

Collaboration: How does it work according to therapists and parents of young children? A systematic review

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Abstract

Background: Collaboration between therapists and parents of children with developmental disabilities is a key element of family-centred care. In practice, collaboration appears to be challenging for both parents and therapists. This systematic review aims to make explicit how therapists can optimise their collaboration with parents of young children with developmental disabilities, according to the perspectives of parents and therapists.

Methods: A systematic review was conducted using the following databases: Medline (PubMed), CINAHL (OVID) and PsychINFO (OVID). Those papers were selected, which focused on collaboration using a two-way interaction between therapists and parents, exploring the perspectives of therapists and/or parents of children between 2 and 6 years. Papers needed to be published in English or Dutch between 1998 and July 2021. Included papers were synthesised using a qualitative analysis approach by two researchers independently. Results sections were analysed line-by-line, and codes were formulated and discussed by all authors. Codes were aggregated, resulting in a synthesis of specific collaboration strategies in combined strategy clusters.

Results: The search generated 3439 records. In total, 24 papers were selected. Data synthesis resulted in an overview of specific strategies organised into five clusters: (1) continuously invest time in your collaboration with parents, (2) be aware of your important role in the collaboration with parents, (3) tailor your approach, (4) get to know the family and (5) empower parents to become a collaborative partner.

Conclusions: This systematic review resulted in an overview of concrete strategies for therapists to use in their collaboration with parents of children with developmental disabilities. The strategies formulated enable therapists to consciously decide how to optimise their collaboration with each individual parent. Making these strategies explicit facilitates change of practice from therapist-led and child-centred towards family-centred care.

KEYWORDS

children, collaboration, developmental disabilities, family-centred care, parents' perspectives, strategies, therapists' perspectives

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1 | INTRODUCTION

Family-centred care is related to positive outcomes for parents, families, parent-child interaction and children, according to several systematic reviews and meta-analyses (Dempsey & Keen, 2008; Dunst et al., 2007; King et al., 2004; Kuhlthau et al., 2011). More and more the importance of family-professional collaboration in therapy for young children with developmental disabilities has been emphasised as a key element of family-centred care (An & Palisano, 2014; Harniess et al., 2021; Klatte et al., 2020; Kokorelias et al., 2019; Mas et al., 2022).

An et al. (2016, p. 1844) describe collaboration as 'mutually supportive interactions through which knowledge and skills are shared, mutual understandings occur, and shared-decisions are made'. Collaboration can be divided into participatory practices and relational practices (Mas et al., 2022). Participatory practices aim to increase active parent engagement and include behaviour such as shared goal-setting, building on parents' strengths and promoting the acquisition of new skills (Dunst & Trivette, 2009). An and Palisano (2014) describe a four-step process of collaborative service delivery comprising mutually agreed upon goals, shared planning, shared implementation and shared evaluation, integrating child and family needs, preferences and routines. For parents, relational practices are essential for participation in the therapy process (Klatte et al., 2020; Kokorelias et al., 2019). Relational practices aim to build on the relationship with parents and include aspects like empathy, active and reflective listening, effective communication and cultural sensitivity to parental values and needs (Hill, 2001). All collaborative practices should be performed with a two-way interaction style between parents and therapists (An & Palisano, 2014; Melvin et al., 2019). This involves not only informing and explaining things to parents but also listening to parents' concerns and giving them a voice.

In theory, collaboration is clearly explained, and its importance for clinical practice is recognised. However, there is a gap between theory and practice. Collaboration with parents is found by therapists to be complex and difficult to implement in daily practice (Klatte et al., 2020). Therapists commonly experience parental disengagement with therapy and do not feel proficient in establishing collaboration with parents (Klatte et al., 2019; Melvin et al., 2019). No one-size-fits-all approach exists, since therapists and parents have to deal with a variety of factors: (1) both parent and therapist bring their unique set of characteristics, needs, priorities, history and expectations; (2) each child is unique and needs a personalised approach; (3) therapists and parents have their own personal preferences and communication styles in their collaborations with each other; (4) therapists and parents have to deal with local institutional and financial factors (Joseph-Williams et al., 2014; Klatte & Roulstone, 2016; Kokorelias et al., 2019). For parents, collaboration can be challenging: They can feel overwhelmed by their child's diagnosis, may have underlying emotional needs linked to their child's difficulties and may have competing demands on their time. These factors may negatively influence their readiness to take part in the intervention process, according to a systematic review of parental experiences with parent-child

Key messages

- Parent-therapist collaboration is complex.
- Collaboration requires an individualised approach for parents and therapist.
- Parents need to be empowered in order to become a collaborative partner.
- Therapists need to have a facilitating mindset when working with parents.
- A change in healthcare and professional education is needed: away from therapist-led and child-centred practices towards family-centred care.

interaction therapy (O'Toole et al., 2021). Also, known barriers to shared decision-making in health care, such as time constraints and a power imbalance between patients and health care professionals (Joseph-Williams et al., 2014), are thought to play a role with parents.

The complexity of collaboration demands flexibility and individualised approaches to fit therapists' and parents' unique situations. In order to facilitate the collaborative process, it is essential to enable both therapists and parents to collaborate with each other. In therapy settings, therapists play a crucial role in enabling parents to become a collaborative partner. Therapists need to facilitate trusting relationships, with mutual understanding, and need to empower parents (Klatte et al., 2020). In order to change practice, support is needed for therapists to overcome barriers and to enable them to implement collaborative practices in their daily work. Therefore, there is a need for practical recommendations and strategies for therapists to support them in the translation from theory to practice—how to collaborate with parents, taking the various therapists', parents' and children's factors into account. In other words, it needs to be made explicit what therapists can do to optimise their collaboration with parents.

The systematic review of Kokorelias et al. (2019) is a good example of being explicit about the kinds of practices that are important when collaborating with parents, based on existing models and theories of family-centred care: As they state, 'it is important to be clear about different roles parents can have in therapy'. Harniess et al. (2021) used realist synthesis to develop explicit theories about what works in parental engagement in early intervention for infants with cerebral palsy. They developed three theories about the quality of the relationship between parent, therapist and infant, parent education and co-designing interventions. They provide five explicit strategies that would be useful in parental engagement, such as that 'therapists [be] easily contactable between sessions'. O'Toole et al. (2021) formulated 21 key findings describing the facilitation of practices for implementing parent-child interaction therapy based on parental experiences. For example, 'Parents may be more likely to engage with the intervention when it is oriented to their family routines'.

These reviews outline important steps in exploring what therapists can do to optimise parental engagement based on theory (Harniess et al., 2021) and parent-child interaction therapy based on

parental experiences and perceptions (O'Toole et al., 2021). However, practical strategies for therapists to determine how to collaborate with parents are lacking. There is a need for an overview of practical strategies relevant to the elements of collaboration (mutually agreed-upon goals, shared planning, shared implementation and shared evaluation; An & Palisano, 2014) and its prerequisites (mutual understanding, trusting relationships and parental empowerment; Klatte et al., 2020). Which practical strategies work for therapists and parents can be best answered by those involved. Therefore, the current systematic review aims to review papers that focus on parents' and therapists' perspectives on what worked for them in their collaborations. This leads to the following research question: How can therapists optimally collaborate with parents of children with a developmental disorder in the age range of 2–6 years, according to therapists and parents?

2 | METHODS

The study protocol for this systematic review has been registered in the International prospective register of systematic reviews, PROSPERO number: 2021 CRD42021255954. In summary, we selected papers that focused on perspectives of therapists and/or parents of young children with developmental disabilities on collaborative practices. Next, we conducted a qualitative synthesis of the result sections of the included papers with a focus on strategies for therapists to use in their collaboration with parents.

2.1 | Eligibility criteria

The study objectives of papers to be included had to focus on two-way collaborations or on aspects of collaboration. The aspects of collaboration were chosen a priori to the selection procedure and were based on the preliminary programme theory underpinning collaborative practice with parents formulated by Klatte et al. (2020) and on the model of family-professional collaboration in paediatric rehabilitation of An and Palisano (2014). Studies were selected when at least some of the participants were parents or therapists. We focused on the age range between 2 and 6 years old, since children from the age of 2 years become less dependent of their parents and therapists tend to work more directly with the child; under 2, therapists are more used to collaborate with parents. The full eligibility criteria are listed in Table 1. We chose to select papers upward of 1998 based upon a key paper of Rosenbaum et al. (1998) defining family-centred care.

2.2 | Search strategy

A search strategy was developed based on several key papers retrieved from a quick literature scan and papers collected from authors' network partners. The search strategy used terms based upon 'collaboration', 'developmental disabilities', 'therapists' and

TABLE 1 Eligibility criteria for included papers.

Inclusion criteria

- Study focuses on collaboration
 - A two-way interaction
 - Aspects of collaboration (mutual understanding, parent-therapist relationship, parental empowerment, shared goal-setting, shared planning, shared implementation and shared evaluation)
 - Relevant topics (parent engagement, parent involvement and family-centred care)
- Study aim focuses on exploring perspectives of parents and/or therapists
- Study participants are parents of children with developmental disorders in the age range of 2–6 years or Therapists (physiotherapists/physical therapists, occupational therapists, speech and language therapists and early interventionists)
- Study describes original data (no reviews and no opinion papers)
- The findings of the study provide guidance for therapists to optimise their collaboration with parents

Exclusion criteria

- Study focuses mainly on training parents
- Study focuses solely on the stage before therapy (prevention, accessing therapy and diagnostics)
- Acute care
- Usability studies, such as studies aimed at evaluating the usability of a tool or intervention

'child'. The search strategy included a combination of free text and index terms (Appendix A). Searches were using databases MEDLINE (PubMed), CINAHL (OVID) and PsychINFO (OVID) for the period 1 January 1998 to 7 July 2021. The reference lists of all included studies were checked for relevant papers. A trained librarian of HU University of Applied Sciences Utrecht supported the development of the search terms and executed the search.

2.3 | Selection processes

Titles and abstracts identified were downloaded into RefWorks Citation Manager (ProQuest LLC, 2022) and duplicates removed. Remaining articles were imported into the research tool Rayyan (Ouzzani et al., 2016). Two reviewers (IK and AG) independently reviewed one third of all titles/abstracts with an agreement rate of 95%, resolving conflicts through discussion. Discussions yielded topics such as narrowing the inclusion criteria. For instance, acute care settings were excluded since these do not require prolonged engagement of parents with therapy. After the initial screening, it was decided that all remaining abstracts could be screened by one reviewer. A similar process was followed in screening full text papers, the first eight being independently screened by three reviewers (IK, MK and AG) and discussed. Based on this discussion, the inclusion and exclusion criteria were further refined. For example, the paper had to make practical suggestions for therapists to optimise their collaboration with parents. Next, two reviewers (IK and AG) independently screened 22 papers, discussing their decisions together with the third reviewer (MK), with an agreement rate of 59%. Since it was challenging to ensure that a

paper focused on a two-way collaboration, more detail was added to the screening instructions to define this (e.g., not only providing therapy to parents but also taking parents' preferences and needs into account). It was decided to continue the process with two reviewers for 10 further papers. After the review process for 40 papers independently conducted by two reviewers, there was an agreement rate of 90%. The remaining full texts were screened by a single reviewer (IK). In case of doubt, papers were discussed with another reviewer (AG and/or MK). In total, 22% of all full text articles was independently screened by two researchers.

2.4 | Data extraction and synthesis

Study characteristics about the included papers (e.g., study design, participants and health area) were extracted (see Table 4). Two reviewers (IK and AG) independently extracted the study characteristics of the first 33% of the papers. Since similar decisions were made, the extraction of the study characteristics of the following 67% of the papers was conducted by one reviewer (IK).

The data were synthesised in a qualitative way. The first step was to select elements of results sections relevant to our research question. The second step was to code the text line-by-line. The first three papers were independently analysed by three authors (IK, MK and AG) sequentially, with each paper being analysed and discussed prior to the analysis of the next one. Discussions were aimed at determining what kind of information answered our research question. It was decided to code information reflecting a positive influence on the collaboration according to parents and/or therapists. Neutral comments about what therapists did were not relevant. The next five papers were independently analysed by two authors (IK and AG), followed by a discussion of the codes. This process was repeated till all papers were analysed. The data included primary data and authors' descriptions of the findings. In order to be transparent, if a code was based on parents' or therapists' perspectives, the code names included a 'P' (=parent), 'T' (=therapist) or 'P/T' (=parent and therapist). ATLAS.ti 9 Windows (ATLAS.ti Scientific Software Development GmbH, 2022) was used to manage the data. The initial coding stage resulted in 437 initial codes. The third step was to aggregate the initial codes. The aggregation was conducted by IK and AG and discussed in a meeting with all authors. In Step 4, strategies were formulated using terminology close to the initial codes (see Table 2). In order to organise the formulated strategies, in Step 5, these were divided into clusters, named and discussed by all authors (see Table 3).

2.5 | Study risk-of-bias assessment

To get an indication of the methodological quality of the included studies, the Mixed Methods Appraisal Tool (MMAT) was used to appraise the quality of the studies (Hong et al., 2018). The MMAT was appropriate to use, since the current systematic review included studies with qualitative and mixed method study designs. Two authors

TABLE 2 Example of the process from initial codes to strategies.

| Strategy | Aggregation of initial codes |
|--|--|
| Inform parents about the disorder in general | P: inform parents about the disorder in general; T: clearly explain the child's disability |

TABLE 3 Example of the process from clustered strategies to a named cluster of strategies.

| Named cluster of strategies | Clustered strategies |
|-----------------------------|--|
| Get to know the family | Take time to get to know parents and their background Understand the family system using two-way communication Establish a good relationship with the child Try to understand the reason for parents' questions |

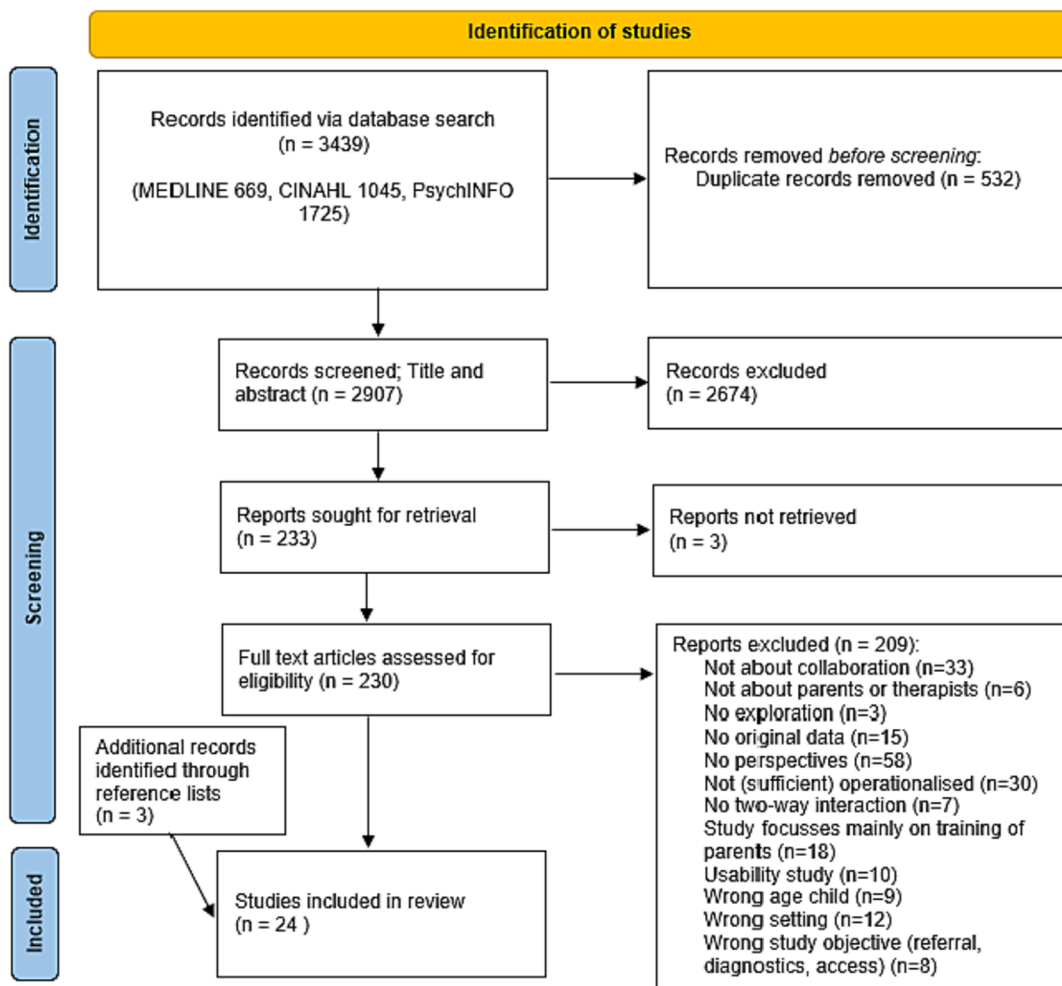
(IK and AG) independently completed the MMAT for 20% of the papers. Based on full agreement of the assessments, one author (IK or AG) conducted the appraisal of the other 80%. In cases of low methodological quality (less than 2 points out of 5), studies were excluded.

3 | RESULTS

The search generated 3439 records. Twenty-one studies met the criteria for inclusion in the review, with a further three papers identified from reference lists, making a total of 24 included studies. These studies included parents and therapists (physical therapists, occupational therapists and speech language therapists). Although some studies were performed in early intervention settings, early interventionists were not mentioned specifically as a profession. A PRISMA flow diagram (Page et al., 2021) with exact numbers included and excluded at each stage is shown in Figure 1.

3.1 | Study characteristics

Table 4 contains study characteristics of the studies included in this systematic review. Eleven focus on therapists' perspectives, eight on parental perspectives and five on a combination of perspectives. Most studies have qualitative study designs, except for three with mixed methods designs. In total, the 24 studies summarise the perspectives of 286 parents and of 769 therapists. The studies were conducted in early intervention ($n = 7$) and paediatric rehabilitation ($n = 8$) contexts, where therapists include physiotherapists, occupational therapists and speech and language therapists. Some studies were conducted in specific health areas, such as speech and language therapy ($n = 5$) or occupational therapy and/or physiotherapy ($n = 4$). We assessed 21 studies as having no methodological limitations and three having minor limitations (Appendix B).



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71

For more information, visit: <http://www.prisma-statement.org/>

FIGURE 1 PRISMA study flow chart.

3.2 | Results of qualitative synthesis

Data synthesis resulted in a large amount of specific strategies for therapists to use in their collaboration with parents. To support the reader in digesting all strategies, we have divided them into five clusters (see Table 5).

3.2.1 | Continuously invest time in your collaboration with parents

Collaboration with parents can only be optimised when therapists invest time in this. It is important not just to spend time on single occasions, for example, one meeting at the start of the therapy process but also to invest time in the collaboration with parents on an ongoing basis. In view of changing needs, priorities and

preferences of parents and children, therapists should frequently communicate with parents about therapy and goals. This is illustrated by a quote of Graham et al. (2018) who explored therapists' experiences with an intervention focusing on collaboration with parents:

Descriptions of spending more time and greater attention to listening to caregivers' concerns, aspirations and knowledge of their child dominated therapists' comments. ... Rather than perceiving listening as something that occurred early in therapy, before moving on to 'prescribing' solutions, therapists described it as something they now did throughout the therapy encounter.

Specific strategies for this cluster are illustrated in Table 6.

TABLE 4 Study characteristics.

| Study | Country | Study design | Study aim | Health area/children's condition, disabilities | Data collection methods | Participants |
|-------------------------------|-----------|----------------------|---|---|---|--|
| 1. Akamoglu et al. (2018) | USA | Qualitative research | To identify which SLT practices (a) facilitate the development of rapport and (b) are essential for positive child and parent outcomes, based on SLT perceptions | Speech and language therapy/speech and language impairments and delays, autism spectrum disorder and Down syndrome | Questionnaire with open-ended questions and interviews | 15 speech and language therapists |
| 2. Arcuri et al. (2016) | Canada | Mixed methods | To measure the extent to which parents and the healthcare provider perceive service provision as being family-centred, and to describe barriers and facilitators to the delivery of family-centred services | Paediatric rehabilitation/global developmental delay, genetic syndromes, severe language disorder and developmental coordination disorder | Questionnaire with closed questions, interviews and focus group | 7 professionals (social worker, psychologist, speech-language pathologist, programme coordinator, programme manager and 2 occupational therapists) and 19 parents |
| 3. Auert et al. (2012) | Australia | Qualitative research | To explore expectations, awareness and experiences of parents in their efforts to access evidence-based speech-language pathology services for their children with autism spectrum disorders | Speech and language therapy/autism spectrum disorder | Focus groups | 20 parents |
| 4. Blue-Banning et al. (2004) | USA | Qualitative research | To explore what specific indicators of professional behaviour do parents and professionals identify as indicative of collaborative partnerships | Early intervention/children with and without disabilities | Focus groups and interviews | 137 family members (131 parents and 6 others [grandparent and sibling]) and 53 therapists (17 administrators and 36 direct service providers working in fields of education [13], human/social services [28], health care [9] and combination of fields [3]) |
| 5. Brassart et al. (2017) | Canada | Qualitative research | To explore the obstacles encountered by service providers and the strategies they use to increase the level of engagement and understanding of the therapeutic process by immigrant parents raising a child with a disability | Paediatric rehabilitation/children with a disability | Interviews | 21 service providers (6 speech-language pathologists, 4 social workers, 4 occupational therapists, 3 physiotherapists, 2 specialised educators, and 2 psychologists) |

TABLE 4 (Continued)

| Study | Country | Study design | Study aim | Health area/children's condition, disabilities | Data collection methods | Participants |
|--------------------------------|-----------------|----------------------|--|--|--|--|
| 6. Carroll and Sixsmith (2016) | Ireland | Qualitative research | To explore children's, parents' and professionals' experiences of early intervention disability services | Early intervention/children with developmental disabilities | Interviews | 5 children, 6 parents and 18 professionals (4 nurses, 3 speech and language therapists, 3 physiotherapists, 2 occupational therapists, 1 social worker, 1 care assistant, 1 family support worker, 1 dietician, 1 psychologist and 1 team leader) |
| 7. Coogle and Hanline (2016) | USA | Qualitative research | To investigate the early intervention experiences of mothers who have a young child at risk for autism spectrum disorder | Early intervention/at risk for autism spectrum disorder | Observations, interviews and document analyses | 5 parents |
| 8. Crom et al. (2020) | The Netherlands | Qualitative research | To explore perceptions and preferences of children, parents and physical therapists regarding the therapeutic alliance in paediatric physical therapy in a rehabilitation setting. | Paediatric rehabilitation/children with developmental disabilities | Interviews | 10 children and their parents and 10 physical therapists |
| 9. Curtiss et al. (2021) | USA | Qualitative research | To understand the attitudes of providers regarding father involvement in early intervention | Early intervention/not specified | Questionnaire with open-ended questions | 511 early intervention providers (35.4% speech and language therapists, 18.1% developmental therapists or special instructors, 15.3% nonclinical team members [parent liaisons, translators and service coordinators], 11.5% physical therapists [59], 10.5% occupational therapists and 9.3% mental, behavioural or physical health professionals [nutritionists, socioemotional consultants or behaviour specialists]) |

(Continues)

TABLE 4 (Continued)

| Study | Country | Study design | Study aim | Health area/children's condition, disabilities | Data collection methods | Participants |
|----------------------------|-----------|----------------------|---|--|--|---|
| 10. Di Rezze et al. (2014) | Canada | Mixed methods | To generate observable attributes of general paediatric therapy behaviours that are considered to be essential within family-centred rehabilitation intervention sessions for children with physical disabilities | Paediatric rehabilitation/children with physical disabilities | Delphi study (results out of scope of this review) Interviews | Interviews: 17 therapists (8 occupational therapists and 9 physical therapists) |
| 11. Edwards et al. (2016) | Australia | Qualitative research | To explore the qualities parents want in therapists who work with their children with autism spectrum disorder | Speech and language therapy/children with autism spectrum disorder | Interviews | 14 parents |
| 12. Foster et al. (2013) | USA | Qualitative research | To understand the perceptions of mothers of children with autism spectrum disorders who participated in ten 1-h coaching sessions | Occupational therapy/autism spectrum disorder | Interviews | 10 mothers |
| 13. Graham et al. (2018) | Australia | Qualitative research | To explore therapists' experiences of using occupational performance coaching and their perceptions of the contextual factors which influence its implementation | Occupational and physical therapy/children with a disability in rehabilitation context | Interviews and focus groups | 16 therapists (4 physiotherapists and 12 occupational therapists) |
| 14. King et al. (2015) | Canada | Qualitative research | To examine therapists' perceptions of (a) the importance of effective communication and engagement in the delivery of paediatric rehabilitation services to immigrant parents of children with disabilities, (b) the elements of a culturally sensitive approach and (c) the strategies they use to effectively communicate and engage with immigrant parents in the therapeutic intervention process | Paediatric rehabilitation/children with physical disabilities | Interviews | 42 therapists (10 social workers, 16 occupational therapists and 16 speech-language pathologists) |

TABLE 4 (Continued)

| Study | Country | Study design | Study aim | Health area/children's condition, disabilities | Data collection methods | Participants |
|-------------------------------------|-----------------|----------------------|--|---|--|---|
| 15. King et al. (2019) | Canada | Qualitative research | To investigate family members' experiences and perceptions of the benefits or impacts of solution-focused coaching in paediatric rehabilitation | Paediatric rehabilitation/children receiving physical or occupational therapy | Interviews | 6 mothers, 1 youth, 1 mother and father couple and 1 grandmother and youth |
| 16. Klatte et al. (2019) | United Kingdom | Qualitative research | To explore speech and language therapists' views about the factors that facilitate or pose barriers to parents' engagement in parent-child interaction therapy | Speech and language therapy/children with developmental language disorders | Interviews | 10 speech and language therapists |
| 17. Krujssen-Terpstra et al. (2016) | The Netherlands | Qualitative research | To explore the experiences and needs of parents of young children (aged 2–4 years) with cerebral palsy regarding their child's physical and occupational therapy process in a rehabilitation setting | Occupational and physical therapy/children with cerebral palsy | Interviews | 21 parents |
| 18. Lea (2006) | USA | Qualitative research | To examine the perspectives and experiences of 6 adolescent mothers and their service providers | Early intervention/children with disabilities | Observations, interviews and document analyses | 6 parents and the service providers of their children (6 special educators, 4 physical therapists, 1 speech-language pathologists, 2 service coordinators, 1 child care provider, 1 infants and toddlers programme coordinator and 1 service coordinators' administrator) |
| 19. LeRoy et al. (2015) | Canada | Qualitative research | (1) To explore physical therapists' beliefs about the value of walking for children with cerebral palsy; (2) to examine how these beliefs inform therapy choices; and (3) to describe how physical therapists engage parents and children in decision-making regarding walking goals and interventions | Paediatric rehabilitation/children with cerebral palsy | Interviews | 8 physical therapists |

(Continues)

TABLE 4 (Continued)

| Study | Country | Study design | Study aim | Health area/children's condition, disabilities | Data collection methods | Participants |
|--------------------------------|-----------|----------------------|---|---|--|--|
| 20. Meadan et al. (2018) | USA | Mixed methods | (1) To explore early intervention professionals' beliefs about and practices for coaching caregivers? (2) To explore early intervention professionals' challenges and benefits of coaching caregivers | Early intervention/children with disabilities and developmental delays | Questionnaire with closed and open-ended questions | 58 early intervention professionals (14 speech pathologists, 11 special education interventionists, 9 occupational therapists, 9 physical therapists, 7 service coordinators, 6 other early intervention support personnel and 2 school psychologists) |
| 21. Øien et al. (2009) | Norway | Qualitative research | To explore parents' and professionals' perceptions of setting and implementing goals within a family-centred rehabilitation programme for pre-schoolers with cerebral palsy | Paediatric rehabilitation/children with cerebral palsy | Focus groups | 6 parent couples, 7 mothers and 11 therapists and staff from kindergarten |
| 22. Pighini et al. (2014) | Canada | Qualitative research | To explore parents experiences with early intervention services | Early intervention/children with or at risk of developmental delays or disabilities | Focus groups, interviews and document analysis | 5 parent couples and 1 grandmother |
| 23. Schwellnus et al. (2020) | Canada | Qualitative research | To explore perceived impacts of solution-focused coaching in paediatric rehabilitation from the viewpoint of experienced therapists | Paediatric rehabilitation/not specified | Interviews | 6 therapists (4 occupational therapists and 2 physical therapists) |
| 24. Watts Pappas et al. (2016) | Australia | Qualitative research | To capture the changing nature of the experience of parental involvement in speech intervention over time | Speech and language therapy/children with speech sound disorders | Interviews | 7 parents |

TABLE 5 Clusters of strategies.

- Continuously invest time in your collaboration with parents
- Be aware of your important role in the collaboration with parents
 - Your mindset
 - Your communication style
- Tailor your approach
- Get to know the family
- Empower parents to become collaborative partners
 - Ensure parents' understanding
 - Give parents emotional support
 - Give parents the ability and opportunity to bring up subjects and ask questions

3.2.2 | Be aware of your important role in the collaboration with parents

Therapists play a key role in their collaboration with parents and what they feel, think and do can influence this collaboration. Within this cluster, strategies regarding the subclusters *your mindset* and *your communication style* are presented.

Your mindset

Nearly all papers describe the importance of therapists' mindsets in the collaboration between parents and therapists (see Table 7). Strategies are about treating parents with respect, being open-minded and

TABLE 6 Strategies related to the cluster 'Continuously invest time in your collaboration with parents'.

| Strategy | Article numbers | Mentioned by parents (P) and/or therapists (T) |
|---|--|--|
| Invest time in optimising the collaboration with parents | 1, 3, 4, 5, 6, 7, 11, 13, 14, 15, 16, 18, 24 | P and T |
| Frequently communicate with each other about therapy and goals, and parents' (changing) needs, priorities and preferences | 5, 7, 12, 13, 14, 15, 20, 21 | P and T |
| Give parents time to absorb all information | 14 | T |

TABLE 7 Strategies related to the subcluster 'your mindset'.

| Strategy | Article numbers | Mentioned by parents (P) and/or therapists (T) |
|--|-------------------------------------|--|
| Be open-minded to parents' suggestions/backgrounds | 6, 12, 14 | P and T |
| Act non-judgementally | 4, 5, 12, 14, 16, 18, 20, 23 | P and T |
| Do not make assumptions | 11, 14 | P and T |
| Show respect to parents <ul style="list-style-type: none"> • Show respect to parents' input • Be on time for meetings • Respect each other's time investment | 2, 4, 14, 18, 19, 20, 24 | P and T |
| Be honest and open <ul style="list-style-type: none"> • Be honest about what is going on: do not leave information out or trivialise the situation • Be yourself/be real • Keep your promises • Be clear about what your competences are and are not | 1, 2, 4, 8, 10, 11, 13, 17, 18, 24 | P and T |
| Act upon the belief that parents are central in their child's life <ul style="list-style-type: none"> • Let parents make final treatments decisions • Take on a facilitative role to position caregivers as owners of problems, goals and solutions • Value parents' opinions and input | 2, 13, 14, 15, 19 | P and T |
| Be empathic/sensitive <ul style="list-style-type: none"> • Act upon the belief that every parent does the best they can with the resources they have • Be careful/tactful with language | 3, 4, 8, 10, 13, 14, 19, 20, 15, 23 | P and T |
| Treat every family as unique | 4, 14 | P and T |
| Be approachable | 1, 14, 24 | P and T |
| Be pro-active | 3, 4, 11 | P and T |
| Be flexible (location, communication device, planning, interview structure, your goals and plans) | 1, 9, 13, 23 | T |

non-judgemental and not making assumptions. This is illustrated by a participating therapist in Meadan et al. (2018):

Families are the expert on their child and family. My role in early intervention is not to judge them or get them to 'come around to my way of thinking'. It is to support the caregiver and child in their current environment. Every family does the best they can in the situation they are in with the resources they have.

Your communication style

Parents and therapists described the importance of a positive communication style, focusing on strengths as well as challenges and sharing positive comments in response to parents' input. An open communication style using open questions and truly listening to parents is helpful and enables parents to give input. Edwards et al. (2016) states the following about a participating mother:

Joanna identified the value of the information that parents are able to provide and expressed frustration that her input was often not considered: 'I want someone to listen to me, because for 6 years we have been with him day and night, and we have got information that can help.'

The importance of asking parents open questions is underlined in the study of Coogle and Hanline (2016):

George's mother described how she worked with different interventionists and how they were all interested in her concerns. She said: 'The thing that is really nice is they all ask specifically what are our concerns. The approach is different, but they all have similar beginnings when they ask how is this impacting you? What do you need the most? It is helpful – it makes me feel that the services are more appropriate to our situation.'

Specific strategies for this subcluster are illustrated in Table 8.

3.2.3 | Tailor your approach

Preferences, ability and opportunity in the way parents would like to collaborate differ for each parent, and with each parent, it can differ from time to time. For therapists, it is therefore important to continuously tailor their approach to parents' (changing) needs, preferences and abilities by discussing what works for parents. As illustrated by the quote of a participating therapist in the study of King et al. (2015): 'Tailoring practice was seen as part of building a collaborative relationship: "I think that tailoring your approach – 'adapting' – and building a relationship of trust are very important."'

Specific strategies for this cluster are displayed in Table 9.

3.2.4 | Get to know the family

Getting to know the parents and their background is an important element in optimising the collaboration with them. When you understand parents' background, it helps to set realistic expectations of the role parents might have in treatment, as illustrated in the paper of King et al. (2015):

'Obviously you cannot learn about every single culture there is, but just to have some sort of understanding so that you can be more sensitive in working with the families, making them part of your team in a positive way that they can feel more empowered' (OT7). Understanding the family situation contributed to realistic expectations of the role families might have in treatment, or the degree to which they might become engaged in the process.

Strategies (Table 10) suggested in this cluster include making home visits, observing and listening to parents and using a two-way communication style.

3.2.5 | Empower parents to become collaborative partners

For therapists, it is essential to be aware that parents need to be empowered to become collaborative partners. The strategies are organised into three subclusters: ensure parents' understanding, provide parents with emotional support and give parents the ability and opportunity to bring up subjects and ask questions.

Ensure parents' understanding

Only when parents understand the child's diagnosis, the prognosis and the therapy process, are they capable of making informed decisions and taking an active role in implementing and evaluating interventions. This is illustrated in the paper of Kruijsen-Terpstra et al. (2016):

Many parents reported having had an urgent desire for general information on CP [Cerebral Palsy] when their child just started therapy at the rehabilitation center. Parents mentioned that it was difficult for them to ask for specific information at a time when they were still quite unfamiliar with their child's diagnosis and the rehabilitation setting. Parents reported that they appreciated it when therapists took the initiative in providing this general information. 'Yeah, that [i.e. information on the way children with CP can function in society] is what I really missed! You enter a world that you know nothing whatsoever about. You leave the hospital with the child and they tell you "Well, keep track of its development." And that's about it.'

TABLE 8 Strategies related to the subcluster 'Your communication style'.

| Strategy | Article numbers | Mentioned by parents (P) and/or therapists (T) |
|---|--|--|
| Be positive/emphasise strengths <ul style="list-style-type: none"> • Use a strength-based approach • Celebrate small wins • Look for growth in child and parent • Include positive comments about a child as well as the challenges | 4, 5, 7, 15, 20 | P and T |
| Use open questions, such as <ul style="list-style-type: none"> • What questions do you have (instead of 'Do you have questions?') • What is actually important to you? • What do you want us to work on together? • How are things going at home? • How is this impacting you? • What do you need the most? • What do you think? | 2, 7, 14, 15 | P and T |
| Use an active listening style <ul style="list-style-type: none"> • Be interested in the parents, ask questions • Ask questions about family's situation/background • Follow parents' lead in your interview, trying not to structure the conversation too much | 1,2, 4, 5, 7, 11, 13, 14, 15, 17, 22, 24 | P and T |
| Be solution-focused | 14, 15, 21, 23 | P and T |

TABLE 9 Strategies related to the cluster 'Tailor your approach'.

| Strategy | Article numbers | Mentioned by parents (P) and/or therapists (T) |
|--|---------------------------------|--|
| Tailor the frequency and style of communication | 7, 17, 20 | P and T |
| Discuss with parents process and roles in terms of determination of treatment goals and plans, implementation and evaluation of the intervention | 3, 5, 8, 11, 17, 20 | P and T |
| Share information in ways that meet the learning needs of the parents | 14, 20 | T |
| Implement goals and activities in daily life | 1, 5, 14, 21, 24 | P and T |
| Determine short- and long-term goals with parents based on their priorities. Formulated goals should be: <ul style="list-style-type: none"> • Small • Achievable • Concrete • Functional • Observable | 3, 5, 6, 13, 15, 16, 19, 20, 21 | P and T |
| Continuously communicate with parents to see if goals and plans are still in line with their and their child's needs <ul style="list-style-type: none"> • Review goals repeatedly with parents • Negotiate and look for compromises when families and therapists disagree on therapeutic goals and interventions • Incorporate new goals or priorities as they emerge • Check with parents if goals are still in line with their needs when something does not work during the therapy process | 5, 13, 14, 19, 20, 23 | P and T |
| Involve parents and/or other relevant family members | 5, 9, 14, 22 | P and T |
| Discuss with parents the frequency and timing (including the time of the day) of therapy sessions | 13 | T |
| Support parents by using your competence | 8, 11, 21, 23 | P and T |

Several strategies are mentioned in Table 11 to ensure parents understanding and to support parents in receiving and processing information.

Provide parents with emotional support

Emotional support for parents is crucial in enabling them to become collaborative partners. It is important for therapists to be aware that

TABLE 10 Strategies related to the cluster ‘Get to know the family’.

| Strategy | Article numbers | Mentioned by parents (P) and/or therapists (T) |
|--|-------------------|--|
| Take time to get to know parents and their background <ul style="list-style-type: none"> • Observe and listen to parents • Conduct home visits • Try to understand how parents operate on a daily basis—using conversations and dialogue with parents | 2, 5, 14, 16, 18 | P and T |
| Understand the family system by using two-way communication | 4, 14 | P and T |
| Establish a good relationship with the child <ul style="list-style-type: none"> • Invest in the relationship with the child • Be open, empathic and welcoming towards the child • See the child as a whole person, not just a diagnosis | 1, 3, 4, 7, 8, 24 | P and T |
| Try to understand why parents ask questions | 14 | T |

parents might not feel secure enough about their own capabilities to collaborate with them. For example, a therapist participating in the study of Brassart et al. (2017) says:

Positive reinforcement is crucial, as the IP [Immigrant Parent] sometimes feel doubtful regarding their abilities due to cultural differences in childcare practices: ‘They feel as if they know nothing about their child. They forget that they are competent, even if they have other children. I have to work hard to boost their confidence. Afterwards, they are more available to listen and exchange with the therapists about activities they have to do.’ (SP-11).

Specific strategies for this subcluster can be found in Table 12.

Give parents the ability and opportunity to bring up subjects and ask questions

Parents need to be enabled to become collaborative partners by developing their abilities and giving them the opportunity to bring up subjects and ask questions. Therapists should actively guide parents in expressing their opinions, asking their questions, and invite them to share their thoughts. As illustrated by Blue-Banning et al. (2004): ‘They [participating parents] also described the need for professionals to empower families by actively encouraging them to express opinions and helping families gain skills to enable them to participate fully in decision-making.’ Specific strategies are displayed in Table 13.

4 | DISCUSSION

This systematic review makes explicit how therapists can optimise their collaboration with parents of young children with developmental disabilities, according to the perspectives of parents and therapists. The qualitative synthesis of 24 papers resulted in an overview of specific strategies organised into five clusters: (1) continuously invest time in your collaboration with parents, (2) be aware of your important role

in the collaboration with parents, (3) tailor your approach, (4) get to know the family and (5) empower parents to become collaborative partners. We have chosen to formulate these new clusters and not to use existing models or theories of collaboration (An & Palisano, 2014; Klätte et al., 2020; Mas et al., 2022). The reason for this is that the strategies, for example ‘invest time in optimising the collaboration with parents’, are overarching and it is expected that most strategies interact with more than one component.

The strategies are based on the perspectives of therapists and parents and are therefore expected to be relevant and useful for optimising collaboration in clinical practice. Results show that therapists and parents have similar perspectives on what is important in their collaboration. Only a few strategies are based solely on parents' or therapists' views. We expect that these differences can be explained by the study designs: some subjects are discussed only with therapists or parents and are not explicitly checked with the other group. The strategies were based on findings of papers focusing on collaboration between therapists and parents. We included papers that focused on specific approaches, such as parent coaching (Foster et al., 2013; Graham et al., 2018; King et al., 2019; Meadan et al., 2018; Schweltnus et al., 2020). From these approaches, we extracted the useful strategies according to parents and therapists.

To support therapists in collaborating with parents, the strategies are formulated in a specific and active manner directed to therapists. Therapists can use the strategies to consciously decide how to optimise their collaboration with each individual parent. Meaning that they can choose strategies relevant to their clinical situation and not use it as a checklist to tick off strategies. These practical strategies add significantly to the broader findings of other systematic reviews looking for essential elements of the collaborative process between parents and therapists (Harniess et al., 2021; Kokorelias et al., 2019; O’Toole et al., 2021).

Strategies that could not directly be used by therapists were beyond the scope of this systematic review. Others have included strategies focusing on how to facilitate parents in their collaboration with therapists or on required changes at the organisational level. For example, Kokorelias et al. (2019) advocate peer support groups

TABLE 11 Strategies related to the subcluster 'ensure parents' understanding'.

| Strategy | Article numbers | Mentioned by parents (P) and/or therapists (T) |
|---|--|--|
| Ensure parents understand the diagnosis/disorder <ul style="list-style-type: none"> • Inform parents about the disorder in general • Explain normal development to parents, so that they can understand the child's difficulties • Explain the common views of the disability in the local culture • Support parents in their process of digesting and understanding the diagnosis | 2, 5, 11, 17 | P and T |
| Ensure parents understand the (uncertainty around) the prognosis <ul style="list-style-type: none"> • Discuss the (uncertainty around) the prognosis—e.g., explain that we do not know which way development will go | 2, 17 | P and T |
| Ensure parents understand the therapy process/sessions <ul style="list-style-type: none"> • Provide parents with information about what is coming in therapy • Help parents to understand the important role they have in the therapy process • Explain what you can do to help parents and the child • Explain the role of each professional that works with the family • Supply parents with a summary of the report • Explain the report and test results to parents • Write notes for parents about each therapy session • Share information about what you are doing, what is helpful and what the next steps are • Help parents to make the link between activities and the therapy goals during therapy process • Explain the reasons behind the assessment • Explain the rationale of the treatment decisions • Share research literature with parents related to treatment decisions | 1, 2, 3, 5, 6, 8, 11, 14, 16, 23, 24 | P and T |
| Increase parents' skills <ul style="list-style-type: none"> • Give parents more insight into their own capabilities (give constructive feedback; use video as a reflection tool) • Model activities • Support parents in delivering therapy activities at home | 2, 10, 20, 21, 24 | P and T |
| Give parents more insight in the child's constraints, interests, progress and learning potential <ul style="list-style-type: none"> • Provide parents with regular feedback about their child's progress over time • Use joint observation • Help parents to reflect on daily routines to give them more insight into their children's needs • Discuss parents' expectations of their children's development • Conduct home visits as these support parents in understanding their children's conditions and developmental progress | 3, 4, 5, 7, 10, 11, 12, 13, 14, 16, 19, 21, 22 | P and T |
| Check parents' understanding <ul style="list-style-type: none"> • Welcome questions • Ask questions to assist understanding • Observe parents' reactions • Ask parents to reformulate what they have understood | 5, 14, 20 | T |
| Facilitate parents in receiving relevant information <ul style="list-style-type: none"> • Keep a notebook to share information received from all professionals • Coordinate and organise information • Decide which communication aid to use, based on parents' ability and preferences • Modify your language to parents' level of understanding: no jargon; use parents' own words • Translate your information into parents' own language • Use visual strategies • Re-explain things: come back to things later • Use simple concrete or basic examples that are relevant to families | 1, 2, 4, 5, 8, 13, 14, 20 | P and T |

for parents. Harniess et al. (2021) describe the importance of the relational continuity with a single therapist, which links to the organisational structure in which the therapy process takes place.

The large number of strategies identified in this review shows the complexity of collaboration. These strategies support therapists in integrating collaborative approaches into their clinical practice.

TABLE 12 Strategies related to the subcluster 'Provide parents with emotional support'.

| Strategy | Article numbers | Mentioned by parents (P) and/or therapists (T) |
|--|--------------------------|--|
| Give parents confidence by letting them know they are capable of supporting their child <ul style="list-style-type: none"> Give parents confidence and awareness that they are capable of caring for their child in the long run Help parents to believe in themselves that they can make the right choices and are the skilled partners and experts for their child Let parents feel successful in achieving goals | 2, 7, 12, 14, 15, 16, 20 | P and T |
| Acknowledge parents' opinions, feelings, needs and views | 4, 6, 18, 22 | P |

TABLE 13 Strategies related to the subcluster 'Give parents the ability and opportunity to bring up subjects and ask questions'.

| Strategy | Numbers | Mentioned by parents (P) and/or therapists (T) |
|--|------------------------------------|--|
| Guide parents in expressing their opinions and asking questions | 4, 11, 14 | P and T |
| Guide parents to come up with their own solutions instead of just telling them what to do | 13, 15, 23 | P and T |
| Give parents the opportunity to ask questions and bring up issues | 14, 17, 22, 24 | P and T |
| Give parents the opportunity to share their own observations (at home) related to treatment goals | 8 | P and T |
| Ask parents and/or listen to <ul style="list-style-type: none"> their needs, priorities and experiences what has or has not worked for them what success would look like for them their and their child's likes and dislikes | 1, 5, 8, 9, 10, 13, 14, 19, 20, 22 | P and T |
| Give parents access to resources and information about <ul style="list-style-type: none"> support services such as parent associations and community organisations other treatment options | 4, 5 | P and T |

However, it cannot be expected that this overview will automatically lead to the use of these strategies by therapists. Their use requires therapists to work in different ways, implying a change in behaviour. Adopting new behaviour requires specific capabilities, motivational factors and opportunities (Michie et al., 2014). The current systematic review is a first step in facilitating therapists to adopt collaborative behaviour, by giving them more knowledge about how to collaborate with parents. More knowledge increases a persons' capability (Michie et al., 2014). However, barriers regarding a therapists' motivation or a lack of opportunities can also hinder a therapist to collaborate with parents. Examples of known barriers relating to opportunities are rigid models of service delivery, time and financial constraints (Kokorelias et al., 2019; Melvin et al., 2019). Barriers can be present at an individual level, but also at organisational or policy levels. In order to facilitate therapists in their collaboration with parents, a well-thought-out approach is needed that looks into the barriers and facilitators in specific contexts, at individual, organisation and policy levels (Michie et al., 2014).

For future research studies on interventions for children with developmental disabilities and their parents, we advocate being explicit about how to collaborate with parents. In our systematic search, we excluded many papers that were not explicit about how therapists and parents collaborated. For example, it was not clear how therapists supported parents to become collaborative partners in the therapy for their child. Or it was not clear whether therapists used

two-way interactions: truly listened to parents' concerns, priorities and needs. We recommend the use of the TIDieR guidelines to support careful and detailed descriptions of interventions and to support replication of studies (Hoffmann et al., 2014).

4.1 | Limitations

We realise that we may have missed some papers relevant in the context of the topic of collaboration, given our inclusion criteria (e.g., age range) and choice of databases. However, we have found a large number of strategies that fit with all important components of the different models of collaboration (An & Palisano, 2014; Klatte et al., 2020).

5 | CONCLUSIONS

This systematic review has resulted in an overview of concrete strategies for therapists to use in their collaboration with parents of children with developmental disorders. The large number of available strategies illustrates the complexity of collaboration that therapists have to deal with in daily practice. Therapists may benefit from support in applying these strategies to identify and overcome barriers to collaborative context in specific contexts.

AUTHOR CONTRIBUTIONS

Inge S. Klatte: Investigation; writing—original draft; writing—review and editing; methodology; formal analysis; funding acquisition. **Marjolijn Ketelaar:** Supervision; writing—original draft; methodology; formal analysis; writing—review and editing. **Annemieke de Groot:** Investigation; methodology; formal analysis; writing—review and editing. **Manon Bloemen:** Supervision; methodology; writing—review and editing. **Ellen Gerrits:** Supervision; funding acquisition; methodology; writing—review and editing.

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CONFLICT OF INTEREST STATEMENT

The authors report no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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APPENDIX A: SEARCH TERMS

PubMed search COMPLETE (7-7-2021)

(“Professional-Family Relations”[Mesh] OR “Professional-Patient Relations”[Mesh:NoExp] OR “Therapeutic Alliance”[Mesh] OR parental engagement[Title/Abstract] OR family engagement[Title/Abstract] OR parent involvement[Title/Abstract] OR family involvement[Title/Abstract] OR parental participation[Title/Abstract] OR family participation[Title/Abstract] OR parent capacity building[Title/Abstract] OR therapeutic alliance[Title/Abstract] OR therapeutic relationship[Title/Abstract] OR parent-professional[Title/Abstract] OR client-professional[Title/Abstract] OR co-practice[title/abstract] OR co-working[title/abstract] OR collaborat*[title/abstract] OR cooperati*[title/abstract] OR shared evaluation[title/abstract] OR goal setting[title/abstract] OR “empowerment”[Mesh] OR empowerment[title/abstract] OR “patient care planning”[Mesh] OR patient care planning[title/abstract] OR “cooperative behavior”[Mesh] OR cooperative behavior[title/abstract] OR “patient participation”[Mesh] OR patient participation[title/abstract] OR “decision making, shared”[Mesh] OR shared decision making[title/abstract] OR mutual understanding [title/abstract] OR shared implementation[title/abstract] OR interact*[title/abstract]).

AND

(“Developmental Disabilities”[Mesh] OR developmental disabilit*[Title/Abstract] OR “Disabled Children”[Mesh] OR developmental disorder*[Title/Abstract] OR speech-language disorder*[Title/Abstract] OR speech disorder*[Title/Abstract] OR language disorder*[Title/Abstract] OR special need*[title/abstract]).

AND

(“Speech-Language Pathology”[Mesh] OR speech-language patholog*[Title/Abstract] OR “Physical Therapists”[Mesh] OR speech-language pathol*[title/abstract] OR language patholog*[Title/Abstract] OR language therap*[Title/Abstract] OR speech-language therap*[title/abstract] OR physical therap*[Title/Abstract] OR physiotherap*[Title/Abstract] OR “Allied Health Occupations”[Mesh:NoExp] OR “Occupational Therapy”[Mesh] OR “Physical Therapy Specialty”[Mesh] OR “Early Intervention Education”[Mesh] OR occupational therap*[tiab] OR early intervention[tiab])

AND

(“Child”[Mesh] OR child*[Title/Abstract] OR toddler*[Title/Abstract])

APPENDIX B: MMAT CRITIQUE

MMAT qualitative studies

| First author (year) | 1.1. Is the qualitative approach appropriate to answer the research question? | 1.2. Are the qualitative data collection methods adequate to address the research question? | 1.3. Are the findings adequately derived from the data? | 1.4. Is the interpretation of results sufficiently substantiated by data? | 1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation? | Comments |
|---------------------|---|---|---|---|--|---|
| Akamoglu (2018) | Yes | Yes | Yes | Yes | Yes | |
| Auert (2012) | Yes | Yes | Yes | Yes | Yes | |
| Blue-Banning (2004) | Yes | Yes | Yes | Yes | Yes | |
| Brassart (2017) | Yes | Yes | Yes | Yes | Yes | How did they come to the percentages? |
| Carroll (2016) | Yes | Yes | Yes | No | Yes | 1.4: Minimal use of quotes, no overview of codes and themes present. |
| Coogler (2016) | Yes | Yes | Yes | Yes | Yes | |
| Crom (2020) | Yes | Yes | Yes | Yes | Yes | |
| Edwards (2016) | Yes | Yes | Yes | Yes | Yes | |
| Foster (2013) | Yes | Yes | Yes | Yes | Yes | Results and discussion is in the same section. We have to be cautious what to code. |
| Graham (2018) | Yes | Yes | Yes | Yes | Yes | |
| King (2015) | Yes | Yes | Yes | Yes | Yes | |

(Continues)

| First author (year) | 1.1. Is the qualitative approach appropriate to answer the research question? | 1.2. Are the qualitative data collection methods adequate to address the research question? | 1.3. Are the findings adequately derived from the data? | 1.4. Is the interpretation of results sufficiently substantiated by data? | 1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation? | Comments |
|---------------------------|---|---|---|---|--|--|
| King (2019) | Yes | Yes | Yes | Yes | Yes | |
| Klatte (2019) | Yes | Yes | Yes | Yes | Yes | |
| Kruijssen-Terpstra (2016) | Yes | Yes | Yes | Yes | Yes | |
| Lea (2006) | Yes | Yes | Yes | Yes | Yes | |
| LeRoy (2015) | Yes | Yes | Yes | Yes | Yes | 1.4: No overview with codes. However, good use of quotations to support the findings. |
| Øien (2009) | Yes | Yes | Yes | Yes | Yes | |
| Pighini (2014) | Yes | Yes | Cannot tell | Yes | Yes | 1.3: The information about the methodology is not detailed enough. For example, it is not clear if the coding is done independently by two researchers. Ethnography is not introduced in the methodology section and is suddenly named under the heading 'validation process'. |
| Schwellnus (2020) | Yes | Yes | Yes | Yes | Yes | |
| Watts Pappas (2016) | Yes | Yes | Yes | Yes | Yes | |

MMAT mixed method studies

| First author (year) | 5.1. Is there an adequate rationale for using a mixed methods design to address the research question? | 5.2. Are the different components of the study effectively integrated to answer the research question? | 5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted? | 5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed? | 5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved? | Comments |
|---------------------|--|--|--|---|---|---|
| Arcuri (2016) | Yes | Yes | Yes | Yes | Yes | |
| Di Rezze (2014) | Yes | Yes | Yes | Yes | Yes | 5.4: The triangulation of the different data sources is described and the different outcomes are explained. |
| Meadan (2018) | Yes | Yes | Yes | Yes | No | 5.4: No differences found, 5.5: No information about the validity of the survey questions. No info about how the QL data is analysed |