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LITERATURE REVIEW

A Systematic Review of Interventions Promoting Parental Involvement in the Education of School-Aged Children With Disabilities†

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Abstract
The purpose of this study was to systematically map and synthesise literature on interventions that promote the involvement of parents of school-aged children with disabilities in education. The study focused on peer-reviewed, primary intervention studies published in English between 2000 and 2021. Nine databases were searched, and 21 articles were identified and included in the review. The Mixed Methods Appraisal Tool was used to assess the quality of the included studies, and narrative analysis was used to synthesise the data. The duration of the interventions varied from 7 to 36 months. Most studies were conducted within the context of high-income countries and focused on parents of children with intellectual disabilities. Most studies reported positive effects on one or more groups: parents, children, schools, and communities. However, there was heterogeneity in the outcome measures used, which limits comparability across interventions. The quality assessment revealed high-/medium-bias risks in most articles. Future research should include higher quality studies driven by theoretical models. The results support the need for more research on parental involvement in the education of children with disabilities, especially intervention studies within the context of low- and medium-income countries.

Keywords: parent involvement; disabilities; education; systematic review; interventions

The number of children with disabilities globally is estimated at almost 240 million (UNICEF, 2021). These children have unique needs, often face additional barriers, and experience limited access to quality education (Banks et al., 2022; Wodon & Alasuutari, 2018). A study analysis of 8,900 children from across 30 countries concluded that children with disabilities are 10 times less likely to attend school than their peers without disabilities (Kuper et al., 2018). Exclusion from education has negative implications throughout the lives of these children, contributing to more significant risks of poorer health, limited economic opportunities and poverty (Banks et al., 2017; UNESCO, 2010).

There is ample evidence pointing to the positive educational benefits for children from parental involvement and their collaboration with schools and educational processes (Caño et al., 2016; Đurišić & Bunijevac, 2017; Goldman & Burke, 2017; Hussain, 2019; Jeynes, 2007; Kimaro & Machumu, 2015; Oranga et al., 2022; Stacer & Perrucci, 2013; Yulianti et al., 2018). Parental involvement can be

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understood in the context of Epstein's theory of overlapping spheres of influence, primarily linking school, family and community partnerships with students' social, cognitive, emotional and educational development (Epstein, 2018). The framework outlines six types of parental involvement, framed within practice and partnership levels of parenting, communicating, volunteering, learning at home, decision-making, and collaborating with the community (Epstein, 2018; Kimaro & Machumu, 2015). How parental involvement is implemented, across the six Epstein types, varies, based on context and a range of personal and social determinant factors, including socio-economic, employment and income status (Wondim et al., 2021).

Parental involvement is considered a strong predictor of children's success in school, and given the widespread barriers to education they face, may be particularly important for children with disabilities (Ainscow & César, 2006; Banks & Zuurmond, 2015; Fan & Chen, 2001). In recent years, the involvement of parents of children with disabilities has become more prominent and recognised as an essential ingredient for the effective practice of inclusive education (Gedfie & Negassa, 2018; Goldman & Burke, 2017; Jigyel et al., 2019; Wondim et al., 2021).

Families often play a crucial role as a source of emotional, social and psychosocial support of children with disabilities (Butler et al., 2022). The experience of parenting a child with disabilities can bring challenges, particularly if inclusive practices and support measures are lacking (Mipanga, 2022; Wang, 2008). However, research on their involvement in their children's education is relatively scarce, particularly in low- and middle-income countries (LMICs; Wondim et al., 2021). The limited research available highlights that a range of factors can influence the extent and nature of parental involvement for parents of children with disabilities, including attitudes and understandings around disability and the parental role in education, time/competing demands (Erdener, 2014; Hoover-Dempsey et al., 2005; Kim, 2009; Wright, 2009), as well as wider socio-economic, environmental, attitudinal and structural determinants (Hornby & Lafaele, 2011; Kim, 2009; Murray et al., 2014). Each parent and child will have unique needs and experiences. Understanding how best to promote parental involvement for parents of children with disabilities is important, given the positive impact it may have on the children's learning and psychosocial wellbeing (Bariroh, 2018; Kimaro & Machumu, 2015).

Despite the wide recognition of its importance, evidence on how best to achieve effective parental involvement in the education of children with disabilities is lacking. We found one systematic review and meta-analysis of the effectiveness of parent involvement in special education, which identified substantial evidence gaps in this area. However, the review focused on USA-based studies only (Goldman & Burke, 2017). A rapid evidence assessment of what works to improve educational outcomes for children with disabilities found no intervention studies promoting parent involvement in LMIC settings (Kuper et al., 2018). To the best of our knowledge, outside of high-income countries, especially the USA, research on interventions to promote parental involvement for parents of children with disabilities has not been systematically reviewed.

The lack of evidence on the effectiveness of interventions for parents of children with disabilities is of concern. It is especially significant to consider the evidence gaps in different settings, including in LMICs, considering likely contextual and cultural variations in factors influencing parental involvement, such as those related to parenting beliefs and caregiving approaches (Bizzego et al., 2020). Similarly, there is a need to understand the outcomes and outcome measures that are available to assess parental involvement interventions.

In the current systematic review, we aimed to systematically map and synthesise literature on interventions that promote the involvement of parents of school-aged children with disabilities in education. Specifically, the research questions guiding the literature review were as follows:

1. What interventions supporting parental involvement in the education of children with disabilities have been evaluated?
2. What outcome measures and assessment approaches were used to evaluate these interventions?
3. What is the evidence of the effectiveness of the interventions?

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Methods

The current study followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines for a systematic review (Moher et al., 2009). The inclusion/criteria and analysis methods were specified in a protocol registered with PROSPERO in September 2020, and searches were completed in April 2021 (CRD42020191267).

Inclusion/Exclusion Criteria

The population, intervention, comparison, outcome and study design (PICOS) framework was used to formulate the eligibility criteria for the review. The study focused on peer-reviewed, primary intervention studies published in English between 2000 and 2021. Eligible studies were expected to have implemented an education-focused intervention or program for individuals or groups involving at least one parent of a child with a disability. The age range for school children was specified as 6–18 years, in line with UNESCO's official age range for primary and secondary school levels (UNESCO, 2009). In addition, in this review we recognised the significance of school, family and community partnerships (Epstein & Sheldon, 2022) and considered home, community and school interventions (Stacer & Perrucci, 2013). The word 'parent' was used to include biological mothers, fathers, grandparents or other guardians responsible for children with disabilities (Wang, 2008). Primary research included quantitative, qualitative, and mixed-method studies, with or without a control/comparison group. No restrictions were imposed on geographical settings, such as rural or urban. This was to address the potential absence of studies that would meet all criteria for inclusion in this systematic review. However, non-intervention studies or secondary analyses, reviews, reports, opinion pieces, meta-analyses, editorials, conference papers, dissertations, and study protocols were excluded from the review. Grey literature was excluded because it is often 'not bound by the same publishing conventions that characterize white literature and comes in a variety of forms [, which pose] challenges for data management, extraction and synthesis' (Adams et al., 2017, p. 434).

Search Strategy

Searches were conducted across nine electronic databases: BASE, CINAHL Plus with Full Text, Embase, ERIC, MEDLINE, PsycINFO, Scopus, Social Policy and Practice, and Web of Science. The search strategy included subject headings for each database (e.g., MeSH in MEDLINE) and a combination of controlled vocabulary. The key search terms were (parent* or caregiver* or famil*) AND (involve* or engage* or support groups) AND (child* or learner* with a disability* OR disabled child*) AND (school* OR education OR classroom). We chose the period 2000 to 2021 to regulate the review's scope and at the same time capture the growing interest in parent-focused interventions for children with disabilities. The search strategy was adapted for each data source (see Supplementary Material 2). Titles and abstracts retrieved from the electronic search were downloaded into EndNote's reference management database. Reference lists from all the articles undergoing full-text review were manually searched to identify additional articles. Retrieved articles were imported into Covidence, and duplicate references were removed. The papers, including eligible full texts, were independently screened by at least two reviewers. Conflicting views were resolved through discussion with a third reviewer.

Data Extraction and Synthesis

Data were extracted from publication details, study design and characteristics, intervention descriptions, reported outcomes, results, and conclusions. Data analysis and synthesis were done using narrative analysis, and findings were presented as recommended in the *Cochrane Handbook for Systematic Reviews of Interventions* (Higgins & Green, 2008). A narrative synthesis was chosen

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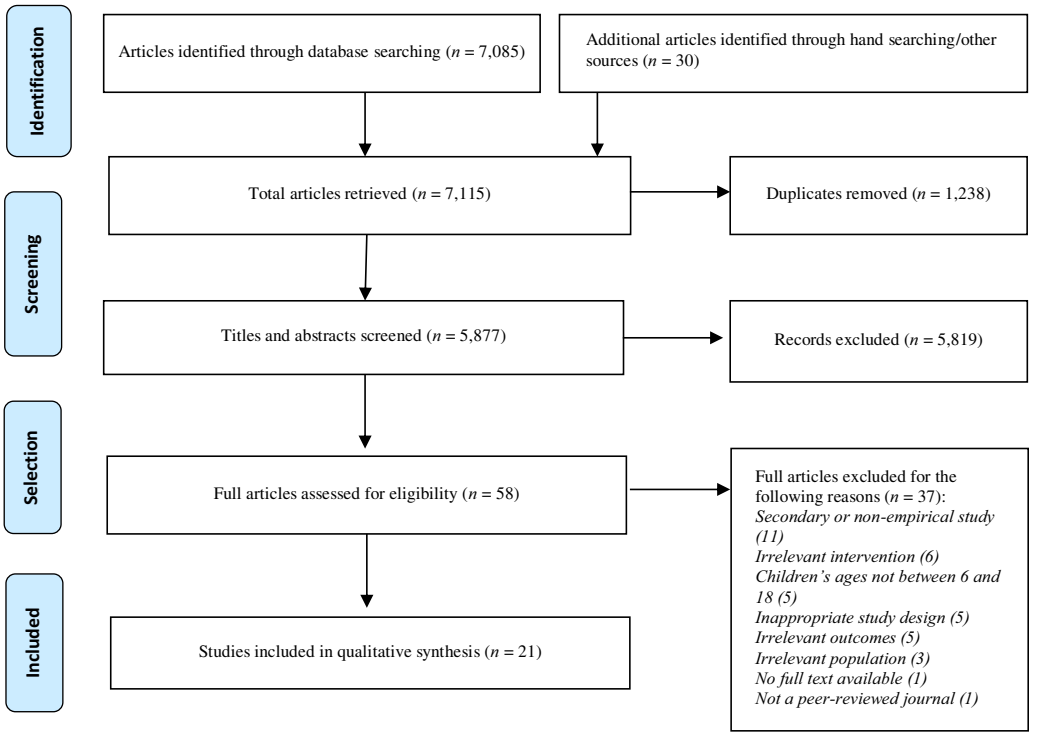

Figure 1. PRISMA Flow Diagram of the Review Process.

considering this systematic review's wide range of interventions (Schwarz et al., 2019). In addition, pooling data and meta-analyses was not feasible due to the high methodological diversity and heterogeneity among the included studies.

Quality of Studies

The Mixed Methods Appraisal Tool's (MMAT; Version 18) methodological quality criteria for evaluating empirical studies across different study designs — quantitative, qualitative, and mixed methods (Hong et al., 2018; Pace et al., 2012) — was used to evaluate consistency and quality of each of the 21 articles included in this review. Two reviewers independently assessed the studies, and divergences were resolved through consensus or discussion with a third reviewer. Two additional reviewers examined 10 articles to ensure consistency and objectivity in the appraisals. Each study was rated as having a high, medium, or low risk of bias. Results on the risk of bias showed mixed quality (see Table 2). Although most studies were considered weak or posed a high risk of bias, the findings were invaluable as they added to our understanding of intervention research in this area.

Results

The initial electronic database search yielded 7,085 records. Our hand search through article references generated an additional 30 articles. After removing 1,238 duplicates, 5,877 titles and abstracts were reviewed for eligibility. From these, 58 full papers were evaluated, of which 21 met our criteria and were included in this review (see Figure 1, PRISMA flowchart, for details).

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Table 1. Characteristics of Included Studies

Variable	Category	*n* (%)
Decade of publication	2000–2010	8
	2011–2021	13
Country income status	High-income country	17
	Lower-middle-income country	3
	Upper-middle-income country	1
Country	USA	11
	UK	4
	Belgium, Brazil, China, India, Italy, Turkey	1 each
Study design	Quantitative descriptive	8
	Qualitative	5
	Quantitative non-RCTs	4
	Mixed methods	3
	Quantitative RCT	1
Child impairment type	Intellectual	15
	Various/Multiple	5
	Physical	1

Note. RCT = randomised controlled trial.

Study Characteristics

The design characteristics for each study are shown in Table 1. Most studies were conducted in high-income countries, especially the USA ($n = 11$). Fifteen articles involved interventions with parents of children with intellectual disabilities. The MMAT was used to categorise the study designs as quantitative descriptive, qualitative, quantitative non-randomised controlled trials, mixed methods or quantitative randomised controlled trial.

All 21 interventions involved parents as primary target groups. Thirteen studies incorporated school staff, community members, health staff and civil society workers (Burke, 2013; Burke et al., 2018; Carter et al., 2012; Floyd & Vernon-Dotson, 2009; Goldman & Burke, 2017; Gortmaker et al., 2007; Hampshire et al., 2016; Kurani et al., 2009; Kutash et al., 2002; Lendrum et al., 2015; Mortier et al., 2009; Norwich et al., 2005; Panerai et al., 2009).

The sample sizes of parents involved in the study ranged from 4 to 104 participants. Seven articles stated the number or proportion of female parents recruited in their samples — that is, an average of 85% female. Four studies involved only female parents, and no males took part.

The Methodological Quality of the Studies

Using MMAT for quality assessments, five articles had a low risk of bias, and five had a medium risk. The remaining 11 were evaluated to have a substantial risk of bias. The primary sources of bias included a lack of methodological adequacy to address the research questions ($n = 3$); lack of coherence between data sources, collection, analysis, and interpretation ($n = 3$); articles not adequately deriving findings from the data ($n = 3$); weak or not well-described sampling strategies ($n = 3$); or a lack of representativeness in the target population ($n = 4$). In addition, most papers did not describe the

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Table 2. Description of Study Designs, Control Group, Time Points, Sample Sizes and Risk of Bias

Study	Study design	Control group	Timepoints to assess outcomes	Sample	Risk of bias
Benitez & Domeniconi (2016)	Quantitative descriptive	No	Pre-/postintervention	5	Medium
Buelow (2007)	Qualitative	No	Pre-/postintervention	4	Low
Burke (2013)	Qualitative	Yes	Not described	76	Medium
Burke et al. (2018)	Quantitative descriptive	No	Pre-/postintervention	22	High
Burke et al. (2019)	Quantitative non-RCT	Yes	Pre-/postintervention	34	High
Carter et al. (2012)	Mixed methods	No	Pre-/postintervention	10	Low
Cenk et al. (2016)	Quantitative descriptive	No	Pre-/postintervention	104	Medium
Evans et al. (2002)	Quantitative descriptive	No	Pre-/postintervention	1	High
Floyd & Vernon-Dotson (2009)	Qualitative	No	Postintervention	21	High
Goldman et al. (2019)	Quantitative descriptive	No	Pre-/postintervention	4	Medium
Gortmaker et al. (2007)	Quantitative descriptive	No	Pre-/postintervention	3	High
Grindle et al. (2019)	Quantitative descriptive	No	Pre-/postintervention	5	High
Hampshire et al. (2016)	Quantitative descriptive	No	Pre-/postintervention	5	High
Kurani et al. (2009)	Quantitative non-RCT	Yes	Pre-/postintervention	22	High
Kutash et al. (2002)	Quantitative non-RCT	Yes	Pre-/postintervention	Not specified	Low
Lendrum et al. (2015)	Mixed methods	No	Pre-/postintervention	Not specified	Low
Mautone et al. (2011)	Qualitative	No	Not described	Not specified	High
Mortier et al. (2009)	Mixed methods	No	Pre-/postintervention	4	High
Norwich et al. (2005)	Qualitative	No	Pre-/postintervention	14	Low
Panerai et al. (2009)	Quantitative non-RCT	Yes	Pre-/postintervention	Not specified	Medium
Wang (2008)	Quantitative RCT	Yes	Pre-/postintervention	27	High

Note. RCT = randomised controlled trial.

non-response and rationale for their sampling and methodology. Four articles were based on specific theoretical frameworks used to inform the development of the reported interventions (Buelow, 2007; Mautone et al., 2011; Norwich et al., 2005; Wang, 2008). The theoretical models were the 'parent partnership model', 'attachment theory', 'social learning/ecological systems', and 'knowledge attitudes behaviour'.

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Intervention Descriptions

The intervention outcomes in selected articles addressed various groups of people, such as parents, children, schools and communities (see Table 3). The interventions were classified under Epstein's six types of parent involvement framework (Epstein, 2018). Nine interventions supported *communication between parents and school* (e.g., parent training or other school support activities). Five interventions promoted *learning at home* through information provided to help learners with homework. Three interventions engaged parents in *school decision-making*. These activities were tailored to help parents and families advocate for children with disabilities and other families. In two articles, the interventions promoted parental *collaborations with the community*, for example, through conversations and other actions that brought together parents, schools and the community. The remaining two articles focused on *parenting* interventions to help parents establish supportive home environments. None of the studies focused on parents' *volunteering*-related activities. The intervention formats adopted were face to face for parent support groups ($n = 12$) or individual families ($n = 3$). Thirteen studies reported the geographical settings of the interventions, with nine from urban settings, three in both urban and rural, and one in rural settings.

Outcome Measures and Assessment Tools

The authors of the articles included in the study used a variety of approaches and assessment tools to evaluate outcomes. The effects of the parent involvement interventions were assessed under one or more outcome categories: parent-, child-, school-, and community-level outcomes. Fifteen articles reported parent-level outcomes, and 10 reported child-level outcomes. To determine whether and what interventions were effective, results were categorised based on the reported outcomes in each article — that is, positive, mixed or no effect. All the interventions reported positive results except for three that reported mixed outcomes (see Table 4).

Discussion

The stimulus for this review was the need to identify and review interventions to promote parents' involvement of school-aged children with disabilities in education. In our search, 21 interventions were identified, mostly from high-income countries. Only one study was from a low-income country, despite the high number of children with disabilities in those countries.

The different parent involvement interventions were categorised according to Epstein's six types of parent involvement. Most studies focused on improving parent/school communication and learning at home. Most studies found evidence of a positive impact of the interventions, highlighting the significant contribution of parent involvement in fostering children's academic achievements and social-emotional development (El Nokali et al., 2010; Epstein & Sheldon, 2002).

The study findings substantiate references to the importance of both informal (e.g., support groups) and formal (e.g., home-based, group or individualised parent education) ways of involving parents in schooling (Sudit, 2018). Strategies that promote home–school communications and interactions were also common in the studies in this review. Parent-peer groups can support parents in addressing their children's needs and improving their skills to help their children with disabilities (Machalicek et al., 2015).

Notwithstanding the positive examples of parent involvement interventions in the education of children with disabilities, this review also shows several research limitations. For instance, there is a limited representation of parents of children with disabilities other than intellectual disabilities in the literature. In addition, we found substantial heterogeneity in the study designs and outcome measures of the included articles. Historical inconsistency in measuring parent involvement and equivocal findings across the articles have been highlighted in previous studies (Fantuzzo et al., 2004).

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Table 3. Description of Intervention Formats, Focus and Duration

Study	Intervention format and place	Key intervention focus	Duration
Communicating			
Cenk et al. (2016)	Face-to-face parent and teacher groups (school)	Parents' knowledge, skills, peer support, confidence, and voice	7–12 months
Floyd & Vernon-Dotson (2009)	Face to face with parents and family members (home and school)	Parents' knowledge, skills, peer support, confidence, and voice	19–24 months
Goldman et al. (2019)	Face-to-face parent and teacher groups (community)	Parents' knowledge and skills Children's behaviour and discipline	Not specified
Kurani et al. (2009)	Face-to-face parent groups (home and school)	Parents' knowledge and skills Children's social/emotional support Academic performance and attainment	Not specified
Lendrum et al. (2015)	Distant support with home tasks/assignments (school)	Parents' confidence and voice Teachers' responsiveness School–family partnership	19–24 months
Mautone et al. (2011)	Face-to-face parent and child groups (home and school)	Parent–child relations	0–6 months
Mortier et al. (2009)	Face-to-face parent and teacher groups (school)	Academic performance and attainment Children's social and emotional support	7–12 months
Norwich et al. (2005)	Face to face with individual parents (home and school)	Parents' knowledge and skills School inclusive environment	19–24 months
Panerai et al. (2009)	Face-to-face parent and teacher groups (home and school)	Parents' knowledge, skills, and confidence Children's behaviour and discipline	36 months
Learning at home			
Benitez & Domeniconi (2016)	Face-to-face parent and teacher groups (home)	Academic performance and attainment	7–12 months
Evans et al. (2002)	Face to face with parents and family members (home)	Academic performance and attainment	0–6 months
Gortmaker et al. (2007)	Face-to-face parent and child groups (home)	Academic performance and attainment Parents' confidence, voice, and action	Not specified
Grindle et al. (2019)	Face-to-face parent and teacher groups (home)	Academic performance and attainment Parent-to-parent support	0–6 months
Hampshire et al. (2016)	Face-to-face parent and teacher groups (home)	Academic performance and attainment	Not specified

(*Continued*)

Table 3. (*Continued*)

Study	Intervention format and place	Key intervention focus	Duration
Decision-making			
Burke (2013)	Distant support with home tasks/assignments (community)	Parents' knowledge, skills, and confidence School–family partnership	19–24 months
Burke et al. (2018)	Distant support with home tasks/assignments (community)	Parent-to-parent support, confidence, and voice	Not specified
Burke et al. (2019)	Face-to-face parent groups (community)	Parents' knowledge and skills	7–12 months
Collaborating with the community			
Carter et al. (2012)	Distant support with home tasks/assignments (community)	Community knowledge and skills Community, schools, and family partnerships	7–12 months
Kutash et al. (2002)	Face to face with parents and family members (school)	Academic performance, attainment, and behaviour Emotional and social support	19–24 months
Parenting			
Buelow (2007)	Distant support with home tasks/assignments (community)	Parents' knowledge, skills, confidence, and peer support Parent–child relations	0–6 months
Wang (2008)	Distant support with home tasks/assignments (home)	Parent–child relations	0–6 months

Table 4. Study Assessment Tools and Outcomes Reported

Study	Levels of outcomes assessed	Assessment tool	Main outcomes reported
Communicating			
Cenk et al. (2016)	Parent level	Sociodemographic data, knowledge level, Family Burden Assessment Scale for Families of Children with ID (FBAS-ID), and the Beck Hopelessness Scale	Mixed (quantitative) evidence of families' knowledge and sense of hope. Statistically significant increase in parent knowledge (p = .000) and reduction in hopelessness scores (p = .000). FBAS-ID scores worsened after the program; increases in subscales of emotional burden and need for time (p = 0.001, p = 0.001).
Floyd & Vernon-Dotson (2009)	Parent level	Surveys designed to elicit information about each family's experience, journal entries, and the Home Learning Tool Kit (Implementation) Checklist	Quantitative survey results not presented. However, some qualitative evidence of empowerment of parents teaching their children and providing supportive home atmospheres for learning. More robust home and school relationships.
Goldman et al. (2019)	Parent/child levels	Social validity indicator, interobserver agreement, and fidelity checklists	Positive (qualitative and quantitative) preliminary findings concerning student off-task behaviour and parent–school partnership.
Kurani et al. (2009)	Parent/child levels	The Portage Parent Program Guide, Parent Involvement/Engagement Scale, and the Vineland Social Maturity Scale (VSMS) for children	Positive (quantitative) statistically significant improvements in child motor (P = 0.001), cognitive (P = 0.143), language (P = 0.001), social (P = 0.001), and self-help (P < 0.001) development.
Lendrum et al. (2015)	Parent/ school levels	Parent surveys, school-level online surveys, semistructured interviews, and qualitative data from case studies of 20 schools	Positive (qualitative and quantitative) evidence in school–home partnerships and statistically significant improvements in predicting parental engagement/confidence.
Mautone et al. (2011)	Parent level	Not stated	Positive (qualitative) evidence of enhanced parent–child relationships, family involvement in home education and stronger family–school collaborations.
Mortier et al. (2009)	Child level	The Interaction and Engagement Scale and qualitative interviews to elicit perspectives on students' academic growth and social participation	Positive (qualitative) evidence of increased engagement and interaction patterns in peers/student-initiated interactions and academic skills. Quantitative results on statistical significance not described.
Norwich et al. (2005)	Parent/ school levels	A conceptual framework approach is taken in the SEN Code of Practice (2001)	Positive (qualitative) evidence of improved parental skills and strategies to access help for children. Parents' knowledge of dyslexia and reduced fear of being labelled.
Panerai et al. (2009)	Parent/child level	Family Indicators Questionnaire, Psycho-Educational Profile – Revised (PEP-R), and Vineland Adaptive Behavior Scale (VABS) – survey form	Positive reports of parents embracing more than the role of co-therapists and of TEACCH-mediators promoting program implementation and significant changes in the school.

(*Continued*)

Table 4. (*Continued*)

Study	Levels of outcomes assessed	Assessment tool	Main outcomes reported
Learning at home			
Benitez & Domeniconi (2016)	Child level	Wechsler Adult Intelligence Scale and Wechsler Intelligence Scale for Children	Positive (quantitative scores) evidence of students' improvement in post-tests versus pre-tests. Statistical significance not described.
Evans et al. (2002)	Child level	Dolch Basic Sight Word List at the pre-primer level and words per minute correct (WPM-C)	Positive evidence of students' sight word knowledge and reading performance (accuracy and fluency). Helped integration into regular classes without modifications. Statistical significance not described.
Gortmaker et al. (2007)	Parent/child level	A multiple-probe design and high-word-overlap and low-word-overlap passages	Positive (qualitative) evidence on the value approach implemented to assist children with reading disabilities.
Grindle et al. (2019)	Parent/child level	Headsprout Placement Test, individual performance data, Dynamic Indicators of Basic Early Literacy Skills, and the Word Recognition and Phonics Skills Test	Positive (quantitative) evidence of progressive improvements in reading on standardised assessment tests. Statistical significance not described.
Hampshire et al. (2016)	Child level	Not stated	Positive (qualitative) evidence of improved students' independence and attitudes towards homework, better organisation skills and higher grades.
Decision-making			
Burke (2013)	Parent/ school levels	Not stated	Positive (qualitative) evidence on the importance of advocacy training as first steps in understanding and improving parent–school collaboration in special education.
Burke et al. (2018)	Parent level	Treatment fidelity checklist and pre- and post-IEP transcript to assess parent participation and advocacy responses to an IEP meeting transcript	Positive (qualitative) evidence of greater school participation and more frequent advocacy by parents; increased number of appropriate responses: words used, turns taken, and appropriate, advocacy comments/requests for appropriate or more services for their children.
Burke et al. (2019)	Parent level	Special education knowledge scale, Family–Professional Partnership Scale, Family Empowerment Scale, the Life Orientation Test – Revised, Self-Mastery Scale, and the Parenting Stress Index	Mixed (quantitative). Significant increases in empowerment ($p = 0.04$) and special education knowledge ($p = 0.02$). However, intervention participants had worse family–school partnerships at follow-up than comparison group.
Collaborating with community			
Carter et al. (2012)	Community level	Individual interviews with parent organisers and community partners, event observations during community conversations, participant surveys, and permanent products (parents' original grant applications, placemats, notes)	Positive (qualitative) evidence of participants gaining insights into inclusion, its importance, and available local resources. Social connections and partnerships between a wide range of people within/outside the community.

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Table 4. (*Continued*)

Study	Levels of outcomes assessed	Assessment tool	Main outcomes reported
Kutash et al. (2002)	Child level	Child Behavior Checklist, Child and Adolescent Functional Assessment Scale – Parent Report, Child and Adolescent Services Assessment, Wide Range Achievement Test – III (WRAT-III), Knowledge Inventory, Teacher Knowledge and Skills Survey, and the Fidelity Form	Mixed (qualitative and quantitative) evidence on academic achievements (maths and reading). No significant change in school absenteeism; slightly improved retention of children with emotional disturbance. Child discipline referral rates significantly decreased by 60% ($p = 0.04$).
Parenting			
Buelow (2007)	Parent level	Qualitative analysis	Positive (qualitative) reports of parents interested in knowing their children's condition; positive effects of parent-to-parent contacts, setting goals and developing partnerships to benefit children.
Wang (2008)	Parent level	Maternal Behavior Rating Scale (MBRS) and descriptive analysis	Positive (quantitative) evidence of parents becoming more responsive and showing positive affect in interactions with children. Trained parents ($M = 4.08$) scored significantly higher on the responsiveness dimension of MBRS during post-test than those in control group ($M = 3.36$, $p < 0.05$), with effect size of 0.91.

Most articles were characterised by a medium or high risk of bias, and only one study was a randomised controlled trial. Only five out of the 21 articles were considered as having a low risk of bias. Sample sizes were small. Up to nine studies specified sample sizes of fewer than 10 parents involved in their research. The rationale for sample sizes was not consistently reported across the studies. Since parental involvement was measured differently across studies and without control or comparison groups, it is unclear whether reported outcomes resulted from robust interventions, variations in measurement procedures, sampling differences or other factors. This highlights a need for more intervention studies to strengthen the current evidence on parent involvement.

The scarcity of intervention studies focused on parents of children with disabilities from LMICs, where most children with disabilities live, is of concern (Smythe et al., 2022). Most literature reports on interventions implemented in high-income countries, which often lack applicability in LMICs, especially in rural settings (Spier et al., 2016). This raises the urgency and need for paying attention to issues of context and culture during the development, testing and implementation of these interventions (Baumann et al., 2019).

Seeing the positive effects of parent involvement interventions, replicable models supported by rigorous study designs across settings should be encouraged. That said, studies should also aim to provide information on the theoretical underpinnings of their interventions and communication on the intervention development processes. The demand for theoretically informed interventions is growing (Craig et al., 2008). Systematic approaches with a strong rationale for the design and detailed reporting of the intervention development during implementation interventions are recommended (French et al., 2012). Initial steps in planning and identifying appropriate intervention strategies should include identifying barriers and facilitators that are subsequently mapped to potential intervention strategies (Craig et al., 2008), thereby providing the basis for a context-appropriate implementation plan (Michie & Prestwich, 2010; Puchalski Ritchie et al., 2016).

In line with the literature, a key feature of parent involvement interventions is that impact also depends on their precise delivery mechanisms to the parents and adherence to or consistent implementation of the intervention (Michie & Prestwich, 2010). Examples include engaging parent-to-parent support groups and their interaction with teachers and children, helping parents support their children's schooling at home, supporting community conversations, or training parents as advocates. Evidence has also shown the usefulness of addressing issues in public forums, as parents can benefit from the social aspect of working in peer groups (Puchalski Ritchie et al., 2016; Spier et al., 2016).

Limitations

The value of this review was its inclusion of a rigorous literature search, use of independent reviewers during data search, extraction, and synthesis, as well as following PRISMA guidelines, which provide a transparent, complete, and accurate account of why the study was done and what we did and what we found (Spier et al., 2016). Nonetheless, the findings must be considered in the context of several limitations. First, conducting a meta-analysis was impossible due to the heterogeneity of both included interventions and outcome measures. Second, the studies also showed significant variabilities in design, focus and quality due to the various contexts, intervention types, duration, sample sizes, and assessment tools. In addition, the sample sizes across the studies on parental involvement were small, which limits the generalisability of the study findings.

Summary and Conclusions

In the current review, we sought to identify and summarise the evidence on parental involvement interventions supporting the education of school-aged children with disabilities. The review has generated valuable insights into the range and types of interventions encouraging parent involvement in the education of children with disabilities. The study also underlined the need for more high-quality research to increase our understanding of the nature and impact of parental involvement in the

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education of children with disabilities. The findings also reveal the gap and need to involve parents of children with a wide range of impairments, focusing research on low-income settings and increasing sample sizes to improve the generalisability of the results. Most importantly, the review further highlights the demand for context-specific interventions to promote the involvement of parents of children with disabilities in schooling, especially in low- and middle-income settings.

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/jsi.2023.11

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