



## Early childhood intervention practitioners' competence and confidence appraisals using recommended practices and relationship with parent involvement

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**Título:** Competencia y confianza profesional en atención temprana en el uso de prácticas recomendadas y su relación con la involucración parental.

**Resumen:** La involucración parental es un componente importante de las prácticas recomendadas en atención temprana (AT). Sin embargo, la forma en que los padres son involucrados en la intervención temprana de sus hijos difiere considerablemente entre los profesionales. En este sentido, la investigación actual muestra que el juicio de los profesionales en relación a su competencia y confianza influye el uso de prácticas de AT. Los objetivos de este estudio fueron (1) adaptar y validar la Early Childhood Intervention Practitioner Competence and Confidence Scale para su uso en España, (2) examinar las propiedades psicométricas de esta escala, (3) comparar las creencias de los profesionales en relación a su competencia y confianza en el uso de prácticas recomendadas, y (4) analizar la relación entre estas creencias y el juicio de los profesionales sobre la involucración parental en AT. A este fin, se contó con una muestra española de 130 profesionales de AT. Los resultados indicaron que la escala es un instrumento válido y fiable para medir la competencia y confianza profesional en el uso de seis prácticas recomendadas de AT en el contexto español. El juicio de los profesionales respecto a su competencia y confianza difirió entre las diversas prácticas recomendadas. Se encontraron correlaciones positivas y significativas entre las valoraciones de competencia y confianza de los profesionales y sus juicios sobre la involucración parental. Estos resultados muestran que una elevada competencia y confianza en el uso de diferentes tipos de prácticas recomendadas en AT está relacionada con una mayor involucración parental en la participación activa del niño en su aprendizaje y desarrollo en actividades cotidianas. Se discuten las implicaciones prácticas y de investigación.

**Palabras clave:** Atención Temprana. Competencia y Confianza Profesional. Creencias de Autoeficacia. Prácticas Recomendadas. Involucración Parental.

**Abstract:** Parent involvement in early childhood intervention (ECI) is considered an important component of recommended ECI practices. However, how parents are involved in their child's early intervention differs considerably between ECI practitioners. Current research indicates that practitioners' competence and confidence appraisals influence the use of ECI practices. The purposes of this study were to (1) adapt and validate the Early Childhood Intervention Practitioner Competence and Confidence Scale for use in Spain, (2) examine the psychometric properties of the scale, (3) compare practitioners' beliefs about their competence and confidence in using recommended ECI practices, and (4) evaluate the relationship between belief appraisals and practitioners' judgments of parent involvement in ECI. The sample included 130 Spanish ECI practitioners. The results indicated that the scale is a valid and reliable instrument for measuring practitioners' competence and confidence in using six ECI-recommended practices in Spain. Practitioners' appraisals of competence and confidence, however, differed across the recommended practices. Significant positive correlations were found between the practitioners' appraisals of competence and confidence and their judgments of parent involvement. These results show that a strong sense of competence and confidence in using different kinds of ECI-recommended practices is related to increased parent involvement in active child participation in learning and development in everyday activities. Research and practical implications are discussed.

**Keywords:** Early Childhood Intervention. Practitioners' Competence and Confidence. Self-efficacy beliefs. Recommended Practices. Parent Involvement.

### Introduction

Early childhood intervention (ECI) in Spain is undergoing a paradigm shift based on a growing interest among practitioners about the need to increase parent involvement in the use of ECI-recommended practices (e.g., family-centered practices, natural environment practices; Díaz-Sánchez, 2019; FEAPS, 1999; GAT, 2000; Serrano et al., 2017). ECI in Spain has traditionally been practiced as an expert, deficit-based, and child-focused approach to intervention (Escorcia-Mora, 2019). However, Spanish experts in ECI have reached a consensus about how ECI should be implemented in Spain (GAT, 2000). This consensus statement notes that ECI should focus on the child, his or her family, the environment, and the importance of the developmental contexts for

child and family learning. Despite agreement about the framework, there continues to be a need for improvements in the service delivery system to be more aligned with the premises of the framework (Escorcia-Mora et al., 2018; García-Ventura et al., 2021; Giné et al., 2004; Ponte, 2004).

Although the traditional paradigm continues to be widely used by Spanish practitioners, there is intense interest in a paradigm shift (Díaz-Sánchez, 2019; Serrano et al., 2017; Tamarit, 2015). This change has been mainly focused on efforts to promote the use of different recommended practices to achieve increased parent involvement (Division for Early Childhood, 2014; DEC Task Force on Recommended Practices, 1993; EURLY AID, 2019; European Agency for Development in Special Need Education, 2005). This includes family-centered practices, family and child authentic assessment, teaming and collaboration, individual family service plan development and implementation, and the use of evidence-based intervention strategies (Dalmau et al., 2017; Díaz-Sánchez, 2019; Tamarit, 2015).

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Ma et al. (2016) defined “parent [and]family involvement as the proactive engagement of parents in various activities and behaviors that aim to promote the learning and development of their children” (p. 773). Parent involvement is considered an essential component of ECI (Allen & Petr, 1996; Bronfenbrenner, 1975; Jaafarawi, 2017; Moeller et al., 2013; Sandall et al., 2000; Swanson et al., 2011; Zwaigenbaum et al., 2015) and is related to both parent and child positive outcomes (e.g., Ancell et al., 2018; Kahn et al., 2009; Ma et al., 2016, Strauss et al., 2013; Vanderveen et al., 2009). Parent involvement is also a constant and a key component across all ECI-recommended practices (Dunst, 2017, Macy et al. 2010; Nijhuis et al., 2007; Sandall et al., 2000). According to the Division of Early Childhood (2004), their recommended practices emphasize the importance of parental involvement and state that “the purpose of early intervention is to enhance the capacity of the family to facilitate their child’s development” (Sandall et al., 2000, p.152).

Notwithstanding the importance of parent involvement, how practitioners involve parents in ECI differs considerably (Björck-Åkesson & Granlund, 1995; Bruder & Dunst, 2015; Dunst et al., 2014; Pappas et al., 2008). Several variables have been found to be related to variations in parent involvement (Brower et al., 2020; Korfmacher et al., 2008) and include family and child characteristics as well as practitioner and intervention-related variables. Practitioner and intervention variables related to variations in parent involvement include intervention setting (Dunst et al., 2014; Kellar-Guenther et al., 2014), practitioner’s practices and help-giving styles (Korfmacher et al., 2007; Mas et al., 2020; Morrison et al., 2014; Swanson et al., 2011) and practitioner’ beliefs about the role parents play in ECI (Sawyer & Campbell 2009; Strauss et al., 2015; Tully et al., 2018). Regarding these last two variables, the meta-analysis conducted by Trivette et al. (2012) showed that practitioners’ beliefs are one factor that influences the adoption and use of different ECI-recommended practices. The study described in this paper focuses evaluated how different practitioner self-efficacy beliefs were related to efforts to engage parents in ECI.

Self-efficacy refers to a person’s belief in their ability to organize and execute courses of action necessary to produce desired results (Bandura, 1997). According to Bandura (1997), performing a task competently requires knowledge and skills (competence) and a belief (sense of confidence) that efforts will be successful. Research on practitioner competence and confidence in the ECI field has mainly focused on developing measurement instruments (e.g., Bruder et al., 2011; Lamorey & Wilcox, 2005; Moore & Wilcox, 2006) and examining the variables that influence these types of belief appraisals (e.g., type of pre-service and in-service professional development, professional discipline, years of experience; Bruder et al., 2013; Dunst & Bruder, 2014; Ely et al., 2020; von Suchodoletz et al., 2018). Despite progress, little research has been conducted on the relationships between practitioner competence and confidence beliefs and practitioners’ judgments of parent involvement in ECI (Trivette et

al., 2012; Lamorey & Wilcox, 2005; von Suchodoletz et al., 2018). What evidence is available is encouraging. For example, Swanson et al. (2011) found that the use of family capacity-building natural environment practices promoted parent involvement which resulted in positive family outcomes. Strauss et al. (2015) reported a relationship between practitioner competence in collaborative practices and family and child outcomes (e.g., parent distress reduction, positive parent-child interactions, and child development). Tully et al. (2018) conducted a study with practitioners from different disciplines who worked in parenting intervention programs and found that their judgments of competence and confidence in parent involvement strategies were one of the predictors of practitioners’ abilities to facilitate parents’ attendance at intervention sessions.

Considering the challenging paradigm shift process in Spain based on the need to increase parent involvement in ECI using recommended practices, this study aimed to investigate the relationship between practitioners’ competence and confidence belief appraisals in using recommended practices, and their judgments of parent involvement. To the best of our knowledge, there are no studies in Spain assessing practitioner competence and confidence in using recommended practices and if practitioner beliefs are related to judgments of parent involvement in ECI. There also are no specific instruments assessing ECI practitioners’ competence and confidence in Spain. One of the objectives of this study was to adapt and validate a self-efficacy beliefs measure for use in Spain.

In the USA, Bruder et al. (2011) developed the Early Childhood Intervention Practitioners Competence and Confidence Scale (CCS). The original scale has two versions: one for early intervention (EI) practitioners and a second for preschool program practitioners. The early intervention practitioners’ version of the scale was the focus of investigation in our study because was a better fit with the Spanish ECI context.

The CCS has established psychometric properties (Bruder et al., 2011). Different versions of the scale have proven useful for assessing practitioners’ competence and confidence beliefs in using different kinds of ECI-recommended practices (Bruder et al., 2013, Bruder & Dunst, 2015; Dunst & Bruder, 2014). The use of the scale in Spain requires that the psychometric properties of the scale be established and that practitioners’ self-assessments of their competence and confidence are related to judgments of parent involvement in ECI.

The objectives of the present study were:

- 1) To describe the process of adaptation and validation of the CCS (Bruder et al., 2011) for use in Spain.
- 2) To examine the psychometric properties (reliability and validity) of the Spanish version of the CCS (Bruder et al., 2011).
- 3) To compare practitioners’ judgments of their competence and confidence in using six different kinds of ECI-recommended practices.

- 4) To examine the relationship between practitioner competence and confidence beliefs and judgments of parent involvement in ECI.

## Method

### Participants

The study sample included 130 practitioners (93.8% women) from 12 government-accredited ECI centers from three Spanish autonomous communities (Catalonia, Balearic Islands, and Navarre). The participants were between 24 and 62 years of age ( $M = 37.6$ ,  $SD = 8.3$ ) with an average of 8.9 years ( $SD = 6.7$ ) of experience in ECI. Thirty-six percent (36.9%) of the participants were psychologists, 26.2% were speech therapists, 16.9% were physiotherapists, 6.9% were social workers, 6.9% were pedagogues, and 3.1% were occupational therapists. More than half of the sample (63.1%) had postgraduate qualifications.

Twenty-nine (29) of the participants completed the CCS twice to assess the scale test-retest stability. These practitioners were between 27 and 56 years of age ( $M = 40.8$ ,  $SD = 7.5$ ) with an average of 12.5 years ( $SD = 6.4$ ) of experience in ECI. Thirty-four percent (34.5%) of the practitioners were psychologists, 20.7% were speech therapists, 17.2% were physiotherapists, 13.8% were pedagogues, 10.3% were social workers, and 3.4% belonged to other disciplines. Fifty-eight percent (58.6%) of the practitioners had postgraduate qualifications.

### Measures

#### *Background Characteristics*

An investigator-developed background form was used to obtain information about the background characteristics of the study participants (gender, age, years of experience, and discipline). This information was used to describe the study sample.

#### *Competence and Confidence Beliefs*

The CCS Early intervention version of the scale (Bruder et al., 2011) assesses practitioners' judgment of their competence and confidence in using different kinds of ECI-recommended practices (Division for Early Childhood; 2014; DEC Task Force on Recommended Practices, 1993). The original version of the scale included 24 items for six different ECI practices (practice domains): Family-centered practices, teaming and collaboration, assessment, individual family service plans (IFSPs), instructional practices, and natural environments practices. Each practice has two items for measuring competence beliefs and two items for measuring confidence beliefs. Each item is rated on a 7-point scale ranging from never (0) to all the time (6). The psychometric properties of the original scale were established with a North

American sample and found to be a valid and reliable instrument (Bruder et al., 2011).

#### *Self-efficacy Beliefs*

A Spanish translation of five items on the *Early Interventionist Self-Efficacy Scale* (Lamorey & Wilcox, 2005) was used to assess the convergent validity of the CCS. The practitioners indicated the extent to which each statement was consistent with their beliefs on a 5-point Likert scale from *never* (1) to *always* (5) (e.g., "If a family masters a strategy quickly, it would probably be because I knew the necessary steps to facilitate their acquisition of skills;" "I collaborate well with team members from other disciplines;" "When a child shows improvement, it is because I have been effective in facilitating the family's ability to support their child's development"). The number of items was limited to five not to overburden the practitioners and still have a representative number of items for assessing self-efficacy beliefs. The research team selected the five items from the personal intervention efficacy subscale, reflecting practitioners' sense of their on-the-job efficacy. Internal consistency of the self-efficacy beliefs measure was acceptable ( $\alpha = .63$ ; Taber, 2018).

#### *Parent Involvement*

An investigator-developed one-item scale was used to measure practitioners' judgment of parent involvement. The practitioners were asked to indicate on a 5-point Likert scale (1 = *never*, 5 = *always*), the degree to which they "provide strategies for a family member to promote active child participation in everyday activities and child learning and development while engaged in the activities". A single-item scale has previously been used in Spanish (García-Ventura et al., 2021; Mas et al., 2020) and North American studies (Dunst et al., 2014) to measure judgments of parent involvement in ECI.

### Procedure

The study procedures were conducted in three phases: (1) scale adaptation and validation, (2) participant recruitment, and (3) data analysis. All the study procedures were approved by the Research Ethics Committee of the Ramon Llull University (1718002P).

#### *Scale Adaptation and Validation*

For the adaptation and validation of the CCS (first study objective), one of the authors of the original scale was contacted to request permission and collaboration to translate the scale into Spanish. The recommendations of the World Health Organization (n.d.) were followed for translating the scale into Spanish. Then, the Spanish version of the scale

was subjected to expert judgment to ensure content-based validity.

The expert group was made up of five Spanish ECI experts with an average of 12.8 years of experience in the ECI field (Range = 9 - 22 years). Three of the experts had post-graduate university training and were all currently working as ECI practitioners. The other two had completed doctoral studies.

#### *Participants Recruitment*

After the adaptation and validation process was finished, the research team proceeded to participant recruitment. In this phase, 12 government-accredited ECI (inclusion criteria) centers from three Spanish autonomous communities (Catalonia, Balearic Islands, and Navarre) were asked to collaborate. The research team explained the purpose of the study to the ECI center coordinators. Once the coordinators accepted our invitation, they introduced the study to their staff and distributed the study survey in separate envelopes to each practitioner. The survey included the description and justification of the study, an informed consent letter, the four study measurement instruments (background form, the Spanish version of the CCS, the self-efficacy beliefs measure, and the parent involvement measure), and an email address for contacting the researchers if they had any questions or concerns. The practitioners were asked to return the completed survey within 15 days to their coordinator in a sealed envelope. The coordinator in turn sent the material back to the study investigators. Only practitioners who completed all the documents (informed consent letter and the four measurement instruments) were included in the study.

To estimate the test-retest stability of the scale as a part of the second study objective (examine the psychometric properties of the CCS), a subsample of participants was asked to complete the CCS a second time (three months after the first completion). The scale and procedural instructions were sent to selected ECI center coordinators and included envelopes containing an informed consent letter and the CCS. The same procedures for returning the completed information were used.

#### *Data analysis*

After receiving the participants' completed forms, data was computerized for statistical analysis. The IBM SPSS (v.24) and Mplus (v.6.12) programs were used to perform the statistical analyses described below. Data analysis proceeded in three steps.

First, the psychometric properties of the Spanish version of the CCS (second study objective) were evaluated (Irving et al., 2018). This involved the evaluation of the factorial validity of the scale through confirmatory factor analysis (CFA) using the maximum likelihood method (ML). The model described by Bruder et al. (2011) for the original version of the scale was used to guide data analysis. The fit of the model to

the data was evaluated using the Chi-square statistic (divided by its degrees of freedom;  $\chi^2/df$ ), the root mean square error of approximation (RMSEA), the standardized root mean square residual (SRMR), the comparative fit index (CFI), and the Tucker Lewis index (TLI; Irving et al., 2018).

The reliability of the CCS was examined by analyzing the internal consistency of the scale (Cronbach's alpha and items intercorrelation) and test-retest stability (intraclass correlation coefficient). The convergent validity of the scale was assessed by Spearman's correlation between the CCS and the practitioner's self-efficacy beliefs measure (Lamorey & Wilcox, 2005).

Second, a series of matched within-practitioner comparisons of competence and confidence beliefs in using recommended practices were conducted (third study objective) using the participants' item ratings of their competence and confidence beliefs, the two subscale dimensions (competence and confidence), and total scale scores as the dependent variables. Student's t-test and Cohen's d effect sizes were used to determine if the two types of beliefs were similar or different.

Third, the relationship between practitioner competence and confidence beliefs and judgments of parent involvement (our fourth study objective) was evaluated using a series of Spearman Rank Correlation analyses.

## **Results**

The results are described in relation to the four main study objectives: (1) the content validity of the CCS, (2) the psychometric properties results for the CCS, (3) the results of the comparison of the practitioners' judgments of their competence and confidence in using six different kinds of recommended practices, and (4) the results for the relationships between practitioners' competence and confidence beliefs and their judgments of parent involvement.

### **Content Validity**

As reported in the procedure subsection, the CCS was translated into Spanish so that it was conceptually equivalent to the English version and understandable to ECI practitioners. Furthermore, the Spanish version of the CCS was subjected to expert judgment to ensure content-based validity.

Based on the experts' judgments, seven items were reworded or modified to improve their readability or to be more consistent with Spanish ECI. For example, the timeframe for achieving IFSP objectives (six months or less) was changed to "in the stipulated timeframe". Another change was made for an instructional practice item ("prompting and prompt fading procedures" was changed to "provide appropriate supports and aids"). One practice domain was adapted to match the technical language to which practitioners in Spain are accustomed (the term *instructional practices* was changed to *educational practices*; Division for Early

Childhood, 2014). Additionally, the Likert scale was modified to range from never (1) to always (5) to coincide with other measurement instruments the practitioners had been asked to complete.

The experts also expressed concern about several other items but were maintained in the administration of the scale for subsequent evaluation: Redundant items that only introduced small variations (e.g., natural learning environment items) and items that deviated from the construct to be measured (e.g., educational practices item: "It makes me feel good when I see parents using child-initiated or child-directed learning activities").

### Psychometric Properties of the CCS

#### Item Reduction and Factor Structure

Based on initial statistical analyses (means, standard deviations, and skewness), six items were eliminated from the original scale: two competence items (assessment and IFSP practices) and four confidence items (teaming, IFSPs, educa-

tional practices, and natural environment practices). As a result, the Spanish version of the CCS included 18 items.

To examine the structure of the CCS, a two-factor CFA was performed, starting from the structure of the original scale (Bruder et al., 2011). The results reported below indicated that there was a good fit of the model to the data. An acceptable value was reached in the  $\chi^2/df$  statistic (1.38; Wheaton et al., 1977). RMSEA was .05 (90% CI = .03, .07), which is indicative of a close fit (Browne & Cudeck, 1992). SRMR was .06, which also indicated a reasonable fit (Thompson, 2004). TLI was .90 and the CFI was .91, which were indicative of a good fit (Marsh et al., 2004).

Table 1 shows the distribution of items by dimension and their factor loadings. The standardized factor loadings were all statistically significant and ranged between .35 (item 4 – Confidence: to identify children's interest) and .74 (item 12 – Competence: families recognize and use their strengths). The appendix shows a translated sample of CCS items in the final Spanish version of the scale.

**Table 1**

*Descriptive Statistics and Confirmatory Factor Analysis Standardized Factor Loadings for Each Item of the Spanish Version of the CCS (N = 130).*

Practice domain	Item	Min.	Max.	M	SD	S	K	FL	SE
Competence									
Family-Centered Practices	1	3	5	3.67	.57	.17	-0.60	.53**	.067
	12	1	5	3.54	.68	-.28	0.79	.74**	.058
Teaming and Collaboration	3	2	5	3.68	.69	-.05	-0.20	.58**	.068
	14	3	5	4.33	.67	-.52	-0.73	.40**	.084
Assessment Practices	5	3	5	4.18	.47	.50	0.57	.47**	.083
IFSP Practices	7	1	5	3.45	.66	-.31	0.77	.70**	.062
Educational Practices	9	3	5	3.81	.58	.04	-0.24	.63**	.053
	16	2	5	3.53	.55	-.11	-0.66	.51**	.077
Natural Environment Practices	11	2	5	3.55	.56	.06	-0.79	.45**	.088
	18	2	5	3.81	.57	-.51	1.03	.47**	.069
Confidence									
Family-Centered Practices	15	3	5	4.10	.48	.28	1.16	.47**	.081
	17	3	5	3.88	.58	-.04	0.12	.61**	.059
Teaming and Collaboration	2	2	5	3.38	.67	-.01	-0.15	.57**	.064
Assessment Practices	4	2	5	4.03	.65	-.38	0.62	.35**	.087
	13	2	5	3.96	.59	-.22	0.68	.51**	.076
IFSP Practices	6	1	5	3.43	.74	-.56	1.45	.62**	.065
Educational Practices	8	2	5	3.38	.57	.25	-0.29	.44**	.093
Natural Environment Practices	10	2	5	4.13	.73	-.33	-.628	.44**	.089

*Note.* CCS = Early Childhood Intervention Practitioner Competence and Confidence Scale; IFSP = Individual Family Service Plan; S = Skewness; K = Kurtosis; FL = Factor Loading; SE = Standardized Error

\*\*  $p = .000$

#### Reliability

The reliability of the CCS subscales and total scale scores was determined in several ways (internal consistency and test-retest stability). The study authors first estimated internal consistency using Cronbach's alpha coefficient. Cronbach's alpha was .81 (95% CI = .76, .86) for the competence dimension, .73 (95% CI = .66, .80) for the confidence dimension, and .88 (95% CI = .84, .90) for the full scale.

The internal consistency of the CCS was also examined in terms of the correlation between the item scores and the different dimensions of the scale. Most of the items correlated significantly with one other. One hundred and nine (109) weak correlations were found ( $M = .28$ ,  $SD = .06$ , Range .01 – .39) and 14 moderate correlations were found ( $M = .45$ ,  $SD = .04$ , Range .40 – .52). The correlation between the competence dimension and the confidence dimension was positive and significant ( $r = .73$ ,  $p = .000$ , 95% CI = .63, .80).

The test-retest stability was estimated using the intraclass correlation coefficient between the scores of the scale administered on two occasions three months apart. The intraclass correlation coefficient was .77 ( $p = .000$ , 95% CI = .52, .89) for the competence dimension, .61 ( $p = .008$ , 95% CI = .17, .81) for the confidence dimension, and .78 ( $p = .000$ , 95% CI = .53, .90) for the total scale score.

#### *Convergent Validity*

The convergent validity of the CSS was determined by correlating the scale CCS scores and the practitioner's self-efficacy beliefs measure (Lamorey & Wilcox, 2005). The results showed a significant positive correlation between the two measures ( $r = .52$ ,  $p = .000$ , 95% CI = .37, .64 for the competence dimension;  $r = .53$ ,  $p = .000$ , 95% CI = .39, .65 for the confidence dimension, and  $r = .55$ ,  $p = .000$ , 95% CI = .42, .66 for the total scale), confirming the convergent validity of the CCS.

#### **Practitioners' Competence and Confidence Belief Appraisals**

Table 1 shows the means, standard deviations, range of responses, skewness, and kurtosis for each scale item and each scale dimension of the CCS. The mean scores ranged from 3.43 (item 6) to 4.33 (item 14). The competence items had a mean score of 3.76 ( $SD = 0.37$ ), and the confidence items had a mean score of 3.79 ( $SD = 0.37$ ). The mean score for the total scale was 3.77 ( $SD = 0.35$ ).

The comparisons between the practitioners' competence and confidence scores were made using Student's  $t$ -test. There was no statistical difference between the two competence and confidence subscale scores ( $t = 1.37$ ,  $p = .175$ ). There were differences between the competence and confidence scores for five practice recommended practices which ranged from medium to large ( $t = 9.39$ ,  $p = .000$ ,  $d = 0.47$  for family-centered practices;  $t = 10.30$ ,  $p = .000$ ,  $d = 0.68$  for teaming and collaboration practices;  $t = 3.69$ ,  $p = .000$ ,  $d = 1.00$  for assessment practices,  $t = 6.44$ ,  $p = .000$ ,  $d = 0.52$  for educational practices, and  $t = 6.71$ ,  $p = .000$ ,  $d = 0.75$  for natural environment practices; Dunst & Hamby, 2012). The largest difference between practitioner's competence and confidence appraisals was found in the assessment practices domain and the smallest difference between subscale scores was found in the family-centered practices domain. No significant differences were found between competence and confidence appraisals regarding the IFSP domain ( $t = 0.31$ ,  $p = .760$ ).

#### **Relationship Between Practitioners' Beliefs and Parent Involvement**

In order to examine the relationship between practitioner competence and confidence beliefs in using recommended practices and judgments of parent involvement in ECI

(fourth objective), Spearman Rank Correlation analyses were conducted between the CCS scores and parent-involvement scores. A statistically significant positive correlation was obtained between the total CCS score and practitioners' judgments of parent involvement ( $r = .46$ ,  $p = .000$ , 95% CI = .32, .58). Practitioners who had high scores on the CCS also reported high scores on the parent involvement measure. A statistically significant positive correlation was also found between both CCS subscales and parent involvement ( $r = .48$ ,  $p = .000$ , 95% CI = .34, .60 for competence and  $r = .37$ ,  $p = .000$ , 95% CI = .21, .51 for confidence).

#### **Discussion**

This study aimed to: (1) describe the adaptation and validation of the CCS for use in Spain, (2) examine the psychometric properties of the Spanish version of the CCS, (3) compare practitioners' judgments of competence and confidence in using six recommended practices, and (4) to examine the relationship between practitioner competence and confidence beliefs in using recommended practices and judgments of parent involvement in ECI.

Regarding the first and second objectives, the adaptation and validation process, and the results from the analysis of the psychometric properties of the Spanish version of the CCS indicated satisfactory reliability and validity indices (Irvin et al., 2018). These results indicate that the version of the scale described in this paper can be used in Spain to assess the competence and confidence judgments of ECI practitioners using family-centered practices, teaming and collaboration practices, assessment practices, IFSP practices, educational practices, and natural environment practices.

Similar to the original scale (Bruder et al., 2011), the items on the validated version of the CCS in this study are organized into two dimensions: Competence and confidence. In the Spanish version of the scale, the competence dimension includes 10 items, and the confidence dimension includes 8 items. Both dimensions include items related to the same recommended ECI practices.

In relation to the third study objective, on the one hand, the practitioners judged themselves as more confident than competent in using family-centered and natural environment practices. On the other hand, the practitioners' judgments of their teaming and collaboration practices, assessment practices, and educational practices were more competent than confident. Our findings are partially consistent with previous research which indicates that practitioners tend to judge themselves as more confident than competent (see, for example, Abbitt & Keltt, 2004; Gürbüzürk & Sad, 2009; Bruder et al., 2013). However, Bruder et al. (2011) found that practitioners' confidence beliefs are sometimes stronger than those of confidence beliefs (see also Francois, 2020). For example, Bruder et al. (2011) reported that practitioners judged themselves as more competent than confident when using teaming and collaboration practices.

Placed along a continuum, practitioners judged themselves as most competent in using teaming and collaboration practices and assessment practices, and the least competent in using IFSP practices. In contrast, the practitioners judged themselves as most confident in using assessment practices and family-centered practices, and the least confident in using educational practices and teaming and collaboration practices. These results provide an overview of practitioners' self-efficacy and allow guiding specific actions to improve their competence and confidence by, for example, providing in-service capacity-building professional development opportunities (Bruder et al., 2013; Dunst et al., 2015; Francois, 2020). Spanish practitioners have expressed the need to feel more competent and confident in using ECI-recommended practices (Gràcia et al., 2019; Vilaseca et al., 2019).

With respect to the last study objective, a statistically significant relationship was found between practitioners' competence and confidence beliefs and their judgments of parent involvement (Strauss et al., 2015; Tully et al., 2018). Practitioners who reported stronger competence and confidence for different kinds of ECI-recommended practices also indicated that they more often used strategies with family members to promote active child participation in everyday activities and child learning and development while engaged in the activities. Our results suggest that involving parents in ECI may be related to a particular set of recommended practices (e.g., family-centered practices, teaming practices, IFSP practices, educational practices) that when appropriately used, result in increased parent involvement (Mas et al., 2020) leading to positive family and child outcomes (Ancell et al., 2018; Ma et al., 2016; Strauss et al., 2013; Vanderveen et al., 2009). Consequently, ECI practices should be understood holistically (Division for Early Childhood, 2014).

## Conclusions

In summary, our study (1) provides preliminary evidence regarding the psychometric properties of the Spanish version of the CCS, (2) represents the first measurement and comparison of practitioners' competence and confidence in using ECI practices, (3) identifying which practices practitioners feel more competent or confident, and (4) empirically establish a relationship between practitioners' competence and confidence belief appraisals in using recommended practices and judgments of parent involvement.

The Spanish version of the CCS may have practical implications for different purposes. This scale may help raise practitioners' awareness of their competence (knowledge and skills), and confidence in using different ECI-recommended practices. Likewise, this scale can be used to identify training needs in specific ECI-recommended practices by measuring differences in practitioners' self-efficacy appraisals.

Future studies carried out with this scale should include discriminant validity analyses and second-order confirmatory factor analyses (as done in the original version study; Bruder et al., 2011) in such a way that the scale has more discriminatory power. Studies with more representative samples should be carried out to conduct the above-mentioned analysis, and to determine whether the results of this study can be replicated.

Regarding research related to competence and confidence beliefs, more studies are needed to understand the role these beliefs play in the adoption and use of ECI-recommended practices and parent involvement. It would be valuable to analyze practitioners' judgment of competence and confidence in specific ECI practices related to the use of the same practices. Research is also needed to establish the strength of the relationships between these beliefs, together with other ECI-related variables, and the use of different types of ECI practices (Dunst et al., 2020). Moreover, it is important to continue analyzing how certain capacity-building professional development practices influence practitioners' competence and confidence (Dunst et al., 2015). This research would allow methods and procedures to improve practitioners' preparation and the use of recommended practices with fidelity.

Finally, the results of this study add to the body of research that relates to the assessment of practitioners' competence and confidence and use of ECI recommended practices (Dunst et al., 2020; Trivette et al., 2012) and which particular practices are related to increased parent involvement (Tully et al., 2018). To involve parents in ECI, practitioners need knowledge and skills (competence), and a sense of confidence. Competence and confidence improvement is one outcome of effective training that improves one's ability to use the practices that are the focus of the scale (Bruder et al., 2013). Therefore, there is a need for evidence-based capacity-building professional development proposals (García-Ventura et al., 2021; Mas et al., 2020). Capacity-building professional development has been related to an increase in practitioners' competence and confidence and the use of different ECI-recommended practices (Bruder et al., 2013; Dunst et al., 2019, 2020; Dunst & Bruder, 2014; Elek & Page, 2018; Turner et al., 2011; Xie et al., 2017).

## Limitations of the Study

This study has at least two limitations that need to be considered when interpreting the results. First, the study was conducted using a convenience sample, although the participants were recruited from various ECI centers in three autonomous communities to increase representativeness. Future studies should include a probability sampling and gather more information about practitioners'

background variables (e.g., actual use of ECI practices, recommended practices training) and ECI center characteristics (e.g., staff size, program philosophy). Second, parent involvement was measured with only a one-item measure. Although parent involvement has previously been measured with a single-item scale in other studies (Dunst et al., 2014; Mas et al., 2020), a more exhaustive instrument could enable a detailed analysis of the relationship between the study variables. Moreover, future studies

should include the judgments of families on their parent involvement or even observational measures of this variable.

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## Appendix

**Table 2**

*Translated Examples of the Spanish Version of the CCS Items.*

Practice Domain	Type of self-efficacy appraisal	
	Competence item	Confidence item
Family-Centered Practices	1. I am able to get families I work with in obtaining needed supports and resources.	15. Getting families to talk to me about what is important for them comes easy to me.
Teaming and Collaboration	14. Jointly planning and implementing interventions with other professionals ensures that the children I work with get the right kind of practices.	2. Getting parents and other interventionists to be actively involved in the IFSP development and implementation comes easy to me.
Assessment	5. I am able to identify the strengths and needs of the children I work with.	13. I feel sure my assessments of children's and family's strengths, needs, and concerns are accurate.
IFSP	7. I am able to get families I work with to be key players identifying IFSP outcomes for their children and themselves.	6. Writing IFSP children's outcomes that are functional and meaningful is easy to me.
Educational Practices	16. My efforts getting parents and other caregivers to promote child engagement with people and objects are successful.	8. It is easy for me to get parents and other caregivers to provide appropriate supports and aids to their children to promote their child's development
Natural Environment	11. I am able to get parents I work with to use natural learning environments (e.g., daily family or community routines, learning opportunities)	10. I believe that children I work with really benefit from everyday natural learning opportunities.