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ORIGINAL RESEARCH

Barriers Perceived by Professionals in Family-Centered Early Intervention Services: A Systematic Review of the Current Evidence

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Abstract

Family-centered services are the recommended early intervention approach to develop and deliver services for children with disabilities and their families. This systematic review aims to identify and highlight what barriers service providers in family-centered early intervention perceive that prevent them from providing high-quality services focused on the family and the child's overall well-being. We identified 37 articles that met the selection criteria of the first initial search of 1858 articles. These studies provided insights from both service providers and families. The identified barriers were categorized into eight dimensions: family, child, knowledge, and application of the approach/model, professional beliefs, natural environment, service coordination, working conditions, and current legislation. The main barriers identified were family barriers, insecurities perceived by professionals and difficulties in their ability to provide services, changes in their attitudes and behaviors when they perceive that they are losing their role as experts, lack of knowledge and application of specific practices, and lack of skills needed to engage primary caregivers in natural settings. These findings should inform policy implementation at local and state levels in countries where family-centered service is established in early childhood programs.

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Abstrait
Les services centrés sur la famille constituent l'approche d'intervention précoce recommandée pour développer et fournir des services aux enfants handicapés et à leurs familles. L'objectif de cette revue systématique était d'identifier et de mettre en évidence les obstacles que les prestataires de services d'intervention précoce centrés sur la famille perçoivent comme les empêchant de fournir des services de haute qualité axés sur le bien-être global de la famille et de l'enfant. Notre première recherche initiale de 1 858 articles a permis d'identifier 37 articles répondant aux critères de sélection. Ces études fournissent des informations sur les prestataires de services et les familles. Les obstacles identifiés ont été classés en huit catégories : familles, enfants, connaissances, application des méthodes/modèles, convictions professionnelles, environnement physique, coordination des services, conditions de travail et législation en vigueur. Les principaux obstacles identifiés sont les suivants : obstacles familiaux, perception par les professionnels de l'insécurité et des difficultés liées à la prestation de services, changements d'attitude et de comportement lorsque les professionnels ont l'impression de perdre leur rôle d'expert, manque de connaissances et d'application de pratiques spécifiques, et manque de compétences nécessaires pour impliquer les prestataires de soins primaires dans l'environnement naturel. Ces résultats devraient servir de base à la mise en oeuvre de politiques nationales au niveau local et au niveau de l'État pour la mise en place de services centrés sur la famille dans les programmes destinés à la petite enfance.

Résumé
Les services centrés sur la famille sont l'approche d'intervention précoce recommandée pour développer et fournir des services aux enfants handicapés et à leurs familles. Cette revue systématique vise à identifier et à mettre en évidence les obstacles que les prestataires de services d'intervention précoce centrés sur la famille perçoivent et qui les empêchent de fournir des services de haute qualité axés sur la famille et le bien-être général de l'enfant. Nous avons identifié 37 articles qui répondaient aux critères de sélection de la première recherche initiale de 1858 articles. Ces études ont permis de recueillir les points de vue des prestataires de services et des familles. Les obstacles identifiés ont été classés en huit catégories : famille, enfant, connaissance et application de l'approche/du modèle, croyances professionnelles, environnement naturel, coordination des services, conditions de travail et législation en vigueur. Les principales barrières identifiées sont les barrières familiales, l'insécurité perçue par les professionnels et les difficultés dans leur capacité à fournir des services, les changements dans leurs attitudes et comportements lorsqu'ils perçoivent qu'ils perdent leur rôle d'experts, le manque de connaissances et d'application de pratiques spécifiques, et le manque de compétences nécessaires pour impliquer les soignants primaires dans les environnements naturels. Ces résultats devraient éclairer la mise en oeuvre des politiques au niveau local et au niveau de l'État dans les pays où les

services centrés sur la famille sont mis en place dans les programmes pour la petite enfance.

Spanish
Los servicios centrados en la familia son el enfoque de intervención temprana recomendado para desarrollar y prestar servicios a niños con discapacidad y a sus familias. Esta revisión sistemática pretende identificar y destacar qué barreras perciben los proveedores de servicios en la intervención temprana centrada en la familia que les impiden prestar servicios de alta calidad centrados en la familia y en el bienestar general del niño. Se identificaron 37 artículos que cumplían loscriterios de selección de la primera búsqueda inicial de 1858 artículos. Estos estudios proporcionaron información tantode los proveedores de servicios como de las familias. Las barreras identificadas se clasificaron en ocho dimensiones:familia, niño, conocimiento y aplicación del enfoque/modelo, creencias profesionales, entorno natural, coordinación deservicios, condiciones de trabajo y legislación vigente. Las principales barreras identificadas fueron las familiares, lasinseguridades percibidas por los profesionales y las dificultades en su capacidad para prestar servicios, los cambios en susactitudes y comportamientos al percibir que están perdiendo su papel de expertos, la falta de conocimientos y de aplicación de prácticas específicas, y la falta de habilidades necesarias para implicar a los cuidadores principales en entornos naturales. Estas conclusiones deberían servir de base para la aplicación de políticas a nivel local y estatal en los países en los que se ha establecido un servicio centrado en la familia en los programas para la primera infancia.

Introduction

Family-centered services (FCS) are the recommended early intervention approach to develop and deliver services for children with disabilities and their families (Division for Early Childhood, 2014; World Health Organization, 2012). FCS involved in early childhood may be present in the areas of health, education, or social services. Dunst et al. (2021) emphasized that FCS are characterized by three fundamental aspects: (a) respect for the children and families, (b) recognition of the family's impact on the child's well-being, and (c) promotion of a collaborative relationship between the family and the professionals. Family and caregiver–child interactions are crucial to child development (Guralnick, 2016). These services have also been associated with a higher rate of family and child participation in community routines and activities (Dunst et al., 2019) and are a strong predictor of family quality of life (García-Grau et al., 2019).

Implementing the FCS approach involves rethinking how procedures required in early childhood intervention (ECI) are carried out. Although FCS have a strong theoretical backing and proven empirical evidence (Guralnick, 2016), they are a challenge for any service seeking to establish them as standard practice (McCarthy & Guerin, 2021). Implementing changes to establish an FCS approach requires a process of implementation fidelity (Fixsen et al., 2013). To advance toward

family-centered paradigms, professionals must revise some of their established beliefs about early intervention and ensure its application in natural environments (Kemp, 2020).

Barriers to Effective Implementation of FCS

The barriers identified to effective implementation of FCS are listed below. Among them are barriers associated with the process of adapting service providers to a new role in ECI (Gràcia et al., 2019; Pereira & Oliveira, 2017). Thus, professionals go from working directly with the child to collaborating with and offering support to the caregivers to contribute to positive parenting and interactions (Fleming et al., 2011), creating learning opportunities with the caregivers as mediators, and increasing the sense of parental self-efficacy and family well-being (Dunst et al., 2021). The difficulties of adapting to this new role may be related to the conceptual debate about with whom one should work directly or what needs and priorities should be addressed through the program (child vs. family/caregivers) (Sawyer & Campbell, 2017). Likewise, there is a lack of training and specific skills to apply participatory practices to promote the families' empowerment and establish collaboration with them (Dunst & Espe-Sherwindt, 2016; Dunst et al., 2019; Gmmash et al., 2020). In addition to this, there are political and financial barriers (García-Grau et al., 2019) to coordination and teamwork, barriers associated with the services' response to families with different characteristics, the specific intervention needs derived from the children's different health statuses, or the variables of the natural environments where the children are growing up (Bamm & Rosenbaum, 2008; Gmmash et al., 2020).

Although over the years, service providers and studies have highlighted a series of barriers that affect the daily functioning of FCS (Bamm & Rosenbaum, 2008; Gmmash et al., 2020), there has been no systematic review out that jointly presents and relates the barriers perceived by professionals in FCS that hinder their daily functioning and the full implementation of FCS.

Theory of Change

The *IDEAS Impact Framework Theory of Change (TOC),* proposed by the Center on the Developing Child of the Harvard University in 2017 (Schindler et al., 2017), is a tool that drives program improvement through the explicit definition of (a) strategies (actions to achieve desired changes), (b) objectives (reflecting the skills, beliefs, behaviors, attitudes, and knowledge that need to be modified through program strategies), (c) outcomes (the program's expected outcomes or impact on families and children), and (d) moderators (factors that explain why some individuals may benefit from a program while others may not). The IDEAS Impact Framework Theory of Change goes beyond focusing on the final program outcomes (for the child or family). It requires knowledge of what does or does not work in the real world of early intervention to identify factors that can moderate or decrease the positive effects of an intervention on different service recipients. Identifying these factors allows for

intentionally addressing the changes needed in the program to maximize the number of children and families that could benefit from the strategies, objectives, and outcomes established in a program (Ren & McGuckin, 2022). In this way, using this framework could provide a timely response to the difficulties encountered when implementing FCS.

Research in recent decades has shown that the programs have focused mainly on considering and evaluating their strategies and expected results while ignoring the objectives to be addressed and the possible moderators that may affect the implementation of agreed strategies or the achievement of the desired objectives and outcomes (Schindler et al., 2019; Taplin & Clark, 2012). Therefore, the IDEAS Impact Framework Theory of Change seeks to promote not only the evaluation of a program's effectiveness in establishing strategies and achieving results, but also considering how, why, for whom, and under what conditions a given program works or does not work to truly serve all the families and children who receive its services now and in the future (Gooding et al., 2018).

The answers to these questions have guided the type of research to identify the moderators that function as barriers, which prevent children and families from achieving the expected results of a specific program, and endanger implementation of practices to fidelity, a key aspect to improve the quality of the services (Bruder & Dunst, 2015; Dyke et al., 2006). Understanding these barriers could lead to program reviews by service providers in order to establish actions that guarantee the use of empirically supported procedures and protocols that fulfill the priorities and specific needs of families and children (Kemp, 2020).

Aim

The objective of this systematic review is to identify and highlight the barriers perceived by professionals, which aspects influence their practice and limit the implementation of services to FCS (Bamm & Rosenbaum, 2008). This systematic review attempts to answer the following research question: What barriers do professionals in family-centered early intervention perceive as preventing from delivering high-quality services focused on the family and the child's overall well-being?

Methodology

This work was carried out according to the criteria of the "Preferred Reporting Items for Systematic Reviews and Meta-Analysis for Scope Reviews" (Page et al., 2021) (Table S1). We registered the systematic review in PROSPERO (ID: CRDXXXXXXX).

Data Sources

The search was conducted in three major scientific databases, Web of Science, Scopus, and Proquest, from January 2000 to September 2022. Search terms were

adapted to the PICO method (Table 1). The following keywords were included in different combinations: (service and "early intervention") OR (quality service and perception and "early intervention") AND (providers perception) OR (providers barrier) OR (providers facilitator) OR (professionals perception) OR (professional Barrier) OR (professional facilitator) OR ("care team" perception) OR ("care team" Barrier) OR ("care team" facilitator) OR (providers) OR (professional).

We also searched the reference lists of the main works for additional articles. Finally, the authors were contacted if any data were missing. An additional search was conducted as of January 2023 so that no eligible works were left out.

Eligibility Criteria

The articles included in the review met the following criteria (a) they had to collect perceptions of professionals working in ECI; (b) they should provide quantitative and/or qualitative information about the barriers faced by professionals in the provision of the service, without restrictions in the studies selected by the type of design; (c) only studies that followed the recommended practice guidance in ECI services and, in particular, FCS at any stage of their implementation were considered; (d) the services should target children under 6 years of age, as this is the usual age at the international level at which ECI services cease to operate; and (e) they had to meet quality standards. We excluded articles not published in English, articles before 2000, and not published in peer-reviewed journals, but we checked their references for studies that met the eligibility criteria. If we could not access a study, we contacted the authors directly.

Evaluation of the Quality of the Studies

Two authors independently assessed the quality of the included articles using the Mixed Methods Assessment Tool, Version 2018 (MMAT, McGill University, Montreal, QC, Canada) (Hong et al., 2018). MMAT assessed the methodological quality of qualitative studies, randomized controlled trials, non-randomized studies, quantitative descriptive studies, and mixed-method studies. The MMAT contains a checklist of five sets of questions, each corresponding to a specific study design category. Each question must be answered as either "yes," "no," or "cannot tell." Two researchers independently assessed the included studies using

Table 1 PICO worksheet

Population	Professionals who perform ECI
Intervention	To know the barriers, or the lack of facilitators, that professionals perceive to carry out FCS in their daily work with the families and their children
Comparison	To compare the etiology of the barriers perceived by ECI professionals
Outcome	To identify the negative variables that hinder the optimal functioning of the FCS and establish corrective measures

the MMAT tool and subsequently convened to compare the scores. Any discrepancies were discussed, and consensus was reached. The findings were translated into an overall score for methodological quality, ranging from 0 (no quality) to 5 (high quality). All studies were included, and none were excluded based on quality assessment.

Data Extraction

Database searches yielded a total of 1858 publications (Fig. 1). The search strategy yielded 679 records after removing duplicates (Kwon et al., 2015), of which 61 full text were assessed for eligibility. Thirty-seven studies were selected after two authors' review of the full-text articles. In addition, one author independently extracted information relevant to the study from the included studies (Table S1).

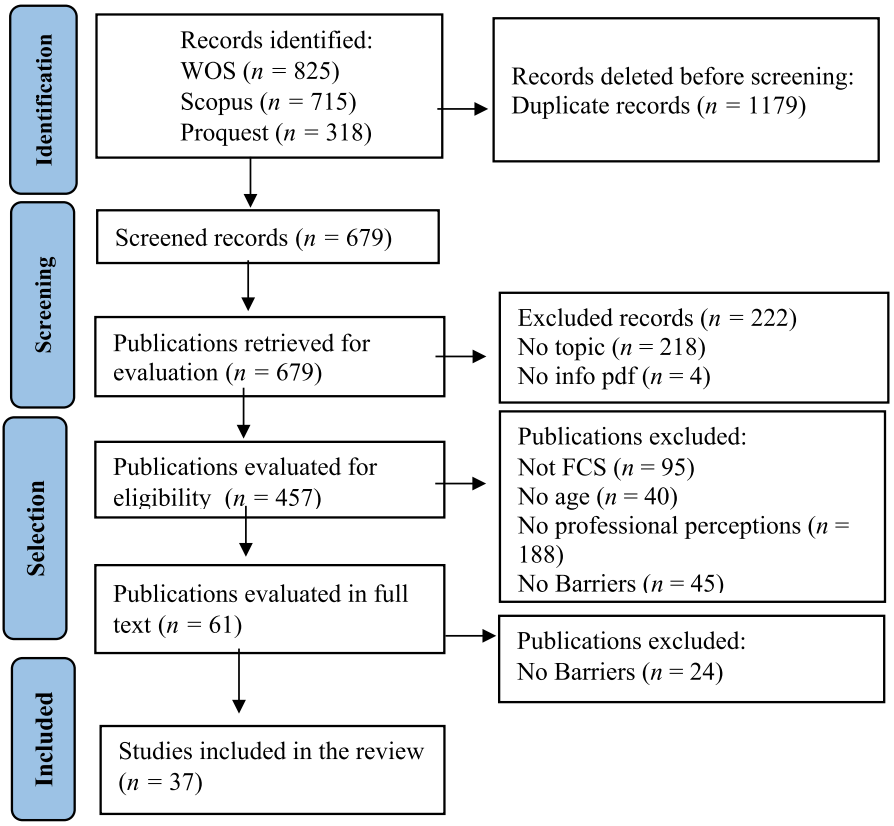

Fig. 1 PRISMA-P flowchart of the literature review carried out

Risk of Bias

The initial agreement of the two researchers reached 95%, with three articles having to be analyzed by the third reviewer in full text. Following Mallett et al. (2012), we tried to eliminate the possible bias by two principal investigators' reviewing at all times and reaching a 100% agreement with the third reviewer. We aimed to minimize the bias of searches conducted in major databases by examining the reference lists of the selected articles to locate studies that met the eligibility criteria and had not appeared in the searches conducted. Therefore, although we may have missed relevant studies, all steps were taken to minimize this risk. We analyzed the quality of all the studies, finding that 21 showed high quality (MMAT score = 5), 10 moderately high quality (MMAT score = 4), and six medium quality (MMAT score = 3; see supplementary data Table S1 and Table S2).

Data Extraction and Analysis

After reading the 37 identified articles in full text, we extracted the pertinent information to answer the research questions that guide the present study. The current systematic review used thematic synthesis as the methodology (Thomas & Harden, 2008) to create a global understanding of the barriers present in ECI with FCS. First, the extracted text was inductively coded according to its content and meaning. Subsequently, a theoretical structure of the barriers perceived by professionals in the ECIs was developed. This inferential process was carried out through collaboration among the researchers. After this stage, we examined similarities and differences between the codes and began to organize the hierarchy of the code group. When necessary, new codes were applied to these groups to describe their general meaning. Table 2 shows the structure of the dimensions and the descriptive themes aligned with the findings of the included studies.

Results

This section presents a summary of the barriers identified in the studies analyzed. These barriers are detailed and classified, providing a comprehensive view of the common challenges faced by practitioners in the field. This classification seeks to facilitate understanding and addressing these barriers in order to promote better practices and more effective approaches to implementing FCS (Table 3).

Before addressing the dimensions underlying the barrier research, the descriptive data from the sample of selected studies are shown. The studies provide information from service providers ($k = 37$, $n = 5008$). As shown in Table S1, the studies include the characteristics of the studies included in this review.

Table 2 Dimensions and the descriptive themes aligned with the findings of the included studies

Dimensions	Key	Descriptors	k	%
Associated with the family (F)	F_1	Families prefer to work directly with the children	5	13.5
	F_2	Family's lack of understanding and involvement in the intervention	14	37.8
	F_3	Confusion between health and community approaches	4	10.8
	F_4	Caregiver characteristics	11	29.7
	F_5	Difficulty fulfilling family needs and expectations	14	37.8
	F_6	Lack of information provided to the family	6	16.2
	F_7	Difficulty in setting the visit agenda	2	5.4
Associated with the child (C)	C_1	Child's globality	1	2.7
	C_2	Responding to the complexity of the child's medical and basic needs	4	10.8
	C_3	The child's level of functioning determines family involvement	4	10.8
Associated with the knowledge and application of the approach/model (K)	K_1	Lack of understanding and complexity of the application of the model	10	27.0
	K_2	Lack of specific training in the approach	9	24.3
	K_3	Lack of skills to engage primary caregivers in natural settings	17	45.9
	K_4	Lack of time to talk to families	6	16.2
	K_5	Difficulty identifying family supports	3	8.1
	K_6	Difficulty in shifting decision-making power to families	7	18.9
	K_7	Difficulty offering social and emotional support	3	8.1
	K_8	Professional's individual characteristics	3	8.1
Associated with professional's beliefs (B)	B_1	Insecurity and difficulty in the role of the provider teaching the families	11	29.7
	B_2	Believing it is difficult to support the children's participation in family routines when the family is present	10	27.0
	B_3	Unwillingness to work in natural environments, preferring the clinical environment	6	16.2
	B_4	Professionals' attitudes and behaviors when losing their role as experts	12	32.4
	B_5	Need to develop practical skills directly with the child	4	10.8

Table 2 (continued)

Dimensions	Key	Descriptors	k	%
Associated with the natural environment (E)	E_1	Difficulty applying the intervention in the natural environment	7	18.9
	E_2	Difficulty identifying children's learning environments	2	5.4
	E_3	Difficulty conducting authentic assessments	3	8.1
Associated with the coordination (T)	T_1	Difficulty coordinating with other professionals (lack of time…)	9	24.3
	T_2	Lack of knowledge and/or trust between services about the work they do	5	13.5
	T_3	Difficulties with the procedures of the center itself	8	21.6
	T_4	Medical terminology used in health	3	8.1
Associated with the working conditions (W)	W_1	Working hours (working outside working hours, part-time jobs…)	5	13.5
	W_2	Conditions of the environments in the home visits (chaotic, unsafe, number of people…)	3	8.1
	W_3	High workload (large number of families, little staff available…)	6	16.2
	W_4	Rotation of service professionals	2	5.4
	W_5	Journeys between homes (traffic, parking, travel time…)	2	5.4
Associated with the legislation (L)	L_1	Lack of government support for families	5	13.5
	L_2	Legislative limitations of children's eligibility for the service	2	5.4
	L_3	Lack of support and administrative constraints for the services	9	24.3
	L_4	Unequal access to resources	3	8.1

Table 3 List of studies and identified barriers

	Family (F)							Child (C)			Knowledge (K)								Beliefs (B)					Environment (E)			Coordination (T)				Work (W)					Legislation (L)			
	1	2	3	4	5	6	7	1	2	3	1	2	3	4	5	6	7	8	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	5	1	2	3	4
Blackburn (2016)	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟
Campbell & Sawyer (2009a)	●	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
Campbell & Sawyer (2009b)	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	●	♟	♟	♟	♟	♟	♟	●	●	♟	♟	●	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
Curtiss et al. (2019)	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟
Dias & Cadime (2019)	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
Dyke et al. (2006)	♟	●	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	●
Edwards (2018)	♟	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
Escorcia-Mora et al. (2018)	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
Fleming et al. (2011)	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	●	♟	●	♟	●	♟	♟	♟	●	●	●	●	♟	●	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
García-Grau et al. (2019)	♟	♟	♟	♟	●	♟	●	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
García-Ventura et al. (2020)	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟
Gmmash et al. (2020)	♟	●	●	●	♟	♟	♟	♟	♟	♟	♟	♟	●	●	♟	♟	♟	♟	●	●	♟	♟	♟	●	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	●
Gràcia et al. (2019)	♟	●	♟	♟	●	♟	♟	♟	♟	♟	●	●	●	♟	♟	♟	♟	♟	●	♟	♟	●	♟	●	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
Hurley et al. (2018)	♟	♟	♟	♟	♟	♟	●	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟
Ideishi et al. (2010)	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	●	♟	●	♟	♟	♟	●	♟	♟	♟	♟	♟	♟
Ingber & Dromi (2009)	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	●	●	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
Iversen et al. (2003)	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	●	♟	♟	♟	♟	♟	●	●	♟	♟	♟	●	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
LaForme et al. (2012)	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	●	●	♟	●	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	●	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
Litchfield & MacDougall (2002)	♟	●	♟	♟	●	●	♟	♟	♟	♟	●	♟	♟	♟	♟	●	♟	♟	●	♟	●	●	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
Mandell & Murray (2009)	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	●	♟	♟	♟	♟	●	●	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
Mattern (2014)	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	●	♟
McBride et al. (2017)	♟	●	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
McCarthy et al. (2020)	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
Meadan et al. (2018)	●	●	♟	●	●	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
Nijhuis et al. (2007)	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
O'neil et al. (2008)	♟	●	♟	♟	●	●	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	●	●	●	♟	♟	♟	●	♟	♟	♟	♟	●
O'neil et al. (2001)	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	●	♟	●	♟	♟	♟	♟	♟	●	♟
Pereira & Serrano (2014)	♟	●	♟	♟	●	♟	♟	♟	♟	♟	♟	●	●	♟	♟	●	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	♟	●	●	●	♟	●	♟	●	♟	♟	●	●	♟	♟
Pereira & Pinto (2017)	♟	●	♟	●	●	♟	♟	♟	♟	♟	●	●	♟	●	♟	●	♟	♟	●	●	●	●	●	♟	♟	♟	●	♟	♟	♟	●	♟	♟	●	♟	♟	♟	♟	♟	♟
Sawyer & Campbell (2012)	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	●	●	●	●	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟
Salisbury et al. (2010)	●	●	●	●	●	♟	♟	♟	♟	●	●	●	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	●	♟	♟	♟	●	♟	♟	♟	♟
Schenker et al. (2017)	♟	●	♟	●	♟	♟	♟	♟	♟	●	♟	♟	●	●	♟	♟	●	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	●	♟	●	♟
Shannon (2004)	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟
Stewart & Applequist (2019)	●	●	♟	●	♟	♟	♟	♟	●	●	♟	♟	●	♟	♟	●	♟	♟	●	●	♟	●	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟
Su et al. (2021)	●	●	●	●	●	●	♟	♟	♟	●	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	●	♟	♟	●	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟
Vilaseca et al. (2018)	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	●	♟	♟	●	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟
Ziviani et al. (2013)	♟	♟	♟	●	♟	●	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	♟	●	♟	●	♟	●	♟	♟	♟	♟	●	♟
Total themes	5	14	4	11	14		6	2	4	4	10	9	17	6	3	7	3	3	11	10	6	12	4	7	2	3	9	5	8	3	5	3	6	2	2	5	2	9	3
Total dimensions	56							9			58								43					12			25				18					19			

Perceived Barriers Influencing the Perception of Service Quality

Family (F)

Professionals' perceptions of what they believe families think. The barriers associated with the family are the most frequently highlighted by the researchers ($k=26$). Service providers often perceive families lack understanding of their role in the intervention (e.g., Dyke et al., 2006; Gmmash et al., 2020) and the difficulty of fulfilling the families' needs and expectations (e.g., Fleming et al., 2011; García-Grau et al., 2019), two barriers indicated by a greater number of studies ($k=14$).

Another key factor highlighted in the studies ($k=11$) is the presence of specific caregiver characteristics that act as barriers (i.e., language, educational, economic, or cultural level, problems associated with mental health or unfavorable work situations, e.g., Curtiss et al., 2019; McBride et al., 2017).

Other factors noted, but reported in smaller quantities, are the families' preference for the professionals to work directly with the children ($k=5$) (e.g., Stewart & Applequist, 2019; Su et al., 2021), confusion between health and community approaches ($k=4$) (e.g., Gmmash et al., 2020; Ideishi et al., 2010), lack of information offered to the family ($k=6$) (e.g., Dyke et al., 2006; Edwards, 2018), or difficulty in establishing the visit agenda ($k=2$) (e.g., García-Grau et al., 2019; Hurley et al., 2018).

Child (C)

Professionals' perceptions of the child's characteristics. Very little information has been published on barriers linked to the child ($k=8$). The main challenges are having to provide a response from the services based on the complexity of the child's medical and basic needs ($k=4$; e.g., Gmmash et al., 2020) and the influence of the child's level of functioning on the family participation ($k=4$; e.g., Stewart & Applequist, 2019).

Knowledge and Application of the Approach (K)

Practitioners' perceptions of knowledge and application of the FCS approach. The studies of this third dimension ($k=18$) indicate that professionals' poor skills in encouraging the primary caregivers' participation in natural environments ($k=17$) are one of the main barriers (e.g., Stewart & Applequist, 2019), followed by lack of understanding and the complexity of the model's application ($k=10$; e.g., Blackburn, 2016), and the limited specific training in the team approach ($k=9$; e.g., Iversen et al., 2003). Other barriers indicated are a lack of time to talk to the families ($k=6$; e.g., Gmmash et al., 2020), the difficulty identifying family supports ($k=3$), transferring decision-making power to the families ($k=7$), and offering social and emotional support ($k=3$). Finally, authors such as Mandell and Murray (2009), McCarthy et al. (2020), and Ziviani et al. (2013) also

highlight as barriers some professionals' individual characteristics, such as the orientation of the university studies, which can act in favor or against the practices, or the years of experience as a provider.

Professionals' Beliefs (B)

Practitioners' beliefs about their components of the FCS approach. Establish collaborative relationships with families to build family capacity in the natural environment to promote interactions between caregivers and children. The influence of the service providers' beliefs appears in 19 studies, with the professionals' insecurity when teaching families ($k = 11$; e.g., Dias & Cadime, 2019) and their belief in the loss of their professional role ($k = 12$; Gràcia et al., 2019), two of the most noted aspects. In addition to the complexity of teaching adults, there is an underlying belief that it is difficult to support children's participation in family routines while the family is present ($k = 10$; e.g., Stewart & Applequist, 2019). Finally, some professionals believe that their work should be carried out in the clinical setting and not in the natural setting ($k = 6$; e.g., Su et al., 2021) or that it should be done directly with the child ($k = 4$; e.g., Pereira & Pinto, 2017).

Natural Environment (E)

Professionals' perception of intervention in natural environments. Few studies indicate the influence of the natural environment on the perception of quality as a barrier ($k = 10$). Within this dimension, the main barrier is the difficulty implementing the intervention in a natural environment ($k = 7$; e.g., Campbell & Sawyer, 2009) and, also, although with fewer reported references, the difficulty identifying children's learning environments ($k = 2$; e.g., LaForme et al.,2021) and performing authentic evaluations ($k = 3$; e.g., Mattern, 2014).

Coordination of Services (T)

Professionals' perceptions of coordination within the team and with other services. The barriers associated with coordination ($k = 16$) highlight that the most significant difficulties arise from coordinating with professionals in other fields related to child development ($k = 9$), for example, due to a lack of time (e.g., Mattern, 2014) and difficulties linked to the procedures and processes of the workplace itself ($k = 8$; e.g., Schenker et al., 2017). Two other barriers identified are the lack of knowledge and/or confidence about the work carried out by the different services linked to early intervention ($k = 5$) and the specific terminology of the profession ($k = 3$). Specifically, the studies that indicate this aspect are linked to the health area, due to the difficulty in coordination or the technical language used by physicians in their reports (e.g., O'Neil et al., 2008).

Working Conditions (W)

Professionals' perception of their working conditions. Among the barriers linked to work issues ($k=10$), six studies highlight the professionals' high workload because they attend to a large number of families (Ziviani et al., 2013), an aspect associated with the limited staff available in some centers. Working hours are also noted ($k=5$), indicating that factors such as working outside of the working hours or professionals having part-time jobs may be barriers (Curtiss et al., 2019). Other factors with less impact are indicated, such as the conditions of the settings in the home visits ($k=3$; e.g., in some cases, described as chaotic, insecure, or with an excessive number of people, Hurley et al., 2018), the rotation of service professionals ($k=2$; Ziviani et al., 2013), or traveling between homes ($k=2$; e.g., traffic, parking, and time needed for traveling; Salisbury et al., 2010).

Legislation (L)

Practitioners' perceptions of administrative and legislative issues. Barriers linked to country-specific legislative aspects are identified in 12 studies. The main barrier is the lack of support and administrative constraints in accessing the services ($k=9$), followed by a lack of government support to families ($k=5$; e.g., Blackburn, 2016) and unequal access to resources ($k=3$; e.g., Gmmash et al., 2020).

Discussion

This systematic review summarizes the findings of qualitative and quantitative research on the barriers perceived by early intervention professionals in FCS that prevent them from providing high-quality services. This study is innovative in that it synthesizes and relates the findings of different studies on the barriers that come from the implementation of quality practices in early intervention and FCS, a synthesis that had not been performed until now.

Thirty-nine barriers were identified, grouped into eight dimensions, which aligns with results identified by Turnbull et al. (2010) over a decade ago. The main barriers identified were family barriers (the family's lack of understanding and involvement in the intervention, caregiver characteristics, and the difficulty in fulfilling family needs and expectations). Other frequently reported barriers are associated with professionals' perceived insecurities and difficulties in their ability to provide FCS, changes in their attitudes and behaviors when perceiving that they are losing their role as experts, the lack of knowledge and application of specific practices, and the lack of the skills needed to engage primary caregivers in natural settings. All these barriers and dimensions have also been identified in other studies as the most common (Bamm & Rosenbaum, 2008; Gmmash et al., 2020).

This review provides another dimension derived from the professionals' working conditions in providing the service. This aspect is relevant due to the staff's

high mobility in ECI (Pereira & Pinto, 2017; Ziviani et al., 2013) and may be related to working hours, high workload, the traveling needed to reach the settings, and the conditions of the visited environments.

The analysis of the relationships among the barriers reported by the professionals showed that 21 barriers are related to the family's lack of understanding and involvement in the intervention. The family's involvement as an active participant in ECI is essential to achieve results (Dunst & Espe-Sherwindt, 2016). In FCS, the interactions between the caregivers and the child are crucial for the child's best development. The professionals' preparation to support the families' involvement in early intervention programs is essential in achieving the results of the Individualized Family Support Plans (PIAF).

Mas et al. (2020) found that the professionals' participatory practices had a more significant effect on promoting family participation in early care programs than relational practices (the relationship established with the family). The professionals' difficulties in fulfilling the families' needs and expectations, their lack of skills to engage caregivers in natural environments, their attitudes and behaviors when losing their role as experts, their insecurities and difficulties in teaching families important components of the strategies, and their lack of training in FCS models are all obstacles that could affect practitioners' ability to use participatory practices. Therefore, greater barriers at the level of the professionals' promotion of participatory practices could explain their relationship with the family's decreased understanding and involvement in the intervention.

In addition, 18 of the barriers identified in this review relate to the professionals' perceptions of their ability to provide services following the recommendations of best practices in early intervention (Division for Early Childhood, 2014). Thus, the professionals' perception of competence and confidence is a relevant aspect. Practitioners may perceive that the daily practice performed is not the ideal practice aligned with recommended practices. García-Grau et al. (2019) found a discrepancy between what practitioners consider a quality practice (ideal) and what they reported as their habitual (real) practice. The professionals tended to rate the ideal practice higher than the habitual one, showing that they consider evidence-based recommendations the gold standard. One of the main reported reasons for the discrepancy between what they consider ideal and their habitual practice was related to a lack of training. These results show the need for professionals to establish evidence-based procedures and protocols in their services, identifying training as one of the possible solutions.

Professionals who continue their training throughout their professional lives can significantly improve their confidence and competence to perform early intervention-related functions. Bruder et al. (2013) found that a greater perception of post-school readiness and workplace training that includes the opportunity to receive feedback and guidance from a coach, supervisor, or peer is associated with higher scores in confidence and competence to perform the functions associated with their work as early intervention professionals. Therefore, the barriers related with the families and the child could be addressed by providing early intervention professionals with the necessary training support to know and use the specific procedures and materials that increase their perception of competence

and confidence about what to do and how to work with families and children in FCS.

Considering the professionals' perception of their practice and the need for continuing education and training, the need to mobilize economic, human, and temporal resources (i.e., hours within the professionals' working hours) for training in aspects related to the identified barriers emerges. Such training must contain the six characteristics of adult learning proposed by Trivette et al. (2009): *Introduce* (present) new knowledge, materials, or practices; *illustrate* with specific examples the knowledge, materials, or practices that have been introduced; provide opportunities for the professionals to *practice* what was introduced and illustrated; create spaces for the *assessment* of the professional's performance during the training; *reflect* on the actions carried out; and, once the practice is *mastered*, promote constant self-assessment to identify new areas that may require training. Likewise, the training context should be considered: *who is responsible* for transmitting the knowledge, *where* the training takes place (in the natural environment where skills are needed or in an artificial environment far from reality), and *how* knowledge is shared (individually, in groups, face-to-face or online; Meadan et al., 2017).

Despite these recommendations, we should not ignore the impact that the macrosystem (government support) has on a center's resources and how feasible it may be to implement the above-mentioned recommendations because some barriers not related to training could also hinder FCS work. Such is the case of working hours, workload, or the constant rotation of professionals, which makes it difficult to form teams trained and experienced in the recommended practices. Kemp (2020) reports that the barriers also described in our results can be fueled by the lack of funding, the reduced time available, and/or the limited knowledge and experience of professionals. This situation suggests a possible relationship among the barriers of different dimensions, which may not have been considered in the literature.

Our results also highlight the need to analyze the described dimensions, to know the situation of FCS to establish programs with concrete actions for improvement. The most complicated variable to solve, unrelated to FCS itself, implies the barriers associated with legislation because each country contemplates different laws and regulations, making it difficult to determine concrete actions that guarantee the best performance of FCS.

Finally, it should be noted that any action to be implemented must be developed with the participation of all the agents involved in early intervention, ensuring that the actions, support, and resources proposed are maintained over time and are not isolated measures. By ensuring the most effective interventions with an optimal implementation, the best results will be obtained (Fixsen et al., 2013).

Limitations for Research

The present scope review has some limitations that should be mentioned. First, the heterogeneity of the included studies precluded meta-analysis (16 qualitative studies and seven mixed-methods studies). Second, future quantitative studies could standardize the measures of analysis of the perceived service quality and the underlying

barriers to allow comparisons between them. This will also favor the global understanding of the construct and the real magnitude of this phenomenon. Third, future population studies should include similar proportions of men and women, as well as indicate the typology of the providers, offer aggregated and disaggregated data for each subsample, discuss their results with similar subsamples from other studies, and take steps to avoid limitations of interpretation and generalization.

Recommendations for Research

In view of the results obtained in this scope review, some recommendations can be made for future research. For example, a possible starting point at the empirical level would be to study quantitatively the relationship between the barriers identified in this study. Secondly, at a practical level, through action research and following the IDEAS Impact Framework of TOC (Schindler et al., 2017), it would be interesting to work with an ECI program that promotes a process of reflection. The starting point could be the barriers identified in this study and others that the center's professionals could identify as threats to the faithful implementation of FCS practices and to working in natural environments. From this reflection, a specific list of changes to be established in the program could be created to produce a series of results for the families and children that receive ECI. This process would involve selecting strategies for the program and identifying the objectives to be achieved to promote the desired outcomes in the families and children. This reflection would include moderators (family characteristics, the professionals, the culture, the community, and even some of the barriers detected), which should be considered to determine whether the strategies we propose within the program (training, procedures, and materials, protocols we are going to establish) serve all the families in the program or whether adjustments need to be made for some families.

Conclusion

This review provides evidence about the barriers that FCS professionals perceive in early intervention. First, this study confirms that multiple barriers influence FCS implementation processes. The results also suggest that each of the proposed dimensions should be analyzed to ensure the good functioning of FCS. Second, the available data suggest a relationship between barriers. Finally, future studies need to be conducted to allow comparability, for example, using standard definitions and assessment tools, and similar time frames (Schindler et al., 2019).

Policies in implementing ECI programs at the local and state levels should consider the findings of this study to maximize success. Thus, children's access to services would be guaranteed, the investment of resources would be optimized, training for service providers would be promoted, and quality protocols would be established to detect possible barriers in establishing and developing FCS.

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Declarations

Conflict of interest The authors have declared that no competing interests exist.

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