

Published: May 31, 2024

**Citation:** Rosa, FV., et al., 2024. Familiar Perception: Opportunities for Typical and Ideal Experiences in Early Intervention. Medical Research Archives, [online] 12(5).

<https://doi.org/10.18103/mra.v12i5.5341>

**Copyright:** © 2024 European Society of Medicine. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

**DOI:**

<https://doi.org/10.18103/mra.v12i5.5341>

ISSN: 2375-1924

RESEARCH ARTICLE

## Familiar Perception: Opportunities for Typical and Ideal Experiences in Early Intervention

Fernandez-Valero Rosa<sup>1,2\*</sup>, Avivar-Caceres Susana<sup>3</sup>, Perez-Palao Lucia<sup>1,4</sup>

<sup>1</sup>Valencian Association of Cerebral Palsy (AVAPACE)

<sup>2</sup>Spanish Association for Childhood Intervention (AEIPI).

<sup>3</sup>International University of Valencia (VIU).

<sup>4</sup>International University of La Rioja, Faculty of Education (UNIR).

\*[Rosa.fernandez@avapace.org](mailto:Rosa.fernandez@avapace.org)

### ABSTRACT

The present study delves into the crucial domain of early childhood intervention services, with a specific focus on the familiar perspective and its impact on intervention outcomes. Family-centered practices approach emphasizes the importance of a collaborative relationship between professionals and families, to empower family strengths and their utilization in promoting optimal child development. Thus, the study aims to validate the Families in Natural Environments Scale of Service Evaluation (Family FINESSE), which assess the fidelity of intervention practices (identified as typical practices) and identify areas for improvement (identified as ideal practices) based on 432 Spanish families' perceptions, with children aged 0 to 6 years old experiencing neurodevelopmental challenges or risks, engaged in early intervention services for a minimum of six months. We conducted Structural Equation Modeling (SEM) as the primary analytical technique for scale validation and found the Exploratory Factor Analysis and Confirmatory Factor Analysis showed optimal adjustment indices and good internal consistency in both ideal-practices ( $\alpha=.84$ ) and typical-practices ( $\alpha=.93$ ) scales. The findings validate the relevance and applicability of the Family Finesse Scale in evaluating and enhancing early childhood intervention services, particularly in aligning practices with family needs and aspirations.

**Keywords:** Early Intervention; Family-Centered Practices; Neurodevelopmental Support; Family Strengths; Family Finesse Scale; Collaborative Relationships.

## 1. Introduction

Societies are changing, and with them the way of understanding childhood development, and the challenges that it can present is transforming. More and more are known about neuroscience and neurodevelopment, and this knowledge is closely related to the challenges and opportunities found in early childhood intervention services, which have been adapting the focus of the interventions they implement with children. with challenges in neurodevelopment, social demands, and the advancement of scientific evidence.

Due to the epistemological approaches that emerged in the 70s and 80s, such as the ecological model of development<sup>1</sup> and the transactional model of development<sup>2</sup>, the participation of the community began to be promoted. family in services.

Numerous studies have been carried out since then to show the importance of the family and the environment in the neurodevelopment of children. In 1991, the Division for Early Childhood (DEC) was created with the purpose of minimizing the gap between research and professional practice, they reviewed the evidence about practices implemented in early childhood with challenges or risks in their neurodevelopment, and established a scientific base, which gave the opportunity to guide families and professionals towards what is known as recommended practices in early childhood intervention.

The recommended practices in early childhood intervention, with risk or neurodevelopmental challenges, from the DEC<sup>3</sup> are divided into three main themes: family-centered practices, family training

practices, and collaborative practices of family members and professionals. The family must be treated with dignity and respect, they must be offered all the necessary information to be able to make informed decisions, being sensitive to their specific characteristics and context. And the family is the main provider of learning and development opportunities for children, either directly or indirectly, inside and outside the home<sup>4</sup>.

### 1.1 FAMILY CENTERED PRACTICES

Probably one of the most important precursors of family-centered practices was Carl Rogers<sup>5</sup> who with the "client-centered" model strove to give greater significance and control of the intervention to the client than to the professional. The "Association for the Care of Children in Hospital", in the sixties of the last century, incorporated these ideas of care for children and their families, by promoting the concept of "family-centered care". Subsequently, many studies and Evidence has been building what is known today as family-centered practices in neurodevelopment and early childhood intervention services.

Dunst and Trivette<sup>6</sup> identify among some of the components on which they focus for the construction of the philosophy of family-centered practices, the ecological approach to human development and social systems<sup>7</sup>, the theory of "empowerment" by Rappaport<sup>8</sup>, the results on family strengths by Stinnett, Chesser and DeFrain<sup>9</sup>, social support by Gottlieb<sup>10</sup> and finally, the work of Cronenwett and Brickmant<sup>11</sup> on the helping practices.

Considering the family in early childhood intervention services has been one of the main pillars in the field of neurodevelopment. How

to support the entire family, not only the needs presented by the child, acquires a special meaning in the implementation of interventions<sup>12</sup>. From the knowledge of the importance of family strengths, how to enhance them and take advantage of them for the development of the child and their learning<sup>13,14</sup>. The challenge to meet the needs, not only of the child, but also of the family, has been a permanent and manifest challenge in this discipline<sup>15,16</sup>.

In this sense, one of the latest definitions that we found of intervention in early childhood proposed by Dunt and Espe-Sherwindt<sup>17</sup>, specifies who is the support provider, what this support consists of and who is the recipient of this support, to promote the child's neurodevelopment:

*"The different types of parenting support provided by early childhood professionals and other members of social networks that provide parents with the time, energy, knowledge, and skills necessary to engage their children in "Everyday child learning opportunities that promote and improve the confidence and competence of both the child and the parent." (p. 831).*

In a meta-analysis of 47 previous studies, carried out in seven different countries, on the implementation of effective practices in early childhood intervention services, they relate family-centered practices to a significantly higher level of patient satisfaction. families with respect to other types of practices, since they enhanced strong family beliefs about their sense of self-efficacy and control, and about the great feeling of usefulness of the supports and services received<sup>18</sup>. In addition, other studies also show the satisfaction of

families with this type of practices, due to the perception they have regarding the improvement in their children's behavior, the perception of family well-being and, finally, regarding the sense of competence. and confidence with the educational style that the families themselves followed<sup>18,19</sup>.

On the other hand, in a study carried out by Dunst, Bruder and Espe-Sherwindt<sup>20</sup>, based on a meta-analysis on the support provided by early childhood intervention services under the approach of family-centered practices, with families who received these services in natural environments and families who received them in early childhood care centers identified that the provision of early childhood intervention services partially or totally outside the natural environment (home, school, community), is associated with less family involvement in said intervention<sup>20</sup>. In the results of this study, only 22% of the families that were receiving these services at the center felt involved in the intervention, compared to 54% of families that felt totally involved in the intervention. intervention and 52% who felt partially involved in the interventions that were implemented at home, and therefore considered the natural environments of the child and their family as an ideal place for its implementation.

## 1.2 FAMILY AND PROFESSIONAL COLLABORATION PRACTICES

The collaborative relationship between the family and the professional is one of the main principles of recommended practices in early childhood intervention<sup>21</sup>. For this, it is important that the professional who provides the intervention to the family develops the ability to respect and not judge the family's reactions in relation to their values, beliefs and

lifestyles<sup>16,22</sup>. Likewise, it is important not to confuse the collaborative relationship with the friendship relationship; despite being kind and cordial support, it is necessary to establish professional limits, which are not marked in a friendship relationship<sup>23</sup>. Espe-Sherwindt<sup>16</sup>, in relation to this, says: "... It is not enough to be nice" (p.139), since being welcoming to the family or having great communication skills does not imply that intervention in early childhood is centered on the family<sup>16,24</sup>.

The evidence indicates that the relationship of help and collaboration with the family in family-centered early childhood intervention can be differentiated into, 1) relational practices, and 2) participatory practices<sup>25</sup>. Relational practices are those identified as good clinical practices, which have been clarified and described in other studies, characterizing them by professional attitudes of active listening, empathy, closeness, and honesty, developed in the professional's relationship with the family<sup>25</sup>, in addition to being seriously determined by the positive vision towards the family<sup>16</sup>. On the other hand, participatory practices are more related to helping families find solutions and acquire knowledge and skills that improve their family situations, which include their choice, decision-making and participation during life. intervention, and thus, achieve the results they desire in terms of their child's development and family functioning<sup>8,25</sup>.

In family-centered practices, the relationship between professionals and families is governed by trust, appreciation, and respect for families' characteristics, skills, talents, resources, and aspirations<sup>26</sup>.

When we talk about the collaborative relationship between the professional and the family, it is important to emphasize consensus<sup>16, 27</sup>, which may sometimes not occur, because the family is waiting for the professional's prescription, a fact that the professional can often judge, interpreting family resistance, lack of cooperation and little involvement in your child's intervention. When this situation occurs, it invites us to reflect on what and how the information has been offered to the family, and even how the main relationship with the family has been established from the moment of the capture, since, since the last century, thanks to Different studies know that people who occupy different positions in a social structure (client vs. professional) tend to have different appreciations about what constitutes individual and family needs, and therefore, also about how time should be invested to know those needs. In other words, if the family has not received adequate information, and the professional has not clearly marked the collaborative relationship (which his or her role requires), it is very likely that the expectations of one person about the other are very distorted than expected. that is really intended to be carried out with family-centered practices.

Some attitudes that may appear in professionals can also hinder the optimal results of the intervention, as happens when the professional does not understand or value family-centered practices<sup>28</sup>, when there is an unwillingness to reconcile with families' views that differ from their own, when there are gaps in the skills to involve and work with families<sup>29</sup> and when there is a wrong view of the role that the family plays towards their child.

It is obvious that for early care professionals to correctly implement relational and participatory practices in their family-centered interventions, they need solid and well-defined training to work with different children and families. This training must provide the professional with knowledge in, 1) child development, in the different areas of development, 2) practices recommended by scientific evidence, 3) andragogy, to know how to adequately support the adult, and 4) naturalistic strategies<sup>3</sup>.

### 1.3 CAPABILITY PRACTICES FAMILY

In an expansion on the concept of family-centered early childhood intervention, Dunst and Trivette<sup>6</sup> propose a definition based on the review of their previous works, in which they incorporate elements, such as the concept of family training and empowerment:

*"Early attention and family support are defined as generating or mobilizing support and resources of families by members of informal and formal social networks, who directly or indirectly affect and improve the functioning of parents, family and child. The experiences, opportunities, advice, guidance, etc., provided to families by members of social networks are broadly conceptualized as different types of interventions that contribute to better performance. The result of the support and resources offered to family's includes any consequences that result in building their capabilities and empowerment."*(p. 126-127)

Dunst and Trivette<sup>6</sup> have tried to operationalize and integrate different models, which they have agreed to call the "capability – building" paradigm, which includes four components:

#### 1. Family priorities and concerns

Worries are defined as the perception or indication of a discrepancy between the current situation and what you want. Priorities are defined as a condition that is considered important and worthy of attention. Both concerns and priorities are considered determinants for understanding what people spend in terms of time and energy to obtain resources and supports that help them achieve a particular purpose.

#### 2. Supports and resources.

Support and resources are defined in terms of the types of care and information, assistance, experiences, and opportunities to address and respond to the family's concerns and priorities. Sources of support and resources include formal and informal social networks. Those considered the most appropriate supports and resources are those that actively involve family members in getting help rather than simply providing help.

#### 3. Capacities and interests of family members.

Family strengths are defined in terms of skills, interests, talents, etc., that are recognized and used by the rest of the family members.

#### 4. Internships help families develop capabilities.

As mentioned previously, research has identified two component practices that help families, these are called "relational" and "participatory." Helping families develop capacity includes relational practices, commonly associated with good professional practices and professionals' positive beliefs about family members' strengths and abilities. An example of a relational support practice is listening to a family's concerns and seeking

clarification and details. Participatory supportive practices relate to proactive professionals supporting parents and include individualization, flexibility, and sensitivity to family concerns and priorities. These are practices that help families make informed decisions as well as their commitment to achieving desired goals and outcomes.

The evolution of early childhood intervention services has had an impact on neurodevelopment professionals, by raising the importance of the family and the first contacts maintained with them, the challenge of satisfying their needs and the consideration both and their natural environments, when carrying out the evaluations and thus obtaining a more holistic vision of the child and their context<sup>30</sup>.

Considering early childhood neuroplasticity, it becomes evident that interventions for neurodevelopment that take place through the main caregivers, and the child's natural environments, enjoy more and better use of the child's development and learning opportunities<sup>31</sup>. If to this increase in learning and development opportunities for the child, the professional adds consideration of the family's strengths, as well as the presumption of competence through family training, families will feel empowered, thus achieving considerable improvement in the child's neurodevelopmental outcomes<sup>26</sup>.

Taking into account all these variables, from this work, we intend to present and validate the Family Finesse tool which, through the perception of families, allows us to know, on the one hand, to what extent The implementation in early childhood intervention services is carrying out

recommended practices [identified as typical practices in the scale] as well as outlining the future challenges that families propose to us in this type of intervention [identified as ideal practices in the scale]. When we talk about the implementation of family-centered practices, we cannot ignore the implementation stages [exploration, installation, initial and full implementation<sup>32</sup>] that early childhood intervention services will have to go through<sup>33</sup>, as well as the team of capable and committed professionals, to implement more effective systems in an integrated and effective manner, to achieve the results and fidelity they expect from their interventions<sup>34</sup>.

## 2 Methodology

This is a quantitative study that aims to validate the Family Finesse Scale (FFS) tool through a process of analyzing the reliability and validity of said scale based on an exploratory factor analysis (EFA) and a confirmatory factor analysis (CFA), using the structural equation modeling (SQS) techniques.

### 2.1 PARTICIPANTS

The participants were (n = 432) families, with one or more children between 0 and 6 years old, with a neurodevelopmental disorder or risk, who were receiving (at least six months before data collection) intervention services in early childhood, in the process of fidelity of implementation of recommended practices.

In relation to the descriptive data, we were able to determine that, considering the average age of the subjects that made up the sample, it was 41.56 months (SD = 15.37), with the minimum age being 18 months and the maximum being 82 months. Regarding

the gender of the subjects that made up the sample, the number of boys 281 (65.30%) was higher than that of girls 149 (34.70%).

Looking at the diagnosis of the children, as can be seen in Table 1, most of the children

had a diagnosis of autism spectrum disorder (22.90%), followed by motor disorders (22.30%), and other types of diagnosis (17%) and communication problems (13.10%).

**Table 1.** Children according to type of diagnosis

Diagnosis		Frequency	Percentage
Valid	Autism Spectrum Disorder	77	17.9
	Sensory disabilities	7	1.6
	Others	57	13.2
	Motor disorders	75	17.4
	Communication problems	44	10.2
	Prematurity	3.4	7.9
	Genetic syndrome or alteration	42	9.7
	Total	336	78.0
Lost	System	95	22
Total		431	100.0

In relation to the marital status of the main guardians, most of them are married (81.30%), while 16.60% are single, 1.80% separated and 0.30% widowed.

Considering the educational level of the families, 38.10% have studied compulsory education, non-compulsory basic education 28.60%, higher education 27.80%, and those who stated that they had no education only 5.4%.

And, regarding the family's employment situation, 84.30% say they are working, while 14.40% of the main caregivers are unemployed. An issue that is considered important in terms of reconciling family and work life, when you have a child with neurodevelopmental challenges.

## 2.2 TOOLS

Family Finesse Scale (FFS) is a tool created by Dr. McWilliam<sup>35</sup>, designed to help early

childhood intervention services in the identification of different types of practices in the implementation of their intervention aimed at children with disabilities. neurodevelopmental problems and their families, contemplating in their results the gradient in the implementation stages until the intervention of recommended practices, which consider the concerns, priorities, and strengths of the family in their natural environments, as the main influencing factor in the neurodevelopment of your child, as well as the degree of integrity, which these interventions are being implemented in this paradigm.

This scale is divided into 19 items, which contemplate the most relevant issues that must be considered throughout the process of implementing early care, exposing different actions by the service that the family receives,

presented on a Likert scale of 1 to 7, where 1 would be the description of a medical-rehabilitative implementation, focused on the needs of the child and under an expert professional implementation, without considering the family's strengths, their concerns, or the natural environments of the child and the family, and where 7 will be an implementation in natural environments and family-centered practices, where it will describe an action from a look at the family as a system, its concerns, priorities and strengths, with an implementation of collaboration between the professional and the family, at home, school and community, as spaces for the child's learning and development.

The items collect information, from the moment of reception, how the early childhood intervention service is explained to the family, which will be closely related to the expectations that the family has in relation to the service they receive<sup>36</sup>. On the other hand, it includes a question about the family's social support network, this being the maximum predictor variable of family empowerment<sup>37</sup>. It also considers the collection of family concerns and priorities<sup>6</sup>, as well as other issues related to intervention objectives, teamwork, and the implementation of interventions considering or not considering natural environments<sup>38</sup>, and the child's abilities, regarding the demands of the activity<sup>39</sup>.

This scale is completed by the family, completing two assessments for all items: on the one hand, the typical experience, that is, the family identifies their perception of the 19 items, in relation to the intervention they are receiving at that moment, while which, in the second assessment, evaluate the ideal experience, that is, the family's perception of

the intervention they would like to receive in the future to address their child's neurodevelopment.

## 2.3 STATISTICAL PROCEDURE

To carry out the statistical treatment of the data obtained, different statistical analysis techniques of the data have been used, to respond to the stated objective of the research. To carry out the statistical analyses, a computer program specialized in statistical analysis in the Social Sciences area has been used, the SPSS program (Statistical Package for the Social Sciences, Version 23) and the EQS program (Structural Equation Modeling Software, Version 6.2).

### 2.3.1. Reliability and validity analysis of the scale

An exploratory factor analysis was carried out first, followed by a confirmatory factor analysis, given that the objective of this research is to develop and validate the Family Finesse Scale (FFS). To achieve this objective, the structural equation modeling (SEM) technique was used. According to Hair, Black, Babin, Anderson and Tatham<sup>40</sup>, structural equation models are used in numerous areas of research because they provide a direct method when dealing with multiple simultaneous relationships, at the same time, they provide statistical efficiency and present the ability to evaluate relationships exhaustively, providing an evolution from exploratory to confirmatory analysis.

First, an exploratory factor analysis (EFA) of the scale was performed. Kaiser Meyer Olkin (KMO) sampling adequacy measures and Bartlett's test of sphericity were observed. On the other hand, items with factor loadings lower than .40, or higher than this value in two



or more factors, were eliminated before performing the next EFA. Furthermore, following the recommendations of Lloret-Segura, Ferreres-Traver, Hernández-Baeza and Tomás-Marco<sup>41</sup>, in this study only factors with at least three indicators were maintained. Finally, the theoretical interpretation of the solution extracted from the EFA was verified.

However, to know the validity and usefulness of the scale for a given study, confirmatory factor analysis (CFA) is stronger and more conclusive than exploratory factor analysis, which only provides initial evidence of the important factors of the scale<sup>42</sup>. Therefore, secondly, a CFA was carried out.

Thus, to evaluate the global fit, different goodness-of-fit indices recommended in the literature<sup>43</sup> were used, such as the significance of the Chi-square<sup>44</sup>. Also, other coefficients were calculated that allowed checking the adequacy of the proposed models, such as the  $\chi^2$  ratio and its degrees of freedom, with values less than five being acceptable<sup>45</sup>. Likewise, the coefficients of the robust goodness-of-fit indices of the proposed models corresponding to the Non-Normed Fit Index (NNFI<sup>46</sup>), the Comparative Fit Index (CFI<sup>44</sup>) and the Incremental Adjustment (IFI). For these indicators, values greater than .90 are considered a good fit. Finally, the Root Mean-Square Error of Approximation (RMSEA) is shown, with scores below .08 being necessary to consider a good fit<sup>47</sup>.

On the other hand, to evaluate the reliability of the scale, three measures were considered: Cronbach's Alpha, Composite Reliability (CF) and the Variance Extracted Measure (VEM) for each factor<sup>40</sup>. Furthermore, discriminant validity was evaluated using the method

suggested by Fornell and Lacker<sup>48</sup>. This method accepts discriminant validity if the square root of the VEM value of a given factor is greater than the correlation coefficients between the factor and any other factor of the proposed scale. Another criterion to ensure discriminant validity is that the correlations between the various pairs of factors are less than .85<sup>49</sup>.

### 3 Results

The validation of the Family Finesse Scale (FFS) is discussed below. In this sense, first, the validation process for the ideal version of the same will be described and then, the results obtained from the validation of the typical version of this scale.

#### 3.1 FAMILY FINESSE SCALE – IDEAL PRACTICES

Firstly, we proceeded to analyze the properties of the items that make up each of the dimensions proposed in the Exploratory Factor Analysis of the FFS Ideal scale. In this way, Table 2 shows the data of the items grouped according to the dimension to which they belong: the mean (M), standard deviation (SD), item-total correlation ( $r_{jx}$ ), Cronbach's alpha if This item ( $\alpha-x$ ) and the skewness and kurtosis values are eliminated.

As can be seen in Table 2, most of the indicators present high item-total correlation coefficients ( $>.30$ ). The FFS Ideal scale shows an excellent good reliability coefficient ( $\alpha=.84$ ). The reliability values of the dimensions separately show a Cronbach's alpha coefficient that ranges between .79 (dimension 1), .73 (dimension 2) and .62 (dimension 3).

Furthermore, to observe whether there was a normal distribution of the ideal FFS scale data,

the asymmetry and kurtosis values of each of the indicators were observed. According to Hair and colleagues<sup>40</sup>, values greater than  $\pm 2.58$  reject the principle of normality with a probability level of .01, and values above  $\pm 1.96$  reject said principle with a probability

level of .01. probability of .05. As can be seen in Table 2, the skewness values are acceptable in most cases, while the kurtosis values are not in most cases since they are greater than  $\pm 3.00$  in a large part of the items<sup>44</sup>.

**Table 2.** Analysis of the properties of the items of the FFS-Ideal scale: Mean (M), standard deviation (SD), item-total correlation (r<sub>ix</sub>), Cronbach's alpha if the item is eliminated ( $\alpha$ -x), asymmetry (A) and kurtosis (C).

Complete questionnaire ( $\alpha = .84$ )	M	SD	R <sub>ix</sub>	$\alpha$ -x	A	C
FF-Ideal 1	5.56	1.48	.33	.83	-.76	-.17
FF-Ideal 2	6.36	1.16	.56	.82	-1.88	3.08
FF-Ideal 3	6.17	1.46	.50	.83	-1.63	1.4
FF-Ideal 4	6.54	1.02	.45	.83	-2.50	5.97
FF-Ideal 5	6.23	1.28	.48	.83	-1.86	3.05
FF-Ideal 6	5.26	1.87	.39	.83	-.86	-.31
FF-Ideal 7	6.78	.79	.20	.84	-5.07	30.30
FF-Ideal 8	6.13	1.41	.23	.84	-1.44	.62
FF-Ideal 9	6.43	1.19	.32	.83	-2.79	8.47
FF-Ideal 10	6.43	1.19	.65	.82	-2.91	9.19
FF-Ideal 11	6.24	1.15	.48	.83	-1.82	3.72
FF-Ideal 12	6.39	1.20	.53	.82	-2.48	6.40
FF-Ideal 13	6.3	1.60	.40	.83	-2.40	4.57
FF-Ideal 14	5.38	1.94	.43	.83	-.75	-.87
FF-Ideal 15	5.94	1.91	.54	.82	-1.63	1.22
FF-Ideal 16	6.25	1.34	.47	.83	-1.96	3.25
FF-Ideal 17	6.31	1.59	.50	.82	-2.26	3.84
FF-Ideal 18	6.77	.67	.38	.83	-4.47	28.37
FF-Ideal 19	5.99	1.58	.42	.83	-1.70	2.19

### 3.1.1 Exploratory Factor Analysis

The EFA was carried out with the SPSS statistical program with the 19 items of the ideal FFS scale. recommended grouping into three factors. The application of the EFA grouped into 3 dimensions and 18 items, with item 7 having been eliminated given its low factor loading in the 3 extracted dimensions.

In this way, the EFA was reduced to 18 items grouped into three dimensions. The Kaiser Meyer Olkin (KMO) index of sampling adequacy also presented an optimal value (KMO=.74) and Bartlett's test of sphericity was significant ( $\chi^2=623.06$ ; gl=171;  $p \leq .001$ ). The variance explained by the three factors was 46.18%. These results are presented in the

following table. For a better assessment, the items have been ordered according to the factorial weight of said item in each of the

extracted factors. Table 3 shows this distribution.

**Table 3.** List of items ordered according to ideal FF scale factor loadings.

Item	F1	F2	F3	Com.
FF-Ideal 2	.80	.06	.17	.68
FF-Ideal 12	.62	.11	.3. 4	.52
FF-Ideal 4	.60	.17	.07	.40
FF-Ideal 17	.55	.16	.24	.39
FF-Ideal 7	.55	-.18	-.05	.33
FF-Ideal 19	.48	.38	-.06	.38
FF-Ideal 5	.46	.39	.12	.38
FF-Ideal 14	.43	.19	.28	.30
FF-Ideal 18	.41	.21	.15	.24
FF-Ideal 15	.00	.82	.09	.69
FF-Ideal 13	.11	.78	-.05	.62
FF-Ideal 3	.09	.66	.28	.52
FF-Ideal 16	.39	.66	.05	.59
FF-Ideal 9	.06	-.00	.69	.48
FF-Ideal 11	.12	.24	.68	.54
FF-Ideal 8	.04	-.11	.60	.38
FF-Ideal 10	.39	.29	.57	.57
FF-Ideal 6	.3. 4	-.04	.50	.37
FF-Ideal 1	.07	.19	.50	.29

### 3.1.2 Confirmatory Factor Analysis

Once the EFAs were carried out, various CFAs were carried out with the aim of verifying, on the one hand, the factor structure extracted by the EFA in the FF-Ideal (18 items grouped in three dimensions).

The application of the CFA on the factor structure extracted from the previous EFA showed a good fit in the ideal FFS (see table 4). This model presents a significant chi-square ( $SB\chi^2 = 145.43$ ;  $df=132$ ;  $p < .05$ ) and a normed chi-square value ( $\chi^2/df = 1.10$ ) that indicated a good fit since it shows a value lower than the value cutoff proposed by

various authors ( $< .05$ )<sup>50</sup>. The RMSEA showed a value of .032 (CI=.000 - .060), which meets the minimum criteria for acceptable fit ( $\leq .08$ )<sup>44</sup>. Likewise, the rest of the indices show a good fit of the model, since they presented values greater than .90<sup>44</sup>: the Non-Normed Fit Index (NNFI = .92), the Comparative Fit Index (CFI = .93) and the Incremental Fit Index (IFI = .94). Therefore, the model appears to show adequate internal validity for the ideal FFS scale. These results can be seen in Table 4 below.

**Table 4.** Goodness-of-fit indices of the FFS-Ideal scale

Initial model	$\chi^2$ (df)	$\chi^2/df$	RMSEA (IC)	CFI	NNFI	IFI
<b>18 items, 3 factors</b>	145.43 (132)	1.10	.032 (.000-.060)	.93	.92	.94

Note. SB=Satorra Bentler; df=degrees of freedom; RMSEA = Root Mean Square Error of Approximation ( $\leq .080$ ); CI=RMSEA Confidence Interval; CFI = Comparative Fit Index; NNFI = Nonnormed Fit Index; IFI = Incremental Adjustment Index; CFI, NNFI, IFI ( $\geq .90$ );  $\chi^2/df$  ( $\leq 5.00$ ).

Finally, construct validity was contrasted through the analysis of convergent and discriminant validity. Thus, to check the convergent validity of the final 3-factors, the 18-item scale, the factor loadings, and t-test values were considered. As can be seen in Table 5, the factor loadings of the items that make up the ideal FFS scale range between

$\lambda=.41$  and  $\lambda=.80$  for factor 1 Planning: between  $\lambda=.66$  and  $\lambda=.82$  for factor 2 Participatory Practices, and factor 3 Relational Practices, from  $\lambda=.50$  to  $\lambda=.69$ . All factor loadings of the indicators corresponding to each construct were significant ( $p \leq .05$ ) and most of them were higher than the recommended cut-off point ( $> .60$ ).

**Table 5.** Factor loadings, Cronbach's alpha ( $\alpha$ ), composite reliability (FC) and average variance extracted (AVE) in ideal FFS scale.

items		$\alpha$	F.C.	AVE
8	Factor 1. Planning	.79	.92	.41
FF-Ideal 2	.80			
FF-Ideal 4	.60			
FF-Ideal 5	.46			
FF-Ideal 12	.62			
FF-Ideal 14	.43			
FF-Ideal 17	.55			
FF-Ideal 18	.41			
FF-Ideal 19	.48			
4	Factor 2. Participatory Practices	.73	.87	.57
FF-Ideal 3	.66			
FF-Ideal 13	.78			
FF-Ideal 15	.82			
FF-Ideal 16	.66			
6	Factor 3. Relational Practices	.62	.86	.29
FF-Ideal 1	.50			
FF-Ideal 6	.50			
FF-Ideal 8	.60			
FF-Ideal 9	.69			
FF-Ideal 10	.57			
FF-Ideal 11	.68			

The reliability of the model was tested through Cronbach's alpha, composite reliability (CR) and the average variance extracted (AVE). As can be seen in Table 5, the coefficients of Cronbach's Alpha and those of CR for each factor ranged between .62 and .79, lying between .60 and .70. They are also acceptable because they represent the lower limit of acceptability<sup>40</sup>. Likewise, the AVE values ranged between .29 and .57, lower than the recommended cut-off point (>.50) in factors 1 and 3.

To evaluate the discriminant validity, we verified that all the correlations between the various factors were less than .85<sup>49</sup>. And finally, a new varimax rotation was carried out with the objective of checking the factor weight of each of the corresponding items after performing the confirmatory factor analysis. After this analysis, the explained variance stands at 47.78%. These results can be seen in Figure 1.

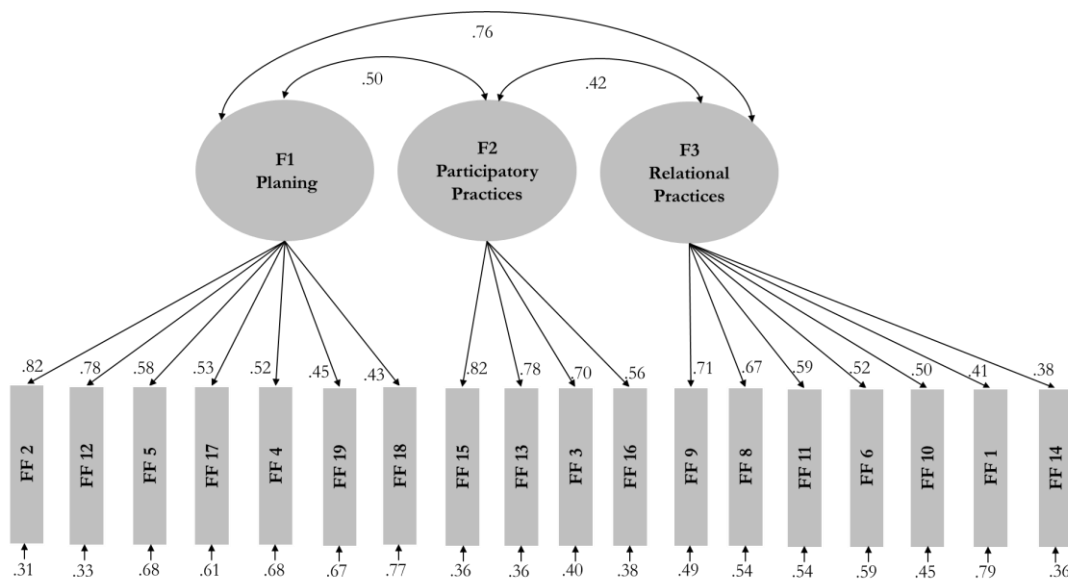


Figure 1. Correlations between factors and Varimax rotation post confirmatory factor analysis and measurement errors.

### 3.2 FAMILY FINESSE SCALE – TYPICAL PRACTICES

Next, the adequacy analyzes were carried out for the FFS-Typical scale. In this way, Table 8 shows the data according to the dimension to which they belong: the mean (M), standard deviation (SD), item-total correlation (r<sub>ix</sub>), Cronbach's alpha if said item is eliminated (α<sub>-x</sub>) and the skewness and kurtosis values.

As can be seen in Table 8, all indicators present high item-total correlation

coefficients (>.30) in all cases. The FFS-Typical scale shows an excellent reliability coefficient (α=.93).

Furthermore, to observe whether there was a normal distribution of the data on the FFS-Typical scale, the skewness and kurtosis values of each of the indicators were observed. According to Hair<sup>40</sup> values greater than ±2.58 reject the principle of normality with a probability level of .01 and values above ±1.96 reject said principle with a

probability level of .05. As can be seen in table 8, the skewness values are acceptable in most cases, as well as the kurtosis values are, in most cases, less than  $\pm 3.00$ , except for

items 7 and 18, with a kurtosis greater than this cut-off point.

**Table 6.** Analysis of the properties of the items of the FF-typical scale: Mean (M), standard deviation (SD), item-total correlation (r<sub>ix</sub>), Cronbach's alpha if the item is eliminated ( $\alpha$ -x), asymmetry (A) and kurtosis (C).

Complete questionnaire ( $\alpha = .93$ )	M	SD	R <sub>ix</sub>	$\alpha$ -x	A	C
FF-typical 1	5.93	1.10	.36	.92	-1.06	.92
FF-Typical 2	5.94	1.53	.60	.92	-1.22	.41
FF-Typical 3	5.88	1.61	.60	.92	-1.07	-.35
FF-Typical 4	6.17	1.43	.66	.92	-1.50	.99
FF-Typical 5	5.55	1.62	.65	.92	-.80	-.43
FF-Typical 6	5.21	1.82	.30	.93	-.45	-.87
FF-Typical 7	6.47	1.25	.60	.92	-2.69	6.79
FF-Typical 8	5.75	1.54	.64	.92	-.58	-1.07
FF-Typical 9	6.02	1.78	.63	.92	-1.70	1.49
FF-Typical 10	6.14	1.53	.63	.92	-1.87	2.73
FF-Typical 11	5.56	1.48	.74	.92	-.95	.07
FF-Typical 12	5.9	1.73	.62	.92	-1.47	1.17
FF-Typical13	5.06	2.42	.66	.92	-.46	-1.58
FF-Typical 14	5.32	2.06	.65	.92	-.48	-1.28
FF-Typical 15	5.3	2.31	.68	.92	-.65	-1.28
FF-Typical 16	5.65	1.64	.74	.92	-.88	-.40
FF-Typical 17	5.84	1.92	.72	.92	-1.46	.62
FF-Typical 18	6.47	1.02	.55	.92	-2.70	8.74
FF-Typical 19	5.43	1.90	.66	.92	-1.04	-.10

### 3.2.1 Exploratory Factor Analysis

The EFA carried out with the 19 items of the Typical FFS scale was reduced to 16 items grouped into two dimensions. The Kaiser Meyer Olkin (KMO) index of sampling adequacy also presented an optimal value (KMO=.91) and Bartlett's test of sphericity was significant ( $\chi^2=1057.87$ ; gl=171;  $p \leq .001$ ). The variance explained by the two factors was 52.05%. The following Table 9 presents these

results; for a better assessment, the items have been ordered according to the factorial weight of said item in each of the extracted factors. Table 9 shows this distribution.

**Table 7.** List of items ordered according to factor loadings.

Item	F1	F2	Com.
FF- Typical 15	.86	.11	.75
FF- Typical 13	.80	.15	.66
FF- Typical 14	.74	.20	.59
FF- Typical 10	.62	.32	.48
FF- Typical 8	.61	.35	.50
FF- Typical 3	.56	.35	.44
FF- Typical 4	.56	.43	.50
FF- Typical 17	.56	.52	.59
FF- Typical 16	.55	.57	.63
FF- Typical 5	.52	.46	.49
FF- Typical 9	.51	.46	.48
FF- Typical 7	.26	.70	.56
FF- Typical 12	.32	.66	.54
FF- Typical 18	.22	.66	.48
FF- Typical 1	-.01	.64	.41
FF- Typical 11	.48	.64	.64
FF- Typical 19	.43	.57	.52
FF- Typical 16	.55	.57	.63
FF- Typical 17	.56	.52	.59
FF- Typical 2	.40	.51	.42

### 3.2.2 Confirmatory Factor Analysis

Once the EFAs were carried out, CFA was carried out with the objective of verifying, on the one hand, the factor structure extracted by the EFA in the FFS-Typica (16 items grouped into 2 dimensions).

The application of the CFA on the factor structure extracted from the previous EFA showed a good fit on the scale (see table 10). This model presents a significant chi-square ( $SB\chi^2 = 148.16$ ;  $df = 103$ ;  $p < .05$ ) and a normed chi-square value ( $\chi^2/df = 1.44$ ) which indicated a good fit since it shows a value higher than the cutoff proposed by various authors ( $< .05$ )<sup>50</sup>. The RMSEA showed a value of .058 (CI = .035 - .077), which meets the minimum criteria for acceptable fit ( $\leq .08$ )<sup>44</sup>.

Likewise, the rest of the indices show a good fit of the model, since they presented values greater than .90 ( $\geq .90$ )<sup>44</sup>: the Non-Normed Fit Index (NNFI = .93), the Comparative Fit Index (CFI = .94) and the Incremental Fit Index (IFI = .94). Therefore, the model appears to show adequate internal validity for the FFS-Typical scale. These results can be seen in Table 12 below:

**Table 8.** Goodness-of-fit indices of the typical FF scale.

Initial model	$\chi^2$ (df)	$\chi^2/df$	RMSEA (IC)	CFI	NNFI	IFI
<b>16 items, 2 factors</b>	148.16 (103)	1.44	.058 (.035-.077)	.94	.93	.94

**Note.**SB=Satorra Bentler; df=degrees of freedom; RMSEA = Root Mean Square Error of Approximation ( $\leq .080$ ); CI=RMSEA Confidence Interval; CFI = Comparative Fit Index; NNFI = Non Normed Fit Index; IFI = Incremental Adjustment Index; CFI, NNFI, IFI ( $\geq .90$ );  $\chi^2/df$  ( $\leq 5.00$ ).

Finally, the validity of the construct was contrasted through the analysis of convergent and discriminant validity. Thus, to check the convergent validity of the final 2-factor, 16-item scale, the factor loadings, and t-test values were considered. As can be seen in Table 11, the factor loadings of the items that make up the typical FFS scale range between

$\lambda=.51$  and  $\lambda=.70$  for factor 1. Family Training, and between  $\lambda=.51$  and  $\lambda=.86$  for factor 2. Implementation mode. All factor loadings of the indicators corresponding to each construct were significant ( $p \leq .05$ ) and many of them were higher than the recommended cut-off point ( $> .60$ ).

**Table 9.** Factor loadings, Cronbach's alpha ( $\alpha$ ), composite reliability (FC) and average variance extracted (AVE) in typical FF scale.

Items		$\alpha$	F.C.	AVE
7	Factor 1. Family Training	.79	.91	.40
FF-Typical 1	.64			
FF- Typical 2	.51			
FF- Typical 7	.70			
FF- Typical 11	.64			
FF- Typical 12	.66			
FF- Typical 18	.66			
FF- Typical 19	.57			
9	Factor 2. Implementation mode	.90	.94	.30
FF- Typical 3	.56			
FF- Typical 4	.56			
FF- Typical 5	.52			
FF- Typical 8	.61			
FF. Typical 9	.51			
FF-Typical 10	.62			
FF-typical 13	.80			
FF-Typical 14	.74			
FF-Typical 15	.86			



The reliability of the model was contrasted through Cronbach's alpha, FC and AVE. As can be seen in Table 11, the coefficients of Cronbach's Alpha and those of FC for each factor ranged between .79 and .90. Likewise, the AVE values ranged between .40 and .30, lower than the recommended cut-off point ( $>.50$ )<sup>48</sup>.

To evaluate the discriminant validity, we verified that all the correlations between the

various factors were less than  $.85$ <sup>49</sup>. And finally, a new varimax rotation was carried out with the objective of checking the factor weight of each of the corresponding items after performing the confirmatory factor analysis. After this analysis, the explained variance stands at 53.24%. These results can be seen in figure 2.

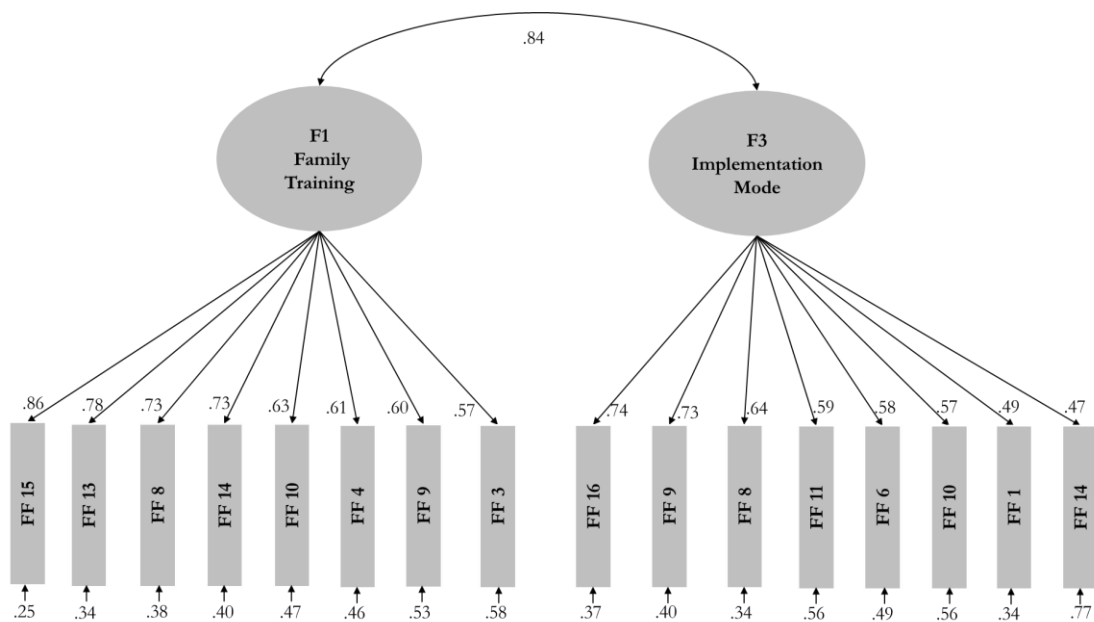


Figure 2. Correlations between factors and Varimax rotation post confirmatory factor analysis and measurement errors.

## 4 Discussion

To understand the global nature of this research focused on validating the Family Services Evaluation Scale in Natural Environments (FINESSE FAMILY), we talk about recommended practices based on evidence, a term increasingly used in the field of early attention<sup>51</sup> and understood as practices that have provided empirically interesting results to improve daily praxis<sup>38</sup>.

According to the present validation results of the Finesse Family Scale—typical experiences,

collected from families, where we observe as factors of the construct, on the one hand the family training and on the other hand the implementation model of the intervention in the neurodevelopment services, it could highlight that those effective and quality interventions, due to the high degree of satisfaction of the families and main caregivers of children between 0 and 6 years old, who, due to their condition, present difficulties in their development or risk of suffer from them, must be based on the

capabilities building that favor the family's acquisition of new knowledge, the sense of confidence, self-efficacy, competence and control, and therefore, its level of family empowerment<sup>17</sup>, in order to optimize the benefits that the intervention can provide both for the functioning of the family and for the development of the child.

In the study carried out to validate the Finesse Professional Scale<sup>30</sup>, which allows professionals to evaluate their daily practice, it was observed that among the ideal practices for professionals, recommended practices are identified, where highlight the importance of the first contacts with the family, the satisfaction of the families' needs, the consideration of the natural environment (home, classroom and community) for the evaluation, and the holistic evaluation, among others, coinciding these with the typical practices that families receive due to the implementation models that determine the interventions of the services they are currently receiving, and that they can evaluate with Finesse Family Typical.

On the other hand, families continuing to evolve in daily practice based on the assessment of Finesse Family ideals, where it gives keys to consider in intervention models, based on the factors of the construct, this being the planning of the intervention, participatory and relational practices, that is, the implementation of collaborative practices, in which values of dignity, respect, humility and tolerance are presented. According to recent studies, the need to improve participatory practices is significantly shown, seeing these great challenges regarding relational practices<sup>52</sup>.

The great contribution of this work is the validation of a tool that allows the assessment of practices recommended by scientific evidence through the interventions that families receive on a regular basis, and thus determine the degree of integrity and fidelity of the models of implementation of different early childhood intervention services. While, on the other hand, it allows us to identify lines of improvement, through the ideal practices that families would like to receive, emphasizing largely on responding to the challenge of improving collaborative practices between professionals and families, to thus, impact more and better on family training and child development.

## 5 Conclusions

We can conclude with the validation of a tool that allows neurodevelopment intervention services to assess the degree of integrity with which they are implementing family centered as recommended practices<sup>3, 53</sup> in intervention in early childhood, through the family perception collected with the Scale. Finesse Familia Scale Typica (FFS – Typica), which, according to the results, is shown to be valid for early care services that serve families with children from 0 to 6 years old with developmental challenges who are in the process intervention for at least 6 months. This part of the scale is composed of a total of 16 items (items 6, 16 and 17 having been removed), and a reliability coefficient of  $\alpha=.93$ , thus composing a 2-dimensional model for the fidelity construct. in the offered implementation of recommended practices in early care services, Factor 1 being Family Training ( $\alpha=.79$ ), it was completed with items 1, 2, 7, 11, 12, 18 and 19, understood as the

practices that result in the empowerment of the family. And finally, Factor 2. Implementation Mode ( $\alpha=.90$ ) was made up of items 3,4, 5, 8, 9, 10, 13, 14 and 15, this factor being understood as the progressive development of practices that allow detailing fidelity in the implementation of recommended practices in early childhood intervention services.

On the other hand, it is concluded with the validation of the Finesse Familia Scale Ideal (FFS – Ideal), which, according to the results, is shown to be valid for early care services that serve families with children from 0 to 6 years old with developmental challenges who are in the intervention process for at least 6 months. The scale is composed of a total of 18 items (item 7 having been removed), and a reliability coefficient of  $\alpha=.84$ , thus composing a 3-dimensional model for the construct of families' expectations in relation to the intervention what they would like to receive, thus showing an opportunity for neurodevelopment intervention services to

improve the satisfaction of the families themselves towards the service. The dimensions would remain Factor 1: Planning ( $\alpha=.79$ ), understood as the role that the family assumes both in the assessment, programming, and in the implementation of said intervention, it was completed with items 2, 4, 5, 12, 14, 17, 18 and 19. On the other hand, Factor 2: Participatory Practices ( $\alpha=.73$ ), which have been specified previously, was made up of items 3, 13, 15 and 16. And finally, Factor 3: Relational Practices ( $\alpha = .62$ ), also specified previously, which included items 1, 6, 8, 9, 10 and 11.

### **Conflict of Interest:**

The authors have no conflicts of interest to declare.

### **Funding:**

None.

### **Acknowledgements:**

None.

## References:

1. Bronfenbrenner, U. Ecology of the family as a context for human development: Research perspectives. *J Develop Psycho*. 1986; 22: 723-242
2. Samenoff AJ. Reproductive risk and the continuum of caretaking casualty. In: Horowitz FD, Heterington EM, Scarr-Salapatek S, Siegel G, eds. *Research*. Vol 4. University of Chicago Press; 1975:187–244.
3. Division for Early Childhood. DEC recommended practices in early intervention / early childhood special education 2014. Retrieved from: <http://www.dec-sped.org/recomendedpractices>
4. Díaz-Sánchez, C. Basic guide to Early Care and transformation. Madrid. *Full Inclusion*. 2019.
5. Law, M, Rosenbaum, P, King, G, King, S, Burke-Gaffney, J, Moning, J, Szkut, T, Kertoy, M, Pollock, N, Viscardis, L, Teplicky, R. What is family-centered service? CanChild FCS Sheet #01. Hamilton, Ontario, Canada: CanChild Center for Childhood Disability Research, McMaster University; 2003. Retrieved from: <https://canchild.ca/system/tenon/assets/attachments/000/001/266/original/FCS1.pdf>
6. Dunst, CJ, Trivette, CM. Capacity-Building Family-Systems Intervention Practices. *J Fami Soc Work*, 2009; 12 (2): 119-143. doi:10.1080/10522150802713322
7. Bronfenbrenner, U. The ecology of human development: Experiments by nature and design. Cambridge, MA. Harvard University Press 1979.
8. Rappaport, J. In Praise of Paradox: A Social Policy of Empowerment Over Prevention, *Am J Commune Psychol*. 1981;9(1):1–25. doi:10.1007/bf00896357
9. Stinnett N, Chesser B, Defrain JD. Building Family Strengths: training blueprints. University of Nebraska Press; 1979.
10. Gottlieb BH. Social Network and Social Support. SAGE Publications; 1981
11. Cronenwett L, Brickman P. Models of helping and coping in childbirth. *Nursing Research*. 1983;32(2):84–98.
12. Bailey DB, McWilliam RA, Darkes LA, Hebbeler, K, Simeonsson, RJ, Spiker, D, Wagner, M. Family outcomes in early intervention: A framework for program evaluation and efficacy research. *Except Child*. 1998;64(3):313–328. doi:10.1177/001440299806400302
13. Díez-Martinez A. Evolution of the Early Care process based on the professional-family-child triad. *Down Syndrome J*. 2008; 25:46–55.
14. Mas, JM, and Giné, C. The family with a child with developmental difficulties or disorders. In C. Cristóbal, A. Fornol, C. Giné, JM. Mas and Pegenaute, M. (Coord.). Early care, a commitment to children and their families. Barcelona. UOC 2010.
15. Bailey DB Jr, Winton PJ, Rouse L, Turnbull AP. Family goals in infant intervention: Analysis and issues. *J Early Inter*. 1990;14(1):15–26. doi:10.1177/105381519001400102
16. Espe-Sherwindt M. Family-Centered Practice: Collaboration, Competency and Evidence. *J Supp Learn* 2008; 23:136–143. doi:10.1111/j.1467-9604.2008.00384.x
17. Dunst, CJ, and Espe-Sherwindt, M. Contemporary early intervention models, research and practice for infants and toddlers with disabilities and delays. In J.M. Kauffman;

- DP Hallahan and PC Pullen (Eds.). Handbook of special education (2nd ed.). New York: Taylor and Francis 2017;831-849.
18. Dunst CJ, Trivette CM, Hamby DW. Meta-analysis of family-centered help giving practices research. *Mental Retard Develop Disable Research Reviews*. 2007; 13:370–378. doi:10.1002/mrdd20176
19. Reich S, Bickman L, Heflinger AC. Covariate of self-efficacy: caregiver characteristics related to mental health services self-efficacy. *J Emote Behave Disorder*. 2004;12(1):99–108.
20. Dunst CJ, Bruder MB, Espe-Sherwindt M. Family Capacity - Building in Early Childhood Intervention: Do context and Sting Matter? *School Commun J*. 2014;21(1):37–48.
21. Wolery M, Hemmeter ML. Classroom instruction: Background, assumptions, and challenges. *J Early Intervent*. 2011;33(4):371–380. doi:v1177/1053815111429119
22. Zang C, Bennett T. Multicultural views of disability: Implications for early intervention professionals. *Infant Young Child* 2001;11(2):143–154.
23. Raver SA, Childress DC. Family-centered early intervention: Supporting infants and toddlers in natural environments. Brookes Publishing; 2014.
24. Garcia-Sánchez, F.A., Escorcía-Mora, C.T., Sánchez-López, M.C., Orcajada, N., and Hernandez-Pérez, E. (2014). Early Care Centered on the Family. *J Century Zero*, 45 (3), 6-24.
25. Dunst CJ, Boyd K, Trivette CM, Hamby DW. Family-oriented program models and professional help giving practices. *Fam Relat J*. 2002;51:221–229.
26. Espe-Sherwindt, M. From research to practice: working with families in “the real world” of early care intervention. In CT Escorcía-Mora and L. Rodríguez-García (eds). Early care practices focused on the family and Natural Environments. Madrid: National University of Distance Education 2019; 73-92.
27. McWilliam, RA, Garcia-Grau, P. Twelve Critical Steps for the Professional – Family meeting. In CT Escorcía-Mora and L. Rodríguez-García (eds). Early care practices focused on the family and in Natural Environments. Madrid: National University of Distance Education 2019; 96-106
28. Baum AC, McMurray-Schwarz P. Preservice teachers’ beliefs about family involvement: Implications for teacher education. *Early Child Educ J*. 2004;32(1):57–61. doi:10.1023/b:ecej.0000039645.97144.02
29. Flynn GV, Nolan B. The rise and fall of a successful mentor program: What lessons can be learned? *Clearing House*. 2008;81(4):173–179. doi:10.3200/tchs.81.4.173-179
30. García-Grau P, Martínez-Rico G, McWilliam RA, Cañadas Pérez M. Typical and ideal practices in early intervention in Spain during a transformation process of professional practices. *J Early Interv*. 2020;42(1):3–19. doi: 10.1177/1053815119859046
31. Jung LA. More Better: Maximizing Natural Learning Opportunities. *Young Except Child* 2003;6:21–26. doi:10.1177/109625060300600303
32. Metz A, Naom SF, Halle T, Bartley L. An integrated stage-based framework for implementation of early childhood programs and systems [OPRE Research Brief OPRE 201548]. Office of Planning, Research and Evaluation, Administration for Children and Families; 2015.

33. Escorcía Mora, CT, Cañadas Pérez, M, Martínez-Rico, G, García Grau, P. Phases and steps in the implementation of recommended practices in early care. *Century Zero J.* 2021;52(3):37–57.  
<https://doi.org/10.14201/scero20215233757>
34. Guralnick, MJ. The science of implementing developmental systems approaches and family-centered practices. In CT Escorcía-Mora and L. Rodríguez-García (eds). *Early care practices focused on the family and in Natural Environments*. Madrid: National University of Distance Education 2019;51-72.
35. Fernández Valero, R, Serrano, AM, McWilliam, RA, Cañadas, M. Relationship between family empowerment and quality of early care services. *J Stud Research Psycho Educ.* Published online 2017:317–321.  
<https://doi.org/10.17979/reipe.2017.0.11.3054>
36. García-Grau P, Martínez-Rico G, McWilliam RA, Cañadas Pérez M. Typical and ideal practices in early intervention in Spain during a transformation process of professional practices. *J Early Interv.* 2020;42(1):3–19. doi: 10.1177/1053815119859046
37. Fernández Valero, R., Serrano, AM, McWilliam, RA, and Cañadas, M. Predictor variables of family empowerment in family-centered early care practices. *J Speech Therapy Phoniat Audio.* 2020;40(3):128–137.  
<https://doi.org/10.1016/j.rfa.2020.05.003>
38. Dunst, CJ. Future directions and considerations in the continuous evolution of early childhood care. In CT Escorcía-Mora and L. Rodríguez-García (eds). *Early care practices focused on the family and Natural Environments*. Madrid: National University of Distance Education. 2019; 433-458.
39. McWilliam, R.A., and Younggren, N. *Measure of engagement, independence, and social relationships*. Paul H. Brookes 2019.
40. Hair, JF, Black, WC, Babin, BJ, Anderson, RE, Tatham, R. *Multivariate data analysis*. New Jersey: Prentice Hall 2006.
41. Lloret-Segura S, Ferreres-Traver A, Hernández-Baeza A, Tomás-Marco I. Exploratory factor analysis of items: a practical guide, revised and updated. *Annals Psycho J.* 2014;30(3):1151–1169.  
doi:<http://dx.doi.org/10.6018/analesps.30.3.199361>
42. Meyers, LS, Gamst, G, Guarino, AJ. *Applied multivariate research, design, and interpretation*. London: Sage Publications 2006.
43. Kline, RB. *Principles and practice of structural equation modeling (2nd ed.)*. New York: The Guilford Press 2005.
44. Bentler, PM. *EQS 6 structural equations modeling software*. Encino, CA: Multivariate Software. 2004.
45. Byrne, BM. *Structural equation modeling with ammos: Basic concepts, applications, and programming. (2nd ed.)*. New York, NY: Routledge 2009.
46. Hu, L, Bentler, PM. Evaluating model fit. In R.H. Hoyle (Eds.), *Structural equation modeling: Concept, issues, and applications*. Thousand Oaks, CA: Sage Publications, Inc. 1995; 76-99
47. Browne, MW, Cudeck, R. Alternative ways of assessing model fit. In KA Bollen and JS Long (Eds.), *Testing structural equation models*. Newbury Park, CA: Sage. 1993;136-62.
48. Fornell C, Larcker DF. Evaluating structural equation models with unobservable variables and measurement error. *J Mark Res.*

1981;18(1):39. doi:10.2307/3151312

49. Kline, RB. Principles and practice of structural equation modeling (2nd ed.). New York: The Guilford Press 2005.

50. Schumacker, R, Lomax, R. A beginner's guide to structural equation modeling (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates 2004.

51. Strain PS. Personal thoughts on early childhood special education research: An historical perspective, threats to relevance, and call to action. *J Early Int.* 2018;40(2):107–116. doi:10.1177//1053815117750411

52. Escorcía-Mora CT, García-Sánchez FA, Sanchez-López MC, Orcajada N, Hernández-Perez E. Early Care Practices in the Southeast of Spain: Perspective of Professionals and Families. *Annals Psycho J.* 2018;34(3):500–509.

53. García-Grau, P, Morales-Murillo, CP, Martínez-Rico, G, Cañadas Pérez, M, Escorcía Mora, CT. Approaches, recommended practices, models and procedures in family-centered early care. *Century Zero J.* 2022;53(4):131–148. doi:10.14201/scero2022534131148.