05$), indicating an adjusted effect size that almost remained significant after correcting for biases. The slope, which indicates potential publication bias, −0.597 (SE = 0.753), was not statistically significant. In the PEESE model, the intercept was −0.123 (SE = 0.025), which was statistically significant, indicating an adjusted effect size that remained significant after correcting for bias. The slope was −2.301 (SE = 4.468), which was not statistically significant. This indicates no potential evidence of publication bias.

Association between economic hardship and negative adjustment outcomes

The concurrent association between perceived economic hardship and child/adolescent negative adjustment outcomes was investigated in 35 studies, corresponding to 132 effect sizes. Twenty-four studies included INT (62 effects), 20 studies included EXT (64 effects), and six studies included OTHER (e.g., suicidal ideation; 6 effects). Using the CHE-RVE model with the within-study effect size correlation specified as .60, we found an average correlation of .177, 95% CI [0.129, 0.225], $p < .001$ between negative adjustment outcomes and perceived family economic hardship. The true effect size was heterogeneous, with $Q_{(131)} = 830.24$, $p < .001$, 95% PI [−0.122, 0.447], and variance components, $tau^2 = .013$ and $omega^2 = .009$, between-study and within-study, respectively (see forest plot in Appendix S4 – Forest Plot Negative Adjustment).

Type of outcome and *informants* were significant moderators. With regard to type of outcome, we chose to run the moderator analysis for the categories INT and EXT only, leaving out the category OTHER, since it included a heterogeneous range of negative adjustment behaviors. INT had a statistically significant higher mean effect size compared to EXT, $F_{(1,11.85)} = 19.73$, $p = .0008$. With regard to *informants*, both PP and Mixed had a statistically higher mean effect size when compared to CC, $F_{(1,7.57)} = 7.13$, $p = .0430$. The moderators, country, child age, and child gender were non-significant (see Table 4).

With regard to publication bias, the contour-enhanced funnel plot for negative adjustment outcomes is shown in Figure 4. In the PET model, the intercept was 0.177 (SE = 0.032) for negative adjustment outcomes, which was statistically significant. The slope, on the other hand, was 0.037 (SE = 0.528), which was not statistically significant. This non-significance in the slope indicates no substantial evidence of small-study effects or publication bias. Similarly, in the PEESE model, the intercept was 0.182 (SE = .024), which was statistically significant, while the slope was −0.044 (SE = 1.274), which was not statistically significant. Again, this indicates no potential evidence of publication bias.

Assessment of study quality

The results of the methodological quality assessment showed that, of the 53 articles considered, 39 of them (72%) were judged to have "low" risk of bias, 11 (22%) had a "moderate" risk of bias, and three (6%) had a "high" risk of bias (see Appendix S5 – Quality Scorings). When considering the global appraisal ratings for each study (by computing the proportion of "yes" responses on the possible maximum "yes" scorings), we found no significant differences among studies that included (i) positive adjustment outcomes only, (ii) negative adjustment outcomes only, and (iii) both positive adjustment and negative adjustment outcomes (Kruskal-Wallis: $H(2) = 3.73$, $p > .05$). Likewise, no differences in quality were found among the three types of articles when only the qualitative intervals - "high risk of bias" (49% or lower of fulfilled criteria), "moderate risk of bias" (50–69% of fulfilled criteria), and "low risk of bias" (70% or higher of fulfilled criteria) - were considered ($\chi^2(4) = 2.44$, $p > .05$).

In terms of the seven criteria evaluated, four of them (criteria 4–7) obtained close to 90% or more of "Yes, fulfills the criterion" ratings, whereas two criteria (1 and 2) obtained 70% of such ratings. These two criteria refer to details of participant selection and study context. The main reason for failure to fulfill this criterion was lack of information (in 28% of the studies) on parent educational level,

TABLE 2 Characteristics of included studies ($n = 53$).

Study, year	*N*	Child age mean/ range	% Boys	Parent education	Exposure /Informant	Outcome type (outcome)/Informant
Arnup et al. (2022)	25,534	10.6/–	50.6	Middle/upper	Financial hardship /parent	PA (SCR); NA (OTHER)/child
Assing-Murray and Lebrun-Harris (2020)	61,940	–/3–17	51.1	Middle/upper	Economic hardship/parent	NA (EXT, INT)/parent
Bao and Greder (2023)	148	7.8/–	57.4	Low	Economic pressure/parent	NA (EXT, INT)/parent
Burrell and Roosa (2009)	189	–/9–12	52.9	–	Economic hardship/parent	PA (ACAD, SCR); NA (EXT)/parent and child
Carlo et al. (2011)	478	11.3/–	51.0	Middle/upper	Economic stress/parent	PA (PROS)/child
Clark-Lempers (1987)	105	–/11–14	42.0	–	Financial hardship/parent and child	PA (ACAD); NA (INT)/child
Clark-Lempers et al. (1990)	105	–/11–14	40.0	–	Economic hardship/parent and child	PA (ACAD); NA (INT)/parent and child
Conger et al. (1991)	76	14.2/12–14	55.0	Middle/upper	Economic pressure/parent	NA (EXT)/child
Conger et al. (1992)	205	12.7/12–14	100	Low	Economic pressure/parent	PA (ACAD, PROS, SCR); NA (EXT, INT)/ child
Conger et al. (1993)	220	13.5/12–14	0.0	Low	Economic pressure/parent	PA (ACAD, PROS, SCR); NA (EXT, INT)/ child
Davis and Carlo (2019)	311	16.1/14–18	50.0	Middle/upper	Economic stress/child	PA (PROS)/child
Davis et al. (2018)	307	15.5/14–18	53.8	Middle/upper	Economic stress/parent	PA (PROS)/child
Davis et al. (2020)	306	15.5/14–18	53.8	Middle/upper	Economic stress/parent	PA (PROS)/child
Delgado et al. (2013)	246	12.5/–	48.0	Low	Economic hardship/parent and child	PA (ACAD); NA (EXT, INT)/child
Fang et al. (2016)	301	14.0/10–18	59.0	Low	Economic stress/child	PA (ACAD, SCR)/child
Forkel and Silbereisen (2001)	102	11.5/10–13	44.0	–	Economic pressure/parent	NA (INT)/child
García et al. (2014)	146	16.4/14–18	44.0	–	Economic stress/child	NA (INT)/child
Gilbert et al. (2017)	68	9.0/8–10	44.0	–	Financial stress /parent	PA (ACAD)/child
Gonzales et al. (2011)	750	10.4/9–12	51.3	Low	Economic hardship/parent	NA (EXT, INT)/parent and child
Gutman and Eccles (1999)	617	12.2/11–16	–	Middle/upper	Financial strain/parent	PA (ACAD)/child
Gutman et al. (2005)	305	13.5/11–16	45.0	Low	Financial strain/parent	PA (ACAD, SCR); NA (INT)/parente and child
Ho et al. (1995)	387	12.4/11–14	50.0	Low	Economic hardship/parent	PA (SCR)/child
Hong et al. 2021	12,490	12.5/12–17	50.6	Middle/upper	Economic hardship/parent	NA (EXT)/parent
Ip et al. (2025)	444	13.0/12–14	46.0	Low	Economic stress/child	PA (ACAD); NA (EXT, INT)/child
Jiang et al. (2020)	1280	15.7/14–18	47.4	–	Economic strain/child	PA (PROS); NA (EXT)/child
Kavanaugh et al. (2018)	451	–/13–14	40.0	Middle/upper	Economic pressure/parent	NA (INT)/child
Kloep and Tarifa (1993)	160	11.9/11–13	50.0	–	Economic adjustments/parent	NA (EXT, INT)/child
Kwon and Wickrama (2014)	407	14.6/14–16	46.00	Middle/upper	Economic pressure/parent	PA (SCR); NA (EXT)/child
Lee et al. (2013)	451	16.0/–	47.00	Middle/upper	Economic hardship/parent	NA (INT)/child
Lempers et al. (1989)	622	16.2/14–18	50.0	Low	Economic hardship/child	NA (EXT, INT)/child

TABLE 2 (Continued)

Study, year	*N*	Child age mean/ range	% Boys	Parent education	Exposure /Informant	Outcome type (outcome)/Informant
Liao et al. 2024	673	12.8/11–15	54,1	Low	Economic hardship/parent	PA (SCR); NA (OTHER)/child
Mayhew and Lempers (1998)	398	13.5/12–15	50.0	Middle/upper	Financial strain/parent	PA (SCR)/child
Mistry and Elenbaas (2021)	136	10.7/8–14	45.0	Middle/upper	Economic stress/parent and child	PA (ACAD)/parent and child
Ponnet (2014)	798	14.3/11–17	42.9	Middle/upper	Financial stress/parent	NA (EXT/parent)
Shek (2003)	229	14.2/–	46.7	–	Economic stress/parent and child	PA (SCR); NA (EXT, INT)/child
Simons and Steele (2020)	422	10.5/–	47.6	Low	Economic pressure/parent	PA (ACAD)/child
Taylor et al. (2014)	200	14.5/–	48.0	Low	Financial pressure/parent	NA (EXT, INT)/child
Taylor et al. (2018)	674	10.9/9–11	50.0	Low	Economic hardship/parent	PA (SCR)/parent and child
Thompson et al. (2017)	119	15.6/11–18	61.0	Low	Financial stress/child	PA (ACAD)/child
Uçanok and Güre (2014)	414	12.6/10–14	48.3	Middle/upper	Economic strain/child	PA (SCR)/child
Vosylis et al. (2021)	1268	14.9/–	48.3	Middle/upper	Economic pressures/child	PA (SCR)/child
Wadsworth and Compas (2002)	364	14.7/11–18	42.0	Low	Economic strain/child	NA (EXT, INT)/child
Wang and Wang (2024)	2407	12.8/11–16	49.5	Low	Economic stress/child	PA (PROS, SCR); NA (OTHER)/child
Wang and Zhao (2025)	2823	13.5/–	56.0	Low	Economic stress/child	PA (SCR); NA (INT)/child
Wang et al. (2023)	40,772	–/10–12	–	–	Financial stress/child	PA (PROS); NA (OTHER)/child
Wen et al. (2023)	511	11.0/7–12	–	.	Economic hardship/parent	PA (SCR); NA (INT)/parent
Whitbeck et al. (1991)	433	12.6/11–13	50.0	Middle/upper	Economic pressure/parent	PA (SCR)/child
Whitbeck et al. (1997)	316	12.6/11–13	–	Middle/upper	Economic pressure/parent	PA (SCR)/child
Xiao et al. (2023)	143	12.2/11–14	54.8	.	Economic pressure/parent	PA (PROS)/parent
Yang et al. (2023)	2407	12.8/11–16	49.5	–	Economic stress/child	NA (EXT, OTHER)/child
Ying et al. (2019)	437	10.9/9–11	54.9	Low	Economic pressure/child	NA (INT)/child
Yoder and Hoyt (2005)	501	14.9/12–18	47.7	–	Economic pressure/parent	PA (SCR); NA (INT)/child
Zhang et al. (2020)	777	11.4/10–15	56.0	–	Economic pressure/parent	PA (SCR); NA (INT)/child

Abbreviations: ACAD, academic; EXT, externalizing; INT, internalizing; NA, negative adjustment; OTHER, e.g., Felt peer pressure/bullying victimization; PA, positive adjustment; PROS, prosocial; SCR, self-esteem, coping, and resources.

an important correlate of economic hardship. Finally, criterion 3 was the only problematic criterion with only 43% of "Yes, fulfills the criterion" ratings. Note that this criterion refers to the quality of the exposure measure used to assess subjective economic hardship. In fact, many of the articles included ad hoc measures developed for the studies or used adapted versions of standardized measures, not always validated, or not including reliability data on the study sample.

Study quality (i.e., low, moderate, and high risk of bias) was also included in our moderator analyses. However, the effect sizes for each group were not significantly different for either positive adjustment or negative adjustment outcomes (see Tables 3 and 4).

Sensitivity analyses

For associations between economic hardship and both positive and negative adjustment outcomes, sensitivity analyses (within-study effect size correlation values manipulated to .20, .40, and .80) were conducted to test the robustness of the results in the CHE-RVE model. They revealed that the overall effect size estimates remained similar. Moreover, when all effect sizes originating from studies with a high risk of bias (19 for positive outcomes and 12 for negative outcomes) were eliminated, the effect size estimates remained almost identical.

Supplementary analyses for longitudinal effects

We have carried out additional analysis for the few longitudinal studies available, conducting separate meta-analyses for longitudinal positive adjustment outcomes and for longitudinal negative adjustment outcomes. The longitudinal association between perceived economic hardship and positive adjustment outcomes was investigated in seven studies, corresponding to 11 effect sizes. We found an average correlation of −.093, 95% CI [−0.152, −0.032], $p = .010$, between positive adjustment outcomes and perceived economic hardship. The true effect size was heterogeneous, with $Q_{(10)} = 41.66$, $p < .001$ PI [−0.244, 0.064], with variance components of $tau^2 = .002$ and $omega^2 = .002$, between-study and within-study, respectively.

The longitudinal association between perceived economic hardship and children's negative adjustment outcomes was investigated in seven studies, corresponding to 30 effect sizes. We found an average correlation of .094, 95% CI [0.053, 0.135], $p = .004$ between negative adjustment outcomes and perceived economic hardship. The true effect size was heterogeneous, with $Q_{(29)} = 195.45$, $p < .001$ PI [−0.088, 0.270], with variance components, $tau^2 = .000$ and $omega^2 = .005$, between-study and within-study, respectively. We were unable to conduct moderator or publication bias analyses due to the small number of longitudinal studies/effects.

DISCUSSION

This meta-analysis aimed at investigating the overall association between perceived economic hardship and adjustment outcomes, both positive and negative, of school-aged children and adolescents. We also examined the moderating role of various participant and study characteristics. Our results showed, as expected, a small but significant overall negative association between perceived economic hardship and child/adolescent positive adjustment outcomes and also a small but significant overall positive association between perceived economic hardship and child/adolescent negative adjustment outcomes. The two effects were similar in magnitude, with a slightly larger association for economic hardship with negative adjustment outcomes. Our findings highlight the importance of using subjective measures of economic hardship because low income cannot fully explain all the mechanisms and environmental conditions that may affect families facing economic hardship, but also because not all individuals with the same income or financial circumstances experience the same level of financial pressure (e.g., Lee, 2022).

There was significant heterogeneity for positive adjustment and negative adjustment studies. For the positive adjustment studies, the moderator *type of outcome* accounted for variation in the results. Both ACAD and SCR had a statistically significant higher mean effect size when compared to PROS. Thus, perceptions of economic hardship seem to be more closely associated with outcomes pertaining to academic attainment, as well as self-esteem, coping, and resources than with prosocial indicators, such as altruistic behavior or positive social bonds with peers. For negative adjustment outcomes, *type of outcome* was also a significant moderator. INT had a statistically significant higher mean effect size when compared to EXT, suggesting that aspects such as depression and anxiety were more strongly associated with perceived economic hardship when compared to outcomes such as aggression, delinquency, or substance abuse.

The literature is scarce when it comes to disentangling subtypes of child/adolescent outcomes, within positive adjustment and negative adjustment categories, in relation to economic hardship. Most studies focus on the relation between economic hardship and negative adjustment outcomes, with significant associations for both internalizing and externalizing problems (e.g., Bellair et al., 2021; Dearing et al., 2006; Jiang & Dong, 2022; Kavanaugh et al., 2018; Slopen et al., 2010; Zhu et al., 2019). In our meta-analysis, for both positive adjustment and negative adjustment outcomes, perceived economic hardship was a stronger predictor of more internal or self-contained indicators, both positive and negative (e.g., academic achievement, self-esteem, depression, anxiety), rather than of more external/outward, or socially directed, positive and negative adjustment indicators (e.g., altruistic behavior, social bonding, aggression, delinquency). It is worth noting that our meta-analysis included studies with

JOURNAL OF Research on Adolescence

TABLE 3 Single-moderator analyses for positive adjustment outcomes.

Moderators	Estimate	df	95% CI	*p*	tau^2	Omega^2
Overall ES	−0.132	34.45	[−0.171, −0.009]	<.001	.010	.004
Type of outcome						
ACAD (*k* = 49)	−0.151	15.32	[−0.210, −0.090]	<.001	.009	.004
PROS (*k* = 65)	−0.057	8.41	[−0.110, −0.004]	.037		
SCR (*k* = 98)	−0.155	23.69	[−0.193, −0.116]	<.001		
Informants						
CC (*k* = 41)	−0.109	26.31	[−0.146, −0.071]	<.001	.009	.004
PP (*k* = 10)	−0.182	13.96	[−0.243, −0.120]	<.001		
Mixed (*k* = 161)	−0.117	1.78	[−0.423, 0.212]	.212		
Age						
Below 12 (*k* = 59)	−0.085	6.39	[−0.149, −0.020]	.020	.011	.004
12 or older (*k* = 142)	−0.139	23.70	[−0.192, −0.086]	<.001		
Gender						
Mostly Girls (*k* = 102)	−0.145	24.40	[−0.196, −0.093]	<.001	.011	.004
Mostly Boys (*k* = 90)	−0.131	18.81	[−0.204, −0.056]	.002		
Parent education						
Low (*k* = 48)	−0.188	11.80	[−0.267, −0.106]	<.001	.011	.004
Middle/Upper (*k* = 121)	−0.084	11.48	[−0.149, −0.018]	.017		
Country						
USA (*k* = 178)	−0.129	23.24	[−0.175, −0.082]	<.0001	.007	.004
China (*k* = 23)	−0.162	5.91	[−0.231, −0.009]	.002		
Study quality						
Low risk of bias (*k* = 172)	−0.154	1.00	[−0.467, 0.193]	.112	.011	.004
Moderate risk of bias (*k* = 21)	−0.144	25.57	[−0.193, −0.094]	<.001	–	–
High risk of bias (*k* = 19)	−0.078	6.13	[−0.162, 0.008]	.086	–	–

heterogeneous samples of families. Nearly half of the reported effects came from studies with parents with some form of higher education, who may experience less psychological stress or stigma connected to their financial situation due to more empowerment, access to wider social networks, and greater professional opportunities that can potentially increase feelings of control over their financial future. Conversely, low SES parents may be more likely to experience financial stress and rely on emotion-focused coping strategies, partly due to reduced perceived control over their financial situation (e.g., Caplan & Schooler, 2007). This could have diluted the overall effect size in our meta-analysis, leading to weaker associations, namely for externalizing problems.

The moderating effect of parental education was significant only for positive adjustment outcomes, with notably stronger effects observed in studies involving parents with lower levels of education. It is worth noting that parental education was reported in only 72% of the studies, and there were few studies with parents with *upper education*. Consequently, we had limited information on this variable to compare the three categories within the moderator and fully assess the role of parent education in the analyses. We could only establish comparisons between studies with parents with *low* vs. *middle/upper* education, with the latter category being largely composed of middle education parents.

We did not find a moderating effect of age in the current selection of studies. Our findings could have been affected by the sample composition, in particular the mean ages of children and adolescents participating in the included studies. Although children's mean age ranged from 6 to 16 years, most study effects covered children younger than 14 years (72% of the effects), so therefore not well into adolescence. As mentioned previously, adolescence can be a particularly vulnerable period with higher levels of emotional reactivity, self-consciousness, and social anxiety (e.g., Silvers et al., 2012; Somerville, 2013). It is therefore plausible that the association between perceived economic hardship and adjustment problems would have been stronger if studies with older samples had been included. Moreover, gender had no significant moderator effect in our study and our hypothesis for stronger effects in studies with a higher proportion of (teenage) girls was not confirmed. In fact, girls have been found to be more likely to perceive economic hardship than boys (e.g., Fröjd et al., 2006), but the literature is scarce with regard to gender differences in the strength of the association between perceived economic hardship and child outcomes. It is, once more, possible that stronger effects would

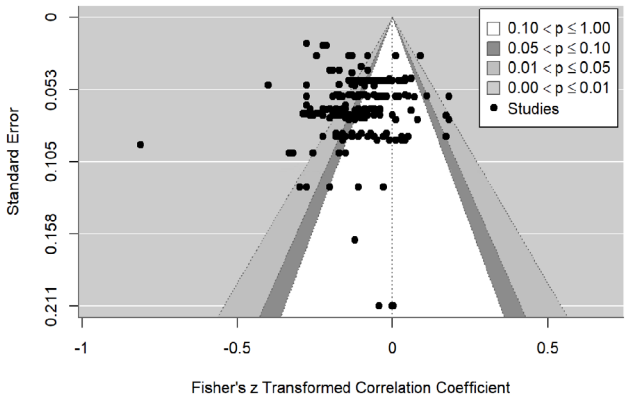

FIGURE 3 Contour-enhanced funnel plot for positive adjustment outcomes.

have been found for studies with a higher proportion of adolescent girls if more articles with older samples had been included. It is also a possibility that moderation by age and gender differs across specific indicators (e.g., aggression, delinquency). In fact, some studies have shown disparate results across specific problematic behaviors, with, for example, aggression tending to decrease with age and substance abuse increasing during adolescence, while for gender, boys have shown higher levels of externalizing behaviors than girls but just before adolescence (e.g., Bongers et al., 2004). But once more, these findings are not directly pertaining precisely to the relation between perceived economic hardship and child outcomes.

We did not have enough articles in our meta-analysis to analyze specific indicators within internalizing/externalizing problems, and our study was therefore underpowered to detect such effects. Moreover, given the limited number of studies, we conducted separate single-moderator analyses, rather than a full multiple-moderator model that could test, for example, the combined effect of age and gender. Moderator analyses are often subject to power issues with a relatively small number of articles due to the limited number of studies per category in each moderator.

For negative adjustment outcomes, the informant was a significant moderator. The mean effect sizes were stronger for studies where parents reported on perceived economic hardship, i.e., PP and Mixed (almost entirely composed of PC), which yielded stronger effects when compared to CC. It is expected that parents' perceptions would translate into more tangible family influences related to economic hardship, reflected, therefore, in stronger associations between the exposure and outcome variables, since children's perceptions may not always correspond to the real family economic situation (De Haan & MacDermid, 1999). With regard to publication status, only one unpublished study was retrieved, so we could not test the role of publication type. Finally, the quality of the included studies was not a significant moderator, neither for positive nor for negative adjustment studies.

The strengths of our meta-analysis include (i) the precise focus of the exposure variable (i.e., *perceived economic hardship* – as opposed to more general measures of hardship including also income or social benefits); (ii) inclusion of both positive adjustment and negative adjustment outcomes (with further designation of specific outcome types within each category); (iii) use of advanced meta-analytic methods to handle dependencies in the data, and (iv) examination of the methodological quality of included studies. In fact, our standardized quality appraisal of the studies included in the meta-analysis revealed good methodological quality based on all parameters, except for the criterion referring to the quality of the measure used to assess subjective economic hardship. Most articles included ad hoc measures developed for specific studies or used adapted versions of standardized measures, not always validated, or not including reliability data on the study sample. This seems to be a shortcoming in the field, suggesting the need to devise reliable standardized measures assessing perceived economic hardship.

Limitations and implications for future research

Our study had some limitations that need to be pointed out. The most important one is related to the fact that our meta-analysis did not include enough longitudinal studies and so we cannot draw conclusions as to the stability of the effects found for the association between perceived economic hardship and child/adolescent outcomes. Initially, our aim was to include both cross-sectional and longitudinal studies, but there was an insufficient number of longitudinal effects available to perform the appropriate analyses. We have conducted supplementary analyses with the few available longitudinal studies, which pointed to similar, albeit smaller effects, as expected for longitudinal associations. However, these analyses included only seven articles and did not include moderator or publication bias analyses. Hence, it is important to note that our effect sizes are small in magnitude and limited to contemporaneous associations.

Moreover, we found heterogeneity of effect sizes across studies that we are not able to account for with our chosen moderators. The unaccounted-for heterogeneity can be partly explained by other variables not assessed in this study. Furthermore, we cannot rule out that heterogeneity in the results could be, at least partly, explained by methodological aspects such as the quality of the economic hardship measures, since we did not have enough power to detect such sources of variability. Hence, a substantial portion of heterogeneity remains unexplained, indicating the need for future research to identify additional moderating variables.

With regard to mediators in the FSM, we did not include previously studied mediating variables such as parent distress, parenting practices, and the quality of the marital relationship in our meta-analysis. In this sense, our study tested only a limited portion of the FSM (Conger & Conger, 2008), including only the predictor and outcome variables. Testing the full model including its mediators would have required a different kind of analysis design (MASEM; Meta-analytic Structural Equation Modeling) that was beyond our initial goal. Furthermore, although some of the studies included in

JOURNAL OF Research on Adolescence

TABLE 4 Single-moderator analyses for negative adjustment outcomes.

Moderators	Estimate	df	95% CI	*p*	tau^2	omega^2
Overall ES	0.177	31.46	[0.129, 0.225]	<.001	.013	.009
Type of outcome						
EXT ($k = 64$)	0.130	21.67	[0.077, 0.182]	<.001	.013	.008
INT ($k = 62$)	0.217	26.28	[0.162, 0.272]	<.001		
Informants						
CC ($k = 24$)	0.106	22.51	[0.065 0.146]	<.001	.011	.006
PP ($k = 39$)	0.245	12.95	[0.176, 0.311]	<.001		
Mixed ($k = 69$)	0.260	7.34	[0.040, 0.455]	.027		
Age						
Below 12 ($k = 23$)	0.112	6.39	[−0.048, 0.174]	.005	.011	.003
12 or older ($k = 82$)	0.179	19.86	[0.120, 0.236]	<.001		
Gender						
Mostly girls ($k = 88$)	0.192	19.36	[0.123, 0.259]	<.001	.014	.009
Mostly boys ($k = 41$)	0.154	9.77	[0.108, 0.200]	<.001		
Parent education						
Low ($k = 51$)	0.188	12.92	[0.115, 0.259]	<.001	.010	.003
Middle/Upper ($k = 29$)	0.148	5.21	[0.082, 0.213]	.002		
Country						
USA ($k = 90$)	0.198	18.71	[0.124, 0.270]	<.001	.014	.011
China ($k = 18$)	0.180	6.76	[0.116, 0.243]	<.001		
Study quality						
Low risk of bias ($k = 92$)	0.129	1.00	[−0.111, 0.355]	.092	.012	.009
Moderate risk of bias ($k = 28$)	0.207	21.55	[0.144, 0.268]	<.001		
High risk of bias ($k = 12$)	0.094	6.98	[0.026, 0.161]	.014		

this meta-analysis reported some kind of measure of parental distress, parenting practices, and quality of the marital relationship, in many instances, there was no uniformity as to the constructs assessed, the measures employed, or the target parent reporting on exposure and outcome. Future studies should consider the role of these mediator variables and employ MASEM techniques to better understand the pathways between economic hardship and child outcomes.

This study has attempted to fill a gap in the literature by focusing on subjective (perceived) economic hardship and child outcomes. Although wealthier families may experience lower levels of perceived economic hardship, dynamic factors like income loss, divorce, investment failures, or social comparison can have a strong impact on individuals' perception of their economic situation. Relative income resulting from social comparison with neighbors and friends predicts child internalizing and externalizing problems over and above actual family economic status (Sorhagen & Wurster, 2017). Consistently, Schenck-Fontaine and Panico (2019) found that subjective financial stress without income poverty is equally associated with higher levels of child behavior problems, despite the comparatively worse effects for the combination of subjective financial stress and income poverty.

However, despite the importance of perceived economic hardship beyond SES or income status, a comprehensive appraisal of the unique contributions of perceived economic hardship to child outcomes is warranted. In fact, another important limitation of this study is that we did not test for the association between perceived economic hardship and child outcomes over and above an encompassing measurement of objective hardship. Most articles included in this meta-analysis ($k = 50$) included a measure of objective economic hardship (e.g., household income), and in 80% of these studies, the authors investigated the effect of subjective economic hardship over and above that of objective economic hardship. However, most studies did not isolate the unique contribution of objective hardship, controlling instead for these objective measures together with other covariates in multivariate analysis (e.g., path analysis, structural equation modeling), without specifying individualized descriptive statistics for each covariate. Moreover, many times, the studies did not provide homogeneous measures of objective economic hardship, such as income figures that we could use as moderators in the current study, using instead varied indicators such as social benefits, poverty thresholds, or income ratios adapted to different countries. Hence, in this meta-analysis, we have only controlled for parent education, but we were unable to control for other components of the complex construct of "objective economic hardship", such as family income, occupation, and social/community

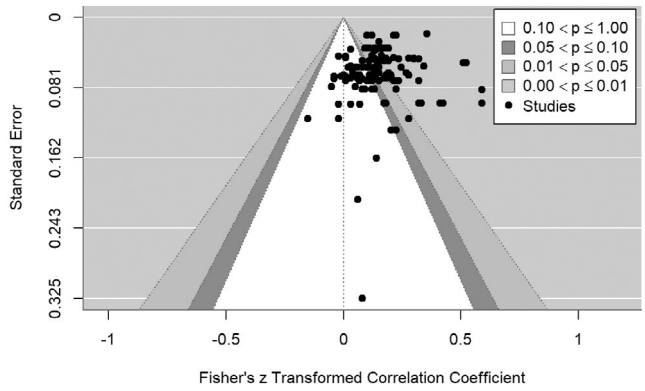

FIGURE 4 Contour-enhanced funnel plot for negative adjustment outcomes.

status variables. The measurement of objective SES is important because it conveys information about the family's real socio-economic context, which is otherwise difficult to measure. Future studies employing MASEM should test the contribution of subjective economic hardship over and above that of objective indicators. Also, it is important for future studies to consider different components of SES, such as income, education, occupation, as well as social class or other markers of social position (e.g., Diemer et al., 2013) and acknowledge not only their separate contributions to child development outcomes but also their temporal dynamic nature, such as fluctuating salaries, the emergence of family debts/loans, and other specific family circumstances (e.g., Duncan & Magnuson, 2003; Gershoff et al., 2007). Likewise, it is important to bear in mind their distinct contribution to different types of child outcomes and different contextual/community factors (Peverill et al., 2020).

Another limitation of our study is that we used only the field "title" in our database searches. Database search by "title/abstract/keywords" yielded, in our case, an unmanageable number of hits since we did not include any search terms covering the outcome variable to avoid constraining our child/adolescent outcomes. Moreover, with regard to our searches, there was considerable variation in the literature with regard to the terminology used to describe our exposure variable. Besides *perceived economic hardship*, other terms such as *economic/financial pressure, worries, anxiety, stress*, and *strain* were often used interchangeably, which made it somewhat difficult to identify all the subjective indicators of economic hardship. Moreover, since we wanted to capture a broad range of child/adolescent adjustment outcomes, we did not limit our search terms for these variables. These aspects posed challenges in guaranteeing full coverage of the relevant studies. However, we are confident that our study selection depicts the current state of the art with regard to the literature on the association between perceived economic hardship and child/adolescent adjustment outcomes.

It is noteworthy that our study included mostly published articles. Study selection was based on a large pool of databases, including those devoted to gray literature such as ProQuest Database for Theses and Dissertations, which were inspected up to May 2025. However, only one thesis fulfilled our criteria. It was included in our analyses, but the moderator role of type of publication could not be ascertained. Finally, our study included only typically developing children, and so our conclusions can only be applied to normative samples, and no assumptions can be drawn about specific populations such as children with developmental delays, chronic physical illnesses, and so on.

CONCLUSIONS

This meta-analytic study yielded important conclusions with respect to the association between economic hardship and various child/adolescent adjustment outcomes. We confirmed our hypotheses that perceived economic hardship predicts child/adolescent outcomes, both for positive and negative adjustment indicators, in the expected directions. These findings have implications for research and mental health practices with children and youth, by informing strategies to mitigate the effects of economic hardship, or rather, their *perception,* even in the absence of a real economic struggle. Examples of these strategies could include: (i) interventions at the individual level, like cognitive restructuring initiatives to help children reevaluate their families' economic situation in more normative ways, in order to reduce feelings of shame/humiliation; (ii) interventions at the family level, such as working with parents to help them acknowledge how their own financial stress and perceptions of economic hardship can influence children's wellbeing; (iii) interventions at the school level, such as universal screening to identify students suffering from distress caused by their perception of economic stress, regardless of their actual family financial situation; policies to reduce the visibility of economic situation gaps among students (e.g., dress code).

Future studies are warranted to investigate yet other variables of the model not contemplated by our design such objective financial hardship and issues related to differences in parent psychological adjustment, parenting practices, and family/marital relationships. Understanding these family stress and parenting pathways, often identified as mediating mechanisms between family economic hardship and child adjustment (see e.g., Duncan et al., 2015), would be an important contribution for understanding the complex impact of economic hardship on child well-being. Furthermore, studies should also strive to include longitudinal designs, as well as to clarify the confounding issue of using different constructs and types of measures to assess predictor, outcome, and mediating variables implicated in the explanatory models relating economic hardship to child adjustment.

AUTHOR CONTRIBUTIONS

LAR conceived the study, participated in its design and coordination, and drafted the manuscript; SK participated in the design, conducted the statistical analyses, and contributed to editing the manuscript. Both authors read and approved the final version of the manuscript.

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We have no known conflict of interest to disclose.

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CONSENT

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*References marked with an asterisk indicate studies included in this meta-analysis.

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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