JAPRA
Jurnal Pendidikan Raudhatul Athfal
P-ISSN. 2527-4325 E-ISSN. 2580-7412

Family Engagement Programs in Early Childhood Education: An Umbrella Review

Nurul Shofiatin Zuhro
Universitas Sebelas Maret
Jalan Ir. Sutami 36 Kentingan, Jebres, Surakarta, Jawa Tengah, Indonesia 57126
Email: nurulzuhro@staff.uns.ac.id[1]

Received: November 18, 2025., Revision: December 20, 2025., Accepted: December 30, 2025.

Abstrak

Keterlibatan keluarga merupakan faktor penentu utama keberhasilan dalam pendidikan anak usia dini; namun, bukti mengenai program keterlibatan keluarga tersebar di berbagai tinjauan sistematis dengan fokus yang berbeda-beda. Penelitian ini bertujuan untuk mensintesis tinjauan sistematis mengenai program keterlibatan keluarga di lingkungan pendidikan anak usia dini, yang mencakup jenis program, hasil, dan kekuatan buktinya, serta faktor-faktor yang memfasilitasi dan menghambat keterlibatan tersebut. Desain tinjauan umbrella (umbrella review) digunakan sesuai dengan pedoman JBI, dengan pelaporan berdasarkan PRIOR. Pencarian di Scopus yang dilakukan pada 29 September 2026 menghasilkan 865 catatan; setelah proses deduplikasi, penyaringan judul dan abstrak, serta tinjauan teks lengkap, delapan tinjauan dimasukkan. Penyaringan dilakukan oleh seorang peninjau tunggal, dan tidak ada protokol yang didaftarkan. Kualitas metodologis dievaluasi menggunakan AMSTAR 2, dan temuan disintesis secara naratif menggunakan kerangka kerja Epstein dan Bronfenbrenner. Program-program tersebut didominasi oleh jenis pembelajaran di rumah, terutama dalam program STEM dan literasi, sementara kegiatan sukarela tidak dijelaskan secara eksplisit dalam tinjauan yang disertakan. Satu-satunya meta-analisis melaporkan efek kecil dari intervensi literasi awal berbasis keluarga (d = 0,33), yang lebih kecil pada sampel berpenghasilan rendah (d = 0,14); tinjauan lain secara naratif melaporkan hubungan dengan keterampilan kognitif, kesiapan sekolah, dan perkembangan sosial-emosional. Faktor-faktor pendukung meliputi motivasi orang tua, dukungan sekolah dan guru, serta layanan yang responsif terhadap budaya, sedangkan hambatan meliputi kendala keuangan dan prasangka sosial. Tujuh dari delapan tinjauan dinilai memiliki tingkat keyakinan yang sangat rendah; oleh karena itu, temuan ini merupakan peta awal dari bukti yang tersedia dan menyoroti perlunya tinjauan berkualitas tinggi dalam konteks anak usia dini dan Raudhatul Athfal di Indonesia.

Kata kunci: *AMSTAR 2, pendidikan anak usia dini, keterlibatan keluarga, tinjauan umum atas berbagai tinjauan, keterlibatan orang tua, tinjauan umbrella*

Abstract

Family engagement is a key determinant of success in early childhood education, yet evidence on family engagement programs is scattered across many systematic reviews with differing foci. This study aimed to synthesize systematic reviews of family engagement programs in early childhood education settings, covering program types, outcomes and the strength of their evidence, and the factors that facilitate and hinder engagement. An umbrella review design was used following JBI guidance, with reporting based on PRIOR. A Scopus search conducted on 29 September 2026 yielded 865 records; after deduplication, title and abstract screening, and full-text review, eight reviews were included. Screening was performed by a single reviewer, and no protocol was registered. Methodological quality was appraised with AMSTAR 2, and findings were synthesized narratively using Epstein's and Bronfenbrenner's frameworks. Programs were dominated by the learning-at-home type, particularly in STEM and literacy programs, while volunteering was not explicitly described in the included reviews. The only meta-analysis reported a small effect of family-based emergent literacy interventions (d = 0.33), which was smaller in low-income samples (d = 0.14); other reviews narratively reported associations with cognitive skills, school readiness, and social-emotional development. Facilitating factors included parental motivation, school and teacher support, and culturally responsive services, whereas barriers included financial constraints and social prejudice. Seven of the eight reviews were rated critically low in confidence; the findings therefore constitute a preliminary map of the available evidence and highlight the need for high-quality reviews in Indonesian early childhood and Raudhatul Athfal settings.

Keywords: AMSTAR 2, early childhood education, family engagement, overview of reviews, parental involvement, umbrella review

Introduction

Family and parental engagement is widely regarded as one of the factors most consistently associated with children's learning success in early childhood education. A meta-analysis by Ma et al. (2016) of 46 studies and 100 effect sizes found a strong positive correlation (r = .509) between parental involvement and children's learning outcomes in early childhood and the early elementary grades. Similar findings were reported in a recent systematic review and meta-analysis (Józsa & Oo, 2026) of 26 studies, which showed that, among the parental factors examined, parental involvement had the strongest association

with children's school readiness, surpassing socioeconomic status, the home learning environment, and parent–teacher collaboration. Together, these findings underscore that family engagement is not merely supplementary but one of the key determinants of the success of early childhood education programs.

This significance has given rise to numerous programs that explicitly involve families or parents in early childhood education, whether through parent education (parenting), home–school communication, or home-based involvement (learning at home). The literature on these programs is dispersed across a range of terms that are often used inconsistently, such as family engagement, parental involvement, and parent participation, although involvement and engagement are better understood as points on a continuum (Goodall & Montgomery, 2014), and each strand has been examined by a considerable number of systematic reviews. The systematic review and meta-analysis (Józsa & Oo, 2026) on school readiness is one recent example; together with other reviews that focus more narrowly on particular program types or populations, this growing body of work indicates that the evidence at the review level is now substantial enough to warrant further synthesis.

Nevertheless, a preliminary search of [databases, e.g., Scopus, ERIC, Epistemonikos, PROSPERO, and the Campbell Library] conducted on [date] identified no review-level synthesis (i.e., a review of reviews or umbrella review) has explicitly and comprehensively integrated systematic reviews of family engagement programs in early childhood education settings while simultaneously addressing the range of program types, the strength of evidence for their outcomes, and the factors that facilitate and hinder them. Existing reviews each focus on a specific program type (e.g., literacy, STEM, or mathematics), a specific population (e.g., Indigenous families or Gypsy, Roma, and Traveller families), or a specific outcome (e.g., school readiness), leaving the broader picture of what is and is not yet known at the review level fragmented. This study seeks to address this gap through an umbrella review approach.

Accordingly, this study aims to synthesize systematic reviews of family and parental engagement programs in early childhood education settings, including PAUD (early childhood education centers), TK (kindergartens), RA (Raudhatul Athfal, Islamic kindergartens), KB (playgroups), and preschools. Specifically, it examines the types of programs reported, the strength and consistency of the evidence for their outcomes, and the factors that facilitate and hinder their effectiveness.

To group and interpret findings across reviews consistently, this study draws on two complementary conceptual frameworks. The school, family, and community partnership framework of Epstein (2011) was used to classify programs into six types of involvement, while the ecological model of Bronfenbrenner (1979) was used, in adapted form, to categorize facilitating and hindering factors at four analytic levels: individual (person characteristics of parents; Bronfenbrenner & Morris, 2006), family and school (microsystems and their home–school linkages), and cultural and policy (exo- and macrosystem influences). By synthesizing evidence from systematic reviews conducted across countries, this study is expected to provide a more comprehensive picture of the forms, strength of evidence, and determinants of family engagement, thereby offering a foundation for practitioners and researchers in PAUD, TK, and RA settings in Indonesia, where family involvement in education units, including early childhood education units, is formally regulated (Kementerian Pendidikan dan Kebudayaan, 2017).

Methods

This study employed an umbrella review design informed by the Joanna Briggs Institute (JBI) guidance for umbrella reviews (Aromataris et al., 2015), Chapter V of the Cochrane Handbook on overviews of reviews (Pollock et al., 2023), with reporting guided by the Preferred Reporting Items for Overviews of Reviews (PRIOR) (Gates et al., 2022) and the PRISMA flow diagram (Page et al., 2021). An umbrella review is appropriate when numerous reviews on a topic already exist and the aim is to summarize them (Aromataris et al., 2015), which enables this study to map the structure of the existing research. This umbrella review focuses on family engagement programs in early childhood education settings. The review proceeded through six steps: (1) assessing the feasibility of an umbrella review; (2) formulating the review questions, conceptual framework; (3) conducting the search and defining the inclusion criteria; (4) selecting reviews and extracting data; (5) appraising methodological quality and analyzing the overlap of primary studies; and (6) synthesizing and reporting the findings. No protocol was registered or published for this umbrella review.

1. Umbrella Review Feasibility	Pilot search in Scopus to confirm that a sufficient number of systematic reviews on family engagement in early childhood education are available
▼	
2. Review Questions,	Formulation of the PICO components, three review questions, and

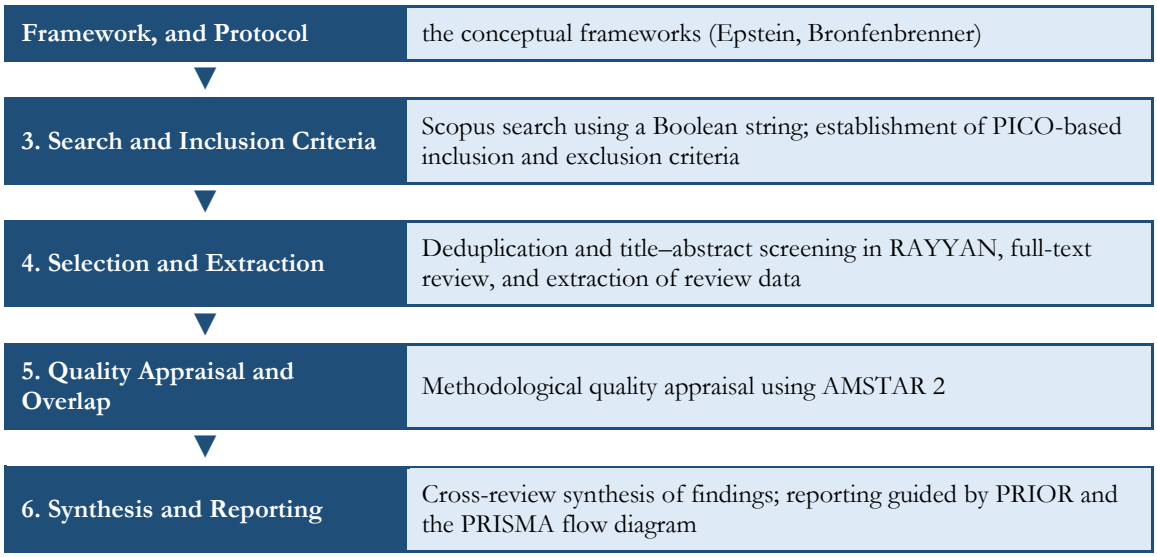


Figure 1. Research steps
Adapted from Aromataris et al., 2015, 2024

The literature search was conducted in the Scopus database. Keywords relevant to the research topic were formulated as a Boolean string and entered into the Advanced Search field of Scopus. The search string was as follows: TITLE-ABS-KEY (("family engagement" OR "family involvement" OR "parental involvement" OR "parent engagement" OR "parent participation" OR "family participation" OR "caregiver involvement") AND (program* OR intervention* OR initiative* OR strategy* OR activit*) AND ("early childhood education" OR "early childhood" OR preschool* OR kindergarten OR "early years" OR "young children")). The search results were then exported to and processed in the RAYYAN web application (Ouzzani et al., 2016), which was used to detect and remove duplicate records, screen titles and abstracts against the inclusion and exclusion criteria, and document the decision and rationale for each record included or excluded. Screening was conducted by a single author owing to limited research resources. Although every decision was documented in RAYYAN and uncertain records were re-examined at the full-text stage, this does not substitute for independent duplicate screening, which is acknowledged as a limitation. Subsequently, the methodological quality of each review was appraised using AMSTAR 2, an instrument developed to appraise systematic reviews of healthcare interventions that include randomized or non-randomized studies, or both; it comprises 16 items with seven critical domains, yielding an overall confidence rating of high, moderate, low, or critically low (Shea et al., 2017).

Results and Discussion

Definition and Feasibility of the Umbrella Review

Although the literature on family engagement in early childhood education programs is extensive, reviews that explicitly focus on family engagement programs in PAUD settings remain limited and are dispersed across various terms, such as family engagement, parental involvement, and parent participation. At this stage, the researcher conducted a brief pilot search comprising the following steps: (1) searching Scopus for combinations of keywords related to family or parents (family, parent*), early childhood education programs (early childhood, preschool, kindergarten), and systematic review or meta-analysis; (2) recording every review retrieved; and (3) flagging relevant reviews. The results of the pilot search are presented in the following table.

Table 1. Literature feasibility results and decision

Pilot search results	Decision
Numerous systematic reviews explicitly address early childhood education programs that involve families or parents	Proceed with an umbrella review as the research methodology

Based on the results of the literature feasibility assessment in the table above, the researcher decided to proceed with the literature review using an umbrella review approach.

Review Questions, Conceptual Framework, and Review Protocol

The review questions were formulated using the PICO framework (Population, Intervention, Comparison, Outcome), adapted for a review of reviews (Aromataris et al., 2015). In an umbrella review, the unit of analysis is the systematic review rather than the primary study; therefore, each PICO element is interpreted at the review level. The PICO components are presented in Table 2 below.

Table 2. PICO components

Component	Definition
Population (P)	Families, parents, or caregivers of young children (aged 0–6/8 years), including both fathers and mothers regardless of role
Phenomenon or intervention (I)	Early childhood education programs (PAUD, TK, RA, KB, preschool) that involve families or parents
Comparison (C)	Other family engagement programs, usual practice, or no program, where reported in the review
Outcome (O)	Outcomes for children, parents, and schools, as well as factors that facilitate and hinder family engagement
Review design	Systematic review, with or without meta-analysis

Based on the PICO framework above, three review questions were formulated:

1) What types of family or parental engagement programs in early childhood education settings have been reported in systematic reviews?
2) What do these reviews conclude about the outcomes of these programs, and how strong and consistent is the evidence?

3) What factors facilitate and hinder the effectiveness of family engagement programs, and what are the implications for the delivery of PAUD, TK, RA, and preschool education?

These three questions were addressed using two complementary conceptual frameworks, which served as a means of grouping findings across reviews. The two frameworks are as follows:

1. Epstein (school, family, and community partnerships), which identifies six types of involvement: parenting, communicating, volunteering, learning at home, decision making, and collaborating with the community. This framework serves as the primary lens because its six-type typology provides established, distinguishable categories for classifying school-initiated family involvement practices, although it was originally developed for K–12 schools.
2. Bronfenbrenner (ecological model), which groups facilitating and hindering factors at the individual, family, school, and cultural or policy levels.

Search and Inclusion Criteria

In an umbrella review, the search targets systematic reviews; therefore, the search string combined topic terms with review-type terms (e.g., "systematic review", "meta-analy*", "scoping review", "research synthesis"). Applying the Boolean string in Scopus retrieved 865 records. These records were exported in .RIS format and deduplicated in RAYYAN, which identified and resolved 16 duplicate records.

To ensure that the retrieved records aligned with the focus of the study, inclusion and exclusion criteria were established as the basis for screening. These criteria were derived from the PICO components and applied in RAYYAN to guide title and abstract screening. The criteria are presented in Table 3.

Table 3. Inclusion and exclusion criteria based on PICO components

Component	Inclusion Criteria	Exclusion Criteria
Population (P)	Families, parents, or caregivers of young children (aged 0–6/8 years), including both fathers and mothers regardless of role	Reviews addressing only children of elementary school age or older, or involving only educators without a family or parental component
Phenomenon or intervention (I)	Early childhood education programs (PAUD, TK, RA, KB, preschool) that involve families or parents	Interventions targeting children only, without a family engagement component
Comparison (C)	Other family engagement programs, usual practice, or no program, where reported in the review	Not applied; reviews without a comparison were still included
Outcome (O)	Outcomes for children, parents, and schools, as well as factors that facilitate and hinder family engagement	Reviews that did not report outcomes for children, parents, or schools, or facilitating and hindering factors

Table 7 summarizes the article selection process. Of the 865 records identified in the initial search, 16 duplicates were removed, and title and abstract screening left 124 records. Full-text review identified 28 articles that met the PICO criteria and employed a review methodology, eight of which met all criteria and were included in the final synthesis.

Selection, Extraction, Quality Appraisal, and Overlap

Data from the eight eligible reviews were then extracted using a review extraction matrix with the following columns: review identity, primary studies, scope, program type, outcomes, key findings, and review methods.

Table 4. Review extraction matrix

Article No./Review Identity	Primary Studies	Scope	Program Type	Outcomes	Key Findings	Review Methods
107 (Alibek & Akhmetova, 2025). Exploring cognitive skill development in STEM education for kindergarten children: A systematic review. Eurasia Journal of Mathematics, Science and Technology Education. https://doi.org/10.29333/ejmste/17346	36 studies (from 614 initial records)	Kindergarten/preschool children; search conducted on June 15, 2025	Play-, inquiry-, and project-based STEM/STEAM education in early childhood settings; families as supporters of learning	Children: problem solving, creativity, critical thinking, comprehension	STEM/STEAM supports cognitive skills (problem solving n = 10, creativity n = 10, comprehension n = 8, critical thinking n = 5); family involvement strengthens children's cognitive development	Systematic review (PRISMA, five stages); Web of Science and Scopus; descriptive document analysis; reliability of 85% (Miles & Huberman)
162 (Charlton et al., 2025) Approaches that support Indigenous children and families in the transition to school: A systematic review. The Australian Educational Researcher. https://doi.org/10.1007/s13384-025-00911-8	12 articles on 9 programs	Indigenous children and families during the transition to formal schooling; search conducted May–July 2024	Play-based learning, family engagement strategies, integrated health–education–social services, two-generation approaches	Children: school readiness, cognitive and social-emotional development. Families: family well-being. Factors: Indigenous leadership, cultural responsiveness, holistic family support, flexible services	Family engagement and two-generation approaches had positive effects; community-led, culturally responsive programs were effective; evaluation of school- and community-level impacts remains limited	Systematic review; electronic databases and gray literature; appraisal of academic quality and alignment with Indigenous values
252 (Otero-Mayer et al., 2026) Family Involvement in Early Childhood Education: A Systematic Review of its Measurement. Early Childhood	Number not reported in the abstract	Early childhood education; publications increasing since 2010, predominantly from	Measurement practices for family involvement in early childhood education	Dimensions of involvement: home-based, school-based, and home–school communication	Home-based involvement was the most extensively examined; standardized measurement instruments are needed	Systematic review (PRISMA); databases not specified in the abstract

Education Journal. https://doi.org/10.1007/s10643-025-02024-4		the United States; 68% of studies involved both fathers and mothers				
291 (Ponce et al., 2026) Engagement in early childhood education: A systematic review of Gypsy, Roma and Traveller populations in Europe. Review of Education. https://doi.org/10.1002/rev3.70180	5 qualitative studies	Gypsy, Roma, and Traveller (GRT) families in Europe; English-language articles	Participation and engagement of GRT families in early childhood education services	External barriers (financial constraints, prejudice) and internal barriers (parental views, culture); external facilitators (school and teacher support, parental participation) and internal facilitators (parental motivation and aspirations)	GRT participation in early childhood education is roughly half that of the majority population; school and teacher support and parental motivation are key to engagement	Systematic review (PRISMA); academic databases and gray literature; quality appraisal; thematic synthesis using NVivo 12
841 (Manz et al., 2010) A descriptive review and meta-analysis of family-based emergent literacy interventions. Early Childhood Research Quarterly. https://doi.org/10.1016/j.ecresq.2010.03.002	31 articles; 14 experimental/quasi-experimental studies included in the meta-analysis	Children aged 2–6 years; focus on low-income, ethnic-minority, and linguistically diverse families	Family-based emergent literacy interventions delivered by caregivers	Children: emergent literacy skills	The existing evidence has significant limitations in its generalizability to low-income, ethnic-minority, and linguistically diverse families	Descriptive review and meta-analysis
19 (Ishak et al., 2025) Characteristics of ESL family literacy programmes: a systematic literature review. Cogent Education. https://doi.org/10.1080/2331186X.2025.2494454	7 articles	ESL families with preschool and elementary school children; publications from 2015–2024	Family literacy programs (e.g., Bedtime Story Shelf, Ready and Healthy for Kindergarten) at home, at school, and in libraries; duration of 1–9 months	Program characteristics; outcomes for children/parents not explicitly reported	Reading activities were the core component; multimodal learning resources (books, audio/multimedia, writing materials)	Systematic literature review (PRISMA); Scopus, Taylor & Francis, ERIC, ScienceDirect, ResearchGate
304 (Salvatierra & Cabello, 2022) Starting at Home: What Does the Literature Indicate about Parental Involvement in Early	11 documents (1995–2021)	Preschool children	Parental involvement in STEM activities at home and at school	Children: STEM learning, interest, and self-efficacy. Parents: involvement and valuing of	STEM activities fostered parental involvement, increased parents' valuing of STEM, and positively	Scoping review following the PRISMA framework; major education databases

Childhood STEM Education? Education Sciences. https://doi.org/10.3390/educsci12030218				STEM	affected children's learning; research in this area remains scarce	
336 (Eason et al., 2022) Widening the lens of *family math engagement*: A conceptual framework and systematic review. Developmental Review. https://doi.org/10.1016/j.dr.2022.101046	Number not reported in the abstract	Children from birth to the early elementary years	Family math engagement at home and across contexts	Children: mathematics knowledge and achievement. Factors: sociocultural, community, and developmental	Proposes an expanded conceptual framework; gaps remain in understanding family math engagement across contexts and developmental stages	Systematic review with a sociocultural–developmental conceptual framework; databases not specified in the abstract

A MeaSurement Tool to Assess Systematic Reviews, version 2 (AMSTAR 2), is widely used to appraise systematic reviews in overviews of reviews, although JBI recommends its own Critical Appraisal Checklist for Systematic Reviews and Research Syntheses (Aromataris et al., 2015). AMSTAR 2 appraises the review itself rather than the primary studies it includes (Shea et al., 2017). AMSTAR 2 was designed for systematic reviews of healthcare interventions; Puljak et al. (2023) found that only 7 of its 16 items were applicable to all four types of non-intervention reviews they examined (diagnostic, aetiology, prevalence, and prognostic). Consequently, some AMSTAR 2 items are not applicable in the context of education. The 16 AMSTAR 2 items are presented in Table 5.

Table 5. AMSTAR 2 items

Item No.	Item Question
1	Did the research questions and inclusion criteria include the components of PICO?
2	Were the review methods established prior to the conduct of the review (protocol), and were any deviations justified? (critical)
3	Did the authors explain their selection of the study designs for inclusion?
4	Did the authors use a comprehensive literature search strategy? (critical)
5	Did the authors perform study selection in duplicate (two independent reviewers)?
6	Did the authors perform data extraction in duplicate?
7	Did the authors provide a list of excluded studies and justify the exclusions? (critical)
8	Did the authors describe the included studies in adequate detail?
9	Did the authors use a satisfactory technique for assessing the risk of bias in the primary studies? (critical)
10	Did the authors report on the sources of funding for the primary studies?
11	If a meta-analysis was performed, did the authors use appropriate statistical methods? (critical)
12	If a meta-analysis was performed, did the authors assess the potential impact of risk of bias in the primary studies on the results?
13	Did the authors account for risk of bias in the primary studies when interpreting the results of the review? (critical)
14	Did the authors provide a satisfactory explanation for any heterogeneity observed?
15	If a quantitative synthesis was performed, did the authors investigate publication bias? (critical)

16	Did the review authors report any potential conflicts of interest?

These 16 items were then used to appraise the eight final reviews included in this umbrella review. The results of the AMSTAR 2 appraisal are presented in Table 6.

Table 6. AMSTAR 2 appraisal results

No. Art.	**Appraisal Results**																**AMSTAR 2 Rating**
	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12	I13	I14	I15	I16	
19	PY	N	Y	PY	N	NR	PY	Y	N	N	NA	NA	N	N	NA	Y	Critically low
107	PY	N	NR	PY	NR	NR	PY	Y	N	N	NA	NA	N	Y	NA	Y	Critically low
162	NC	N	NC	Y	Y	NR	PY	NC	Y	N	NA	NA	NR	Y	N	NR	Critically low
252	NC	N	NC	PY	Y	NR	PY	NC	N	N	NA	NA	N	NR	N	NV	Critically low
291	PY	Y	NR	PY	N	NR	PY	Y	Y	N	NA	NA	N	Y	NA	Y	Low
304	NC	N	NC	PY	N	N	N	NC	N	N	NA	NA	N	NR	NA	Y	Critically low
336	PY	N	NR	N	NR	NR	N	Y	N	N	NA	NA	Y	Y	NA	Y	Critically low
841	Y	N	Y	PY	PY	Y	N	Y	N	N	Y	N	N	Y	N	NR	Critically low

Note: I1–I16 denote item numbers; Y = Yes (criterion met); PY = Partial Yes; N = No; NR = Not reported; NA = Not applicable; NV = Not verifiable; NC = Not checked

Most AMSTAR 2 ratings were "critically low." Bojcic et al. (2024) reported that claiming adherence to AMSTAR 2 does not guarantee genuine methodological quality. The fact that most of the reviews included in this study were rated critically low is therefore not an anomaly but a pattern consistent with recent meta-research showing that 81% of systematic reviews explicitly claiming adherence to AMSTAR 2 were nonetheless rated "critically low" (Bojcic et al., 2024), indicating a wide gap between claimed methodological adherence and its actual implementation.

Synthesis and Reporting

The final stage of this umbrella review was synthesis and reporting. Reporting followed the PRIOR guideline (Gates et al., 2022). In summary, of the 865 records identified in the initial search, 849 remained after 16 duplicates were removed, 124 passed title and abstract screening, 28 articles were assessed at the full-text stage, and eight reviews met all criteria and were included in the synthesis. Given that the eight reviews varied in design, population, and reported outcomes, the findings were synthesized narratively (Aromataris et al., 2015; Pollock et al., 2023).

*T*able 7. Review selection process (based on PRIOR and the PRISMA 2020 flow diagram)

Stage	**Action**	**Number of Records Remaining**
Initial Search	Article search in the Scopus database	865
Deduplication	Removal of 16 duplicate articles	849
Title/Abstract Screening	Application of inclusion and exclusion criteria	124

Full-Text Review	Assessment of article content for fit with the research scope and topic	28
Final Inclusion	Articles meeting all search criteria	8

The review selection process is presented using an adaptation of the PRISMA 2020 flow diagram (Page et al., 2021) as shown in Figure 2.

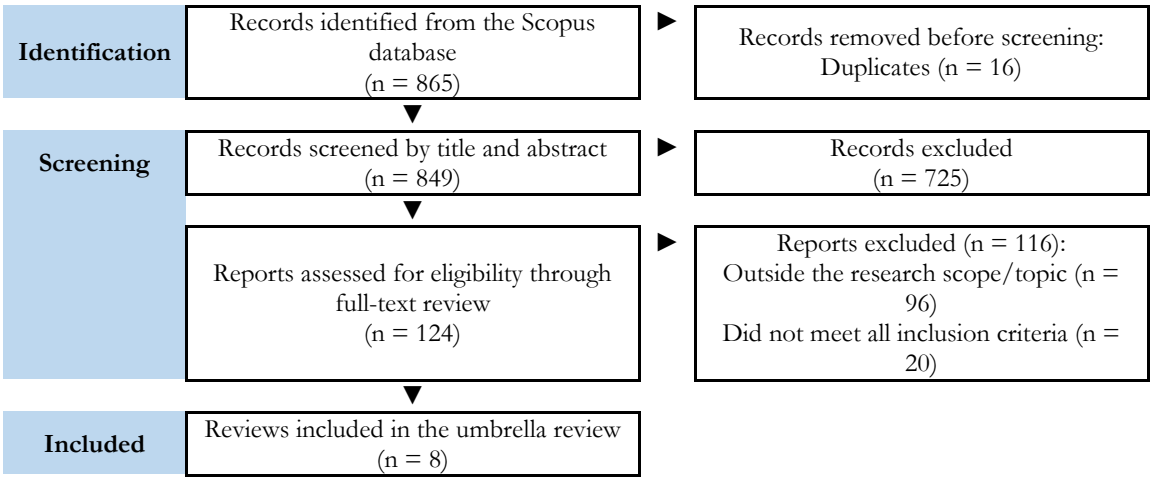


Figure 2. PRISMA 2020 flow diagram of review selection

The synthesis was organized around the three review questions: the types of family engagement programs, program outcomes and the strength of their evidence, and the factors facilitating and hindering engagement. Findings were grouped according to Epstein's six types of involvement and Bronfenbrenner's ecological levels, and the strength of each finding was interpreted in light of the AMSTAR 2 appraisal results in Table 6, most of which fell into the critically low category.

1. Program Types

Thematically, the programs reported in the eight included reviews tended to align with one or two of the involvement types described by Epstein (2011), with learning at home emerging as the most dominant type. Play- and inquiry-based STEM/STEAM programs that involve families as supporters of children's learning at home and at school were identified in a review of STEM in early childhood education (Alibek & Akhmetova, 2025) as well as in a review of home- and school-based STEM (Salvatierra & Cabello, 2022). The same pattern appeared in caregiver-delivered emergent literacy interventions at home (Manz et al., 2010), family literacy programs spanning home, school, and library settings (Ishak et al., 2025), and family math engagement across contexts (Eason et al., 2022). These reviews position the home as the primary arena of involvement, consistent with the learning-at-home type. The decision-making and collaborating-with-community types were more prominent in the review of Indigenous families (Charlton et al., 2025), which reported Indigenous leadership and integrated cross-sector health, education, and social services, as well as

in the review of Gypsy, Roma, and Traveller families (Ponce et al., 2026), which highlighted family participation in early childhood education services. The review on the measurement of family involvement (Otero-Mayer et al., 2026) did not report specific programs but instead mapped the dimensions of involvement into home-based, school-based, and home–school communication categories, which broadly parallel Epstein's learning-at-home, volunteering, and communicating types, respectively. None of the eight reviews explicitly described volunteering-type programs, although the school-based dimension mapped by Otero-Mayer et al. (2026) partly overlaps with this type; given the search strategy and the scope of the included reviews, this absence should not be interpreted as a gap in the primary literature.

2. Outcomes and Strength of Evidence

The only meta-analysis among the included reviews found a small overall effect of family-based emergent literacy interventions (d = 0.33, with significant heterogeneity), which was very small in low-income (d = 0.14) and ethnic-minority samples (d = 0.16) and larger for home-only than for home–ECE interventions (d = 0.47 vs. 0.13) (Manz et al., 2010). The remaining reviews reported narrative associations with children's cognitive achievement, particularly in the domains of STEM (problem solving, creativity, critical thinking, and comprehension; Alibek & Akhmetova, 2025) and mathematics (knowledge and self-efficacy; Eason et al., 2022; Salvatierra & Cabello, 2022), emergent literacy (Ishak et al., 2025; Manz et al., 2010), and school readiness and social-emotional development in Indigenous populations (Charlton et al., 2025).

However, the AMSTAR 2 appraisal in Table 6 shows that seven of the eight reviews received a confidence rating of "critically low," with only the review by (Ponce et al., 2026) rated "low." Accordingly, the claims regarding the cognitive benefits of STEM-, mathematics-, and literacy-based family engagement noted above derive from reviews with reporting weaknesses on general AMSTAR 2 items, such as incomplete reporting of protocols and of excluded studies, and should therefore be regarded as preliminary indications rather than definitive conclusions. Nevertheless, some "critically low" ratings also reflect the limited applicability of AMSTAR 2 to non-intervention reviews in education, including scoping reviews such as Salvatierra & Cabello (2022), so these ratings cannot be interpreted solely as a measure of review quality (Bojcic et al., 2024; Puljak et al., 2023). The review by Manz et al. (2010) explicitly stated that the existing evidence has significant limitations in its generalizability to low-income, ethnic-

minority, and linguistically diverse families, a caveat about external validity that adds a further layer of caution beyond the methodological quality appraisal with AMSTAR 2.

3. Facilitating and Hindering Factors

The facilitating and hindering factors of family engagement reported in the included reviews can be mapped onto four ecological levels (Bronfenbrenner, 1979). At the individual level, parents' motivation and aspirations were the main facilitating factors, whereas unsupportive parental views and attitudes acted as barriers (Ponce et al., 2026). At the family level, family well-being and holistic family support were reported as facilitators among Indigenous populations (Charlton et al., 2025), whereas low-income status was associated with smaller literacy intervention effects rather than being examined as an engagement barrier (Manz et al., 2010). At the school level, school and teacher support, Indigenous leadership, and culturally responsive and flexible services were reported as facilitators (Charlton et al., 2025; Ponce et al., 2026). At the cultural and policy level, external factors such as financial constraints and social prejudice were reported as barriers for Gypsy, Roma, and Traveller families (Ponce et al., 2026), while the review of family math engagement proposed a conceptual framework that broadens attention to sociocultural, community, and developmental factors, an area that remains insufficiently studied (Eason et al., 2022). Overall, only two of the eight reviews (Charlton et al., 2025; Ponce et al., 2026) explicitly and systematically reported facilitating and hindering factors across more than one ecological level; the remaining reviews focused on program types and outcomes without detailing contextual factors, so the synthesis on this aspect is more limited than that on program types and outcomes.

The synthesis above did not rely on counting the number of reviews "supporting" a given finding (vote counting), because the eight reviews differed in methodological quality and therefore could not be weighted equally. Instead, each claim was explicitly linked to the reviews supporting it, as described above. The predominance of critically low ratings, as discussed earlier with reference to (Bojcic et al., 2024), provides the basis for positioning this synthesis as a preliminary map of the available evidence on family engagement in early childhood education programs rather than as a definitive conclusion about program effectiveness.

Conclusion

This umbrella review synthesized eight reviews on family engagement in early childhood education, identifying learning at home, particularly in STEM/STEAM, mathematics, and family literacy, as the most frequently reported program type. Decision-making and community collaboration were more prominent in programs targeting Indigenous and Gypsy, Roma, and Traveller families. The available evidence suggested potential benefits for children's cognitive achievement, school readiness, and social-emotional development, although the only meta-analysis reported a small effect of family-based emergent literacy interventions, particularly among low-income families. Parental motivation, school and teacher support, and culturally responsive services facilitated engagement, while financial constraints and social prejudice remained barriers. However, the critically low AMSTAR 2 confidence ratings of seven reviews limit the certainty of these findings. The review was also constrained by its reliance on Scopus, single-author screening and appraisal, the limited applicability of AMSTAR 2 to educational reviews, and the absence of a registered protocol. Furthermore, no included review specifically addressed Indonesian or Islamic early childhood education, limiting the transferability of findings to Raudhatul Athfal (RA) settings. Future research should expand database coverage, involve independent reviewers, examine primary study overlap, and prioritize high-quality systematic reviews of family engagement in Indonesian early childhood education, particularly underexplored forms such as volunteering and decision-making. In practice, early childhood institutions should strengthen home–school communication, provide culturally and economically responsive services, and enhance teachers' capacity to collaborate with families. For RA institutions, home-based engagement may offer opportunities to integrate religious values with educational activities through shared reading, daily worship habituation, and regular parent meetings. Nevertheless, these recommendations remain provisional and require empirical investigation in Islamic early childhood education settings.

References

Alibek, Z. A., & Akhmetova, A. I. (2025). Exploring cognitive skill development in STEM education for kindergarten children: A systematic review. *Eurasia Journal of Mathematics, Science and Technology Education*, *21*(11). https://doi.org/10.29333/ejmste/17346

Aromataris, E., Fernandez, R., Godfrey, C., Holly, C., Khalil, H., & Tungpunkom, P. (2024). *Umbrella reviews*. JBI Manual for Evidence Synthesis. https://jbi-global-wiki.refined.site/space/MANUAL/355829709/9.1.1+-+Why+an+umbrella+review%3F

Aromataris, E., Fernandez, R., Godfrey, C. M., Holly, C., Khalil, H., & Tungpunkom, P. (2015). Summarizing systematic reviews: methodological development, conduct and reporting of an umbrella review approach. *International Journal of Evidence-Based Healthcare*, *13*(3), 132–140. https://doi.org/10.1097/XEB.0000000000000055

Bojcic, R., Todoric, M., & Puljak, L. (2024). Most systematic reviews reporting adherence to AMSTAR 2 had critically low methodological quality: a cross-sectional meta-research study. *Journal of Clinical Epidemiology*, *165*. https://doi.org/10.1016/j.jclinepi.2023.10.026

Bronfenbrenner, U. (1979). *The Ecology of Human Development*: Experiments by Nature and Design. Harvard University Press.

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In W. Damon & R. M. Lerner (Eds.), Handbook of child psychology: Vol. 1. Theoretical models of human development (6th ed., pp. 793–828). Wiley.

Charlton, E., Clarke, J., Teal, R., Hamilton, S., Fisher, C., & Millar, L. (2025). Approaches that support Indigenous children and families in the transition to school: A systematic review. *Australian Educational Researcher*, *52*(6), 4581–4609. https://doi.org/10.1007/s13384-025-00911-8

Eason, S. H., Scalise, N. R., Berkowitz, T., Ramani, G. B., & Levine, S. C. (2022). Widening the lens of family math engagement: A conceptual framework and systematic review. *Developmental Review*, *66*(May 2021). https://doi.org/10.1016/j.dr.2022.101046

Epstein, J. L. (2011). *School, Family, and Community Partnerships: Preparing Educators and Improving Schools (2nd ed.). Westview Press.*

Gates, M., Gates, A., Pieper, D., Fernandes, R. M., Tricco, A. C., Moher, D., Brennan, S. E., Li, T., Pollock, M., Lunny, C., Sepúlveda, D., McKenzie, J. E., Scott, S. D., Robinson, K. A., Matthias, K., Bougioukas, K. I., Fusar-Poli, P., Whiting, P., Moss, S. J., & Hartling, L. (2022). Reporting guideline for overviews of reviews of healthcare interventions: development of the PRIOR statement. *BMJ, 378, e070849. https://doi.org/10.1136/bmj-2022-070849*

Goodall, J., & Montgomery, C. (2014). Parental involvement to parental engagement: A continuum. Educational Review, 66(4), 399–410. https://doi.org/10.1080/00131911.2013.781576

Ishak, N. I., Kamal, S. S. L. A., Alias, N. Z., Jamil, H., & Uktamovich, G. I. (2025). Characteristics of ESL family literacy programmes: a systematic literature review. *Cogent Education*, *12*(1). https://doi.org/10.1080/2331186X.2025.2494454

Józsa, K., & Oo, T. Z. (2026). Systematic review and meta-analysis of parental roles in early childhood school readiness. *Journal of New Approaches in Educational Research*, *15*(1). https://doi.org/10.1007/s44322-026-00055-2

Kementerian Pendidikan dan Kebudayaan. (2017). Peraturan Menteri Pendidikan dan Kebudayaan Nomor 30 Tahun 2017 tentang Pelibatan Keluarga pada Penyelenggaraan Pendidikan. Berita Negara Republik Indonesia Tahun 2017 Nomor 1378.

Ma, X., Shen, J., Krenn, H. Y., Hu, S., & Yuan, J. (2016). A Meta-Analysis of the Relationship Between Learning Outcomes and Parental Involvement During Early Childhood Education and Early Elementary Education. In *Educational Psychology Review* (Vol. 28, Issue 4). https://doi.org/10.1007/s10648-015-9351-1

Manz, P. H., Hughes, C., Barnabas, E., Bracaliello, C., & Ginsburg-Block, M. (2010). A descriptive review and meta-analysis of family-based emergent literacy interventions: To what extent is the research applicable to low-income, ethnic-minority or linguistically-diverse young children? *Early Childhood Research Quarterly*, *25*(4), 409–431. https://doi.org/10.1016/j.ecresq.2010.03.002

Munn, Z., Barker, T. H., Moola, S., Tufanaru, C., Stern, C., McArthur, A., Stephenson, M., & Aromataris, E. (2020). Methodological quality of case series studies: an introduction to the JBI critical appraisal tool. *JBI Evidence Synthesis*, *18*(10), 2127–2133. https://doi.org/10.11124/JBISRIR-D-19-00099

Otero-Mayer, A., González-Benito, A., Gutiérrez-de-Rozas, B., & Expósito-Casas, E. (2026). Family Involvement in Early Childhood Education: A Systematic Review of its Measurement. *Early Childhood Education Journal*, *54*(4), 2495–2516. https://doi.org/10.1007/s10643-025-02024-4

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

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ, 372, n71*. https://doi.org/10.1136/bmj.n71

Pollock, M., Fernandes, R. M., Becker, L. A., Pieper, D., & Hartling, L. (2023). *Chapter V: Overviews of Reviews*. Cochrane. https://www.cochrane.org/authors/handbooks-and-manuals/handbook/current/chapter-v

Ponce, S., Symonds, J., Sloan, S., & Gibbons, R. A. (2026). Engagement in early childhood education: A systematic review of Gypsy, Roma and Traveller populations in Europe. *Review of Education*, *14*(2). https://doi.org/10.1002/rev3.70180

Puljak, L., Bala, M. M., Mathes, T., Poklepovic Pericic, T., Wegewitz, U., Faggion, C. M., Matthias, K., Storman, D., Zajac, J., Rombey, T., Bruschettini, M., & Pieper, D. (2023). AMSTAR 2 is only partially applicable to systematic reviews of non-intervention studies: a meta-research study. *Journal of Clinical Epidemiology*, *163*, 11–20. https://doi.org/10.1016/j.jclinepi.2023.08.021

Salvatierra, L., & Cabello, V. M. (2022). Starting at Home: What Does the Literature Indicate about Parental Involvement in Early Childhood STEM Education? *Education Sciences*, *12*(3). https://doi.org/10.3390/educsci12030218

Shea, B. J., Reeves, B. C., Wells, G., Thuku, M., Hamel, C., Moran, J., Moher, D., Tugwell, P., Welch, V., Kristjansson, E., & Henry, D. A. (2017). AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both. *BMJ*, *358*, j4008. https://doi.org/10.1136/bmj.j4008