

Validation of the Emotional and Social Parenting Competence Scale for Parents of Adolescents (ECOPES-A)

Validación de la Escala de Competencias Parentales Emocionales y Sociales para Padres y Madres con Adolescentes (ECOPES-A)

Validação da Escala de Competências Parentais Emocionais e Sociais para Pais e Mães com Adolescentes (ECOPES-A)

父母与青少年情感和社会技能量表 (ECOPES-A) 的验证

التحقق من صحة مقياس الكفاءات الأبوية العاطفية والاجتماعية للأباء والأمهات مع المراهقين (ECOPES-A)

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Abstract

Adolescence is traditionally understood as a developmental stage that challenges family dynamics and coexistence. At present, such challenges may be heightened due to current social and technological challenges. Effective assessment of parental competences for addressing such challenges is desirable to support, were needed, the introduction of further intervention measures, such as parenting programs. The aim of the present study was to validate the Emotional and Social Parenting Competence Scale for Parents of Adolescents (ECOPES-A), given the importance of having up-to-date instruments available to address this issue. A random sample of 1,422 Spanish parents of teenagers participated in the present study. Exploratory (EFA) and confirmatory factor analyses (CFA) were performed following a cross-validation process. Multi-group confirmatory factor analysis (MGCFAs) was applied to test the model's factorial invariance as a function of the sex of parents. Twelve items explaining 46.26% of the variance were selected. Items were distributed according to four factors, namely, F1-Self-Regulation, F2-Assertiveness and self-esteem in the parenting role, F3-Power assertion for conflict resolution, and F4-Promotion of child's self-esteem through assertive communication. Adequate reliability was determined for all factors and for the overall scale. The model presented good fit, regardless of the sex of the parent respondent, and MGCFAs revealed strict factorial invariance suggesting that the tool is appropriate for both fathers and mothers. The scale may be useful for identifying parental support needs and for evaluating evidence-based parenting programs.

Keywords: Validation, Scale, Parenting Competences, Adolescents, Positive Parenting Programs.

Resumen

La adolescencia se ha considerado tradicionalmente una etapa difícil para la convivencia familiar. Actualmente esta dificultad puede verse incrementada por los importantes cambios y retos sociales y tecnológicos. Por ello, conviene identificar las competencias parentales con adolescentes desde un enfoque proactivo, para introducir, si es el caso, medidas de intervención preventivas como programas parentales. A este respecto, el objetivo de este estudio fue validar la Escala de Competencias Parentales Emocionales y Sociales para Padres y Madres con Adolescentes (ECOPES-A), con el fin de incrementar el número de instrumentos actualizados disponibles. En el estudio participó una muestra aleatoria de 1.422 madres y padres de adolescentes. Se efectuó análisis factorial exploratorio (AFE) y confirmatorio (AFC) con validación cruzada, así como análisis factorial confirmatorio multigrupo (AFCM) para probar la invarianza factorial del modelo en función del sexo. Se identificaron doce ítems que explican el 46,26% de la varianza, distribuidos en cuatro factores: F1-Autorregulación, F2-Autoestima y asertividad con la función parental, F3-Imposición en la resolución de conflictos, y F4-Promoción de la autoestima en los hijos e hijas a través de la comunicación asertiva. La fiabilidad resultó adecuada para cada factor y para la escala total. El modelo presentó un buen ajuste, tanto para padres como para madres, y el AFCM mostró invarianza factorial estricta, por lo que la escala se podría aplicar a ambas figuras parentales. La escala puede resultar útil tanto para identificar necesidades de orientación familiar, como para evaluar programas de parentalidad positiva basados en evidencias.

Palabras clave: Validación, Escala, Competencias parentales, Adolescentes, Programas de Parentalidad Positiva.

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Resumo

Tradicionalmente, a adolescência é considerada uma fase difícil para a convivência familiar. Atualmente, esta dificuldade pode ser agravada por grandes mudanças e desafios sociais e tecnológicos. Por conseguinte, as competências parentais em relação aos adolescentes devem ser identificadas a partir de uma abordagem proativa, para introduzir, se for o caso, medidas de intervenção preventivas, tais como programas parentais. Neste sentido, o objetivo deste estudo foi validar a Escala de Competências Parentais Emocionais e Sociais para Pais e Mães com Adolescentes (ECOPES-A), de forma a aumentar o número de instrumentos atualizados disponíveis. O estudo envolveu uma amostra aleatória de 1422 mães e pais de adolescentes. Realizou-se uma análise fatorial exploratória (AFE) e confirmatória (AFC) com validação cruzada, bem como uma análise fatorial confirmatória multigrupo (ACFM) para testar a invariância fatorial do modelo em função do sexo. Foram identificados doze itens que explicam 46,26% da variância, distribuídos por quatro fatores: F1-Autorregulação, F2-Autoestima e assertividade com a função parental, F3-Imposição na resolução de conflitos, e F4-Promoção da autoestima nos filhos e nas filhas através da comunicação assertiva. A fiabilidade foi adequada para cada fator e para a escala total. O modelo demonstrou um bom ajuste, tanto para pais como para mães, e a AFCM demonstrou uma invariância fatorial estrita, pelo que a escala pode ser aplicada a ambas as figuras parentais. A escala pode ser útil tanto para identificar necessidades de orientação familiar como para avaliar programas de parentalidade positiva baseados em evidências.

Palavras-chave: Validação, Escala, Competências Parentais, Adolescentes, Programas de Parentalidade Positiva.

摘要

青春期传统上被认为是家庭共处的困难阶段。当前，由于重要的社会和技术变革和挑战，这一困难可能会加剧。因此，有必要从积极的角度识别父母在与青少年相处时的能力，以便在必要时引入预防性干预措施，如父母教育的计划。在此背景下，本研究的目的是验证《父母与青少年情感和社会技能量表 (ECOPES-A)》，以增加可用的更新工具的数量。

本研究采用了一组随机样本，包括1,422名青少年的父母。进行了探索性因子分析 (EFA) 和验证性因子分析 (CFA) 并进行了交叉验证，同时还进行了多组验证性因子分析 (MG-CFA) 以测试模型的性别不变性。共确定了十二个项目，解释了46.26%的方差，分为四个因素：F1-自我调节，F2-与父母职能相关的自尊和自信，F3-在解决冲突中的强制性，F4-通过自信的沟通促进子女的自尊。每个因素和总量表的信度均较高。模型对于父母双方均表现出良好的适配度，MG-CFA显示严格的因子不变性，因此该量表可以适用于父母双方。

该量表不仅可以用于识别家庭指导需求，还可以用于评估基于证据的积极养育计划。

关键词: 验证、量表、育儿能力、青少年、积极育儿计划。

ملخص

تعتبر المراقبة تقليدياً مرحلة صعبة في الحياة الأسرية. ويمكن تزداد هذه الصعوبة حالياً من خلال التغيرات والتحديات الاجتماعية والتكنولوجية الهامة. ولذلك، فمن المستحسن تحديد مهارات الأبوة والأمومة لدى المراهقين من خلال نهج استباقي لإدخال تدابير التدخل الوقائي، إن أمكن، مثل برامج الأبوة والأمومة. في هذا الصدد، كان الهدف من هذه الدراسة هو التحقق من صحة مقياس الكفاءات الأبوية العاطفية والاجتماعية للأباء والأمهات مع المراهقين (ECOPES-A)، من أجل زيادة عدد الأدوات المحدثة المتاحة. شاركت في الدراسة عينة عشوائية مكونة من 1422 من أمهات وأباء المراهقين. تم إجراء تحليل العامل الاستكشافي (EFA) وتحليل العامل التأكيدي (CFA) مع التحقق المتبادل، بالإضافة إلى تحليل العامل التأكيدي متعدد المجموعات (ACFM) لاختبار الثبات العاملي للنموذج تبعاً للجنس. وتم تحديد اثني عشر فقرة تفسر 46.26% من التباين، موزعة على أربعة عوامل: F1- تنظيم الذات، F2- تقدير الذات والتأكيد مع الدور الوالدي، F3- الفرض في حل النزاعات، وF4- تعزيز تقدير الذات. في الأبناء والبنات من خلال التواصل الحازم. وكانت الموثوقية كافية لكل عامل وللحجم الإجمالي. قدم النموذج ملاءمة جيدة لكل من الآباء والأمهات، وأظهر ACFM ثباتاً عاملياً صارماً، لذلك يمكن تطبيق المقياس على كلا الوالدين. يمكن أن يكون المقياس مفيداً لتحديد احتياجات الإرشاد الأسري وتقييم برامج التربية الإيجابية المبنية على الأدلة.

الكلمات الدالة: التحقق من الصحة، المقياس، كفاءات الأبوة والأمومة، المراهقين، برامج الأبوة والأمومة الإيجابية.

Introduction

The adolescent developmental stage is characterised, amongst other things, by important biological, cognitive and socioemotional changes (Banati, 2020). It also represents a hugely susceptible stage to both external social influences, due to ongoing changes and social and technological challenges (Herry et al., 2021), and internal changes that impact the family setting (Ettekal & Agans, 2020; Koller et al., 2019). Like all life transitions, it carries with it a number of challenges and risks, such as emotional instability and family conflict, which do not necessarily have to be dysfunctional. The theory of Positive Youth Development (PYD) (Benson et al., 2006) understands these challenges as opportunities to grow in maturity and acquire new skills. Relationships between parents and their children changes progressively from being imbalances and controlled by parental authority during childhood, to being more balanced during the period of adolescence (Laursen & Collins, 2004). Nonetheless, these relationships may also be more conflictive at this stage due to, amongst other factors, the need for adolescents to gain greater individual autonomy, determine their own identity, challenge family norms (Kerr & Stattin, 2000) and the continuous social changes to which the family dynamic must constantly adapt. Despite this, the family nucleus continues to be their main context of reference (Ceballos-Vacas, 2006; Yeung et al., 2017), making it capable of contributing to their positive development when parents promote their individual potential using effective parenting competencies (Skeen et al., 2021).

Parental competencies

Being the parent of an adolescent may be perceived by parental figures as more complicated than it was during prior evolutionary stages. Mastrotheodoros et al. (2020) notes that, during adolescence, processes pertaining to the internalisation and externalisation of problems take place that affect family functioning. Schulz et al. (2021)

highlights that negative emotional states of parental figures, for instance due to anxiety and depression, and the external manifestations of such states, for instance, through aggressive behaviour, increase family stress and increase tension in relationships. According to the transactional theory (Sameroff, 2009), this could, at the same time, cause adolescents themselves to experience stress and lead to non-desirable parental responses. This can give rise to a cycle in which parents and adolescents mutually reinforce processes of inadaptation (Di Giunta et al., 2020). Serbin et al. (2015) found this to be the case in families containing adolescents from the general population who were characterised as having a medium or high socioeconomic status and were not identified as vulnerable. Previous research conducted by the present research team (Martínez-González, et al., 2007) also identified similar outcomes in families from the general population. For this reason, it would be useful to examine the competencies of parents of adolescents from this population from a promotion and prevention perspective, as opposed to only examining vulnerable families or those at psychosocial risk (Kumpfer & Alvarado, 2003; Lunkenheimer et al., 2020).

Azar et al. (1998) have conceptualised parental competencies to include the ability of parents to meet the developmental needs of their children, whilst paying special attention to their emotional and social abilities. These authors established five categories of parental competencies from the preventive perspective of child abuse. Firstly, “educational” competencies ensure children are provided with an environment in which they feel safe and protected from both a physical and emotional point of view. Secondly, “socio-cognitive” competencies are associated with having clear expectations regarding the expected behaviour of both parents themselves and children. Thirdly, “emotional self-control” is important for maintaining emotional balance, whilst, fourthly, skills that enable “coping with stress”, such as relaxation, being positive and finding the positive, help to

resolve conflicts and overcome challenges. Finally, “social” competencies enable one to relate appropriately with others and resolve interpersonal problems through empathy and communication.

Parental figures differ in the way they perceive themselves and their own competencies with adolescents (Valencia-Chacón, 2022). Some parents may believe that they possess abilities to positively interact, set appropriate norms for coexistence and provide satisfactory support, whilst others may believe that they lack such abilities. According to Owens (1994), perceived competence can be understood as the belief an individual has regarding their capacity in a determined ambit. Differences between the perceived competence of parents and their actual competence or behaviour can be viewed in terms of that outlined by Tafarodi & Milne (2002) and mark the difference between feeling competent and satisfied, and not, with both being components of self-esteem. Feeling competent is associated with what individuals are capable of doing as a function of their abilities, whilst satisfaction is associated with how individuals value themselves. In this sense and in accordance with PYD (Lerner et al., 2003), the way in which parents perceive their own parenting competencies could have repercussions on the way in which they shape their adolescent children’s behaviour towards them and on whether they are able to support positive development. Thus, it would be of interest to examine both parent perceptions of their own competence (Valencia-Chacón, 2022) and their actual competence in terms of parenting behaviour. In this sense, the scale presented in the present study integrates items from both areas. For example, parents are asked whether they discuss with their adolescent children the positives they see in them (behaviour), whilst they are also asked whether they hold a good opinion of themselves about the way in which they educate their children (self-perception). Findings may help to identify strategies for motivating parents with poor perceptions of their parenting competence, as a means

towards improving their relationship with their children. This is in line with the Convention on the Rights of the Child (United Nations, 1989), in addition to the European Recommendation of the 14th of June, 2021 for the European Child Guarantee (European Commission, 2021) and Recommendation (2006)/19 of the European Council for Policies Supporting Positive Parenting (European Council, 2006), which emphasises the need to evaluate parenting competencies and introduce educational programs that help to improve family coexistence.

Evidence-based programs for parenting competencies

Waters and Sroufe (1983) and Masten and Curtis (2000) have defined parenting competencies as the abilities and attitudes possessed by parents that help them to respond to the needs of their children in line with their personal characteristics, developmental stage and family circumstances. In order to promote these abilities, programs exist that provide evidence based findings (Devaney et al., 2021) incorporating the positive parenting approach (Rodrigo, 2022) and the theory of positive youth development (Benson et al., 2006).

Evidence-based parenting programs are supported through the application, amongst other tools, of validated measurement scales that evaluate both the educational competencies of parents and the effectiveness of programs to promote them. This family oriented approach has been employed in Spain, despite little research having been conducted in this regard (Hidalgo et al., 2023; Martínez-González et al., 2016; Rodrigo, 2016) and few up-to-date techniques being available to support evaluation, particularly, in the context of parenting and adolescents. Existing international literature regarding family assessment has examined the use of self-report instruments for analysis of parental behaviour (Farkas-Klein, 2008; Reed-Ashcraft et al., 2001), parenting competencies (Johnston & Mash, 1989) and other aspects of the family dynamic, such as communication, educational style, satisfaction, stress and family conflict

(Barnes & Olson, 1982; Díaz-Herrero et al., 2010). Perusal of available instruments reveals that many focus on educational styles and the challenges faced by families in relation to the education of their children from a clinical and therapeutic standpoint (Neabel et al., 2000; Ponzetti, 2016). Fewer up-to-date validated tools exist that consider parenting competencies from a global preventive perspective and are available for use by families from the general population living in normalised circumstances (Spot, 2009). In Spain, some tools are adapted from those used in international studies, which may imply a degree of cultural and contextual bias (Rodrigo et al., 2015), whilst others focus on specific at-risk family groups. Few tools address the emotional competencies that are so key to the role of parents (Bayot, et al., 2005; Bisquerra & López, 2021; García-Díaz & Martínez-González, 2018; Martínez-González et al., 2016; Páez et al., 2006).

The European Council (2006) and the European Family Support Network (2020) recommends that parenting competences be explored in parents from the general population whilst taking a preventive and universal perspective, with the aim of supporting effective parenting. Similar recommendations emerge from Organic Law 8/2021, of the 4th of June, for Basic Protection from Violence during Childhood and Adolescence (Spanish Government, 2021) and Agenda 2030 for Sustainable Development adopted by the General Assembly of the UN (2015). This is particularly relevant during the stage of adolescence. In this sense, the Emotional and Social Parenting Competence Scale for Parents of Adolescents (ECOPES-A) presented in the present study serves to address this issue. The aim of the present study was to validate this scale in order to increase the number of up-to-date techniques available to identify the counselling needs of parents with adolescent children and evaluate evidence-based parenting programs directed towards families with children at this evolutionary stage.

Method

Participants

A representative sample from the population of parents from Asturias participated in the present study. Sample selection considered diverse family sociodemographic characteristics such as the sex of parents, educational level, family type, home address, child's age and type of school attended to by the child. The aim of this was to enable subsequent administration of the resulting scale with diverse families from the general population. The number of families with adolescent children aged between 12 and 18 years was identified from a digital registry, leading to a study population of 51,936 families. Error was set at 5% and a 99% confidence error was established for sample selection, resulting in 656 families to be analysed. Given that only a 30% completion rate was expected based on prior research in this field of study, the required sample size was tripled to 1,968 families, respecting the populational distribution of the sociodemographic variables of child's age, geographic region and school type. The aim of this was to ensure that the minimum desired sample size would be attained. The survey was administered within individual family units to both the mother and father separately, with the aim of examining the robustness of the resulting scale when administered to both sexes. The final sample was composed of 752 families and 1,422 questionnaires (752 mothers and 670 fathers living together in the same family unit with 670 of the aforementioned 752 mothers). Adolescent children from these family units were undertaking compulsory secondary education (12-16 years; 64,8%) or baccalaureate or vocational training (17-18 years; 35.2%), lived in rural (36.1%) or urban (63.9%) regions, and attended public (71.3%), mixed funding (16.8%) or private (11.9%) schools. The educational level of parents was distributed as follows: higher education (39.8% mothers; 33.1% fathers); baccalaureate or higher-level vocational training (36.9% mothers; 40.9% fathers); compulsory education (23.3%

mothers; 26,0% fathers). The majority of parents were aged between 42 and 53 years (74.5% of the overall sample; 74.9% mothers; 74.1% fathers). The predominant family type was two-parent (82.8% of the overall sample; 79.8% mothers; 86.3% fathers), followed by single-parent (6.2% of the overall sample; 9.4% mothers; 2.6% fathers), reconstituted (3% of the overall sample; 3.1% mothers; 2.9% fathers) and extended (3.5% of the overall sample; 3.1% mothers; 3.2% fathers). Of the overall sample, 75.8% were in paid employment outside of the home (84.8% fathers; 67.8% mothers).

Instrument and procedure

The present study was based on the original parenting competencies questionnaire included within the Program-Guide for the Development of Emotional, Education and Parenting Competencies, published by the Ministry of Health and Social Policy (Martínez-González, 2009) (www.familiasenpositivo.org). The aim of the study was to validate the questionnaire with families comprising adolescent children. The original questionnaire permits analysis of both parenting competencies and efficacy of the program. It can be administered as a baseline measure in an initial session and as a post-test measure in a final session, or in other moments throughout training, or in subsequent actions to follow-up, together with other tools and professional information. The Program-Guide introduced above is a professional family intervention resource designed to improve the parenting competencies of parents towards their children from birth to adult age. It takes a preventive and community-based approach with families from the general population (Martínez-González et al., 2016, 2022).

Items of the original questionnaire were elaborated after consulting specialised literature on parenting competencies and family assessment (Rodrigo, 2022). The scale, which is detailed below, includes a mix of positively and negatively framed items with regards to expected educational processes. Six theoretical dimensions are classified pertaining

to the parenting competencies developed in the aforementioned program. Dimension 1 refers to behavioural characteristics of children according to their evolutionary stage (example: “I find it difficult to understand the behaviour of my children”). Dimension 2 pertains to emotional self-regulation (example: “I know how to relax and control my emotions”), whilst dimension 3 described self-esteem and assertiveness for parenting duties (example: “I think that I am a good parent”). Dimension 4 corresponds to assertive communication (example: “I tell my children how their way of acting makes me feel”), whilst dimension 5 refers to conflict resolution (example: “when a conflict arises with my children, I tell them what must be done and the problem is dealt with”). Finally, dimension 6 pertains to norms and limits (example: “when my children disobey me, the best thing to do is to impose oneself to resolve the situation”). Specialised researchers in family assessment and educational measurement participated in the process of elaborating the present questionnaire. This served to verify both the relevance of questionnaire content and study dimensions, in addition to the quality and writing of items. Professionals working in family intervention were also involved, alongside teachers of early, primary and secondary education, and parents/grandparents who also provided information regarding the relevance, coherence and clarity of items. Following this, the preliminary instrument was administered to a pilot sample of families with children from birth to adult age and with diverse sociodemographic characteristics. A total of 138 parents with adolescent children aged between 12 and 17 years participated in the pilot study. This amounted to 45.10% of the overall sample, composed of 306 families with children from all evolutionary stages (Martínez-González et al., 2007). These parents participated in various issues of the Program-Guide. Completion of this process led to elaboration of the questionnaire included in the program. This questionnaire comprised items that are responded to along a four-point Likert scale (from 1 - totally disagree to 4 - totally agree). This questionnaire was then

analysed in the present study in order to be specifically validated with parents of adolescent children and reveal its factor structure. This scale comprises 40 initial items that are distributed according to the six aforementioned dimensions.

With regards to data collection in the present study, two instruments with language adapted to mothers and fathers, respectively, were administered separately in parallel. Families were reached through the secondary schools being attended by their adolescent children. School directors were informed prior to study start of the aim of the research and were provided with a formal invitation letter from the study coordinator. Schools agreed to participate by signing a written consent form. Next, selected student's parents were also informed about the aim of the research. To this end, two envelopes were given to students for them to take home. One contained the questionnaire to be completed by the mother and the other contained the questionnaire to be completed by the father. Responses were anonymised and identifiable only through a reference number that corresponded to the family unit. Both envelopes included information on the purpose of the research, guaranteeing data confidentiality and enclosing a consent form for completion by parents who desired to participate in the study. Participants were informed that data would only be used for the purpose of the research. Separate instructions were included for mothers and fathers regarding how to complete their respective questionnaires whilst considering their adolescent children. Instructions were the same regardless of whether respondents had one or more child at this stage, given that the aim of validating the scale was to identify parenting skills generally, without specifying specific characteristics of a specific child. Participants were informed that all questionnaire responses were to be kept anonymous and were requested to respond honestly. Following completion of both questionnaires by mothers and fathers separately, physical copies were enclosed within their respective envelopes and returned

to the school by the adolescent child to be picked up by a member of the research team. Study participation of both schools and parents was voluntary and free of remuneration. The present research adhered to all ethical criteria related with confidentiality, in accordance with Law 15/1999 pertaining to access, rectification, cancellation and opposition, Organic Law 3/2018, of the 5th of December, for the Protection of Personal Data and guarantee of digital rights, and EU Regulation (UE) 2016/679 of the European Parliament and Council, of the 27th of April, 2016, for Data Protection.

Data analysis

Preliminary analysis was performed of the study database in order to identify anomalies and missing cases which could, if left unchecked, limit later analysis. Such cases were replaced at random via the missing completely at random rest (MCAR) (Little, 1988). Normality of collected data was examined, alongside potential multicollinearity, removing items with correlations ≥ 0.90 (Abdelwahab et al., 2024). In order to examine scale structure and construct validity, classical test theory (CTT) (López-Pina & Veas, 2024) was followed and exploratory (EFA) and confirmatory factor analysis (CFA) was performed. For this, the initial sample was randomly divided into two sub-samples, comprising 696 and 726 participants, respectively. The first sub-sample included 334 fathers and 362 mothers, whilst the second comprised 336 fathers and 390 mothers. Exploratory factor analysis (EFA) was performed with SPSS on the first sub-sample employing the maximum likelihood extraction method (Ardiyansyah & Sodomaco, 2022), followed by promax rotation (Hendrickson & White, 1964). In order to verify test assumptions, sampling adequacy was estimated via the Kaiser-Meyer-Olkin (KMO) statistics (Kaiser, 1974) and Bartlett's test of sphericity (Bartlett, 1950). Items with factor loadings > 0.40 were retained. Confirmatory factor analysis (CFA) using maximum likelihood estimations was performed of the second sub-sample using

AMOS. This represents a cross-validation process. Combined absolute and relative fit indices were calculated in order to verify goodness of fit of the proposed model: (1) p-value associated with chi-squared (χ^2); (2) relationship between χ^2 and degrees of freedom (CMIN/DF); (3) goodness of fit index (GFI); (4) root mean square residual (SRMR); (5) root mean square error of approximation (RMSEA); and (6) comparative fit index (CFI) and incremental fit index (IFI). The following reference values were employed to determine good fit: χ^2/df lower than three (Kline, 1998); GFI higher than 0.95 (Hoelter, 1983); RMSEA and SRMR lower than 0.05 (Browne & Cudeck, 1993); and IFI and CFI higher than .90 (Bentler & Bonnet, 1980). In order to examine whether the model remained stable according to sex, confirmatory factor analysis was repeated with subgroups corresponding to mothers ($n = 752$) and fathers ($n = 670$), separately. It was hypothesised that the model would exhibit good fit in both cases and so multi-group confirmatory factor analysis (AFCMG) was performed to examine factorial invariance as a function of sex. This analysis was performed through a series of nested models, with each subsequent model being subjected to greater restrictions. In this sense, firstly, configural invariance was examined (same factor structure for all groups) (M1), followed by metric or weak invariance (factor loadings held even) (M2). Next, strong invariance was evaluated (factor loadings and intercepts held even) (M3) and, finally, strict invariance of the model was checked (factor loadings, intercepts and unique variances of items all kept even) (M4). In order to indicate model invariance, the change in CFI between successive invariance levels should be zero or lower than .01 (Cheung & Rensvold, 2002), whilst changes in RMSEA should be zero or lower than 0.015 (Chen, 2007). In addition, χ^2 was calculated but, due to its sensitivity to sample size, outcomes were not considered in the interpretation of outcomes (Wu et al., 2007). Finally, it was hypothesised that strict invariance would emerge between models due to the latent variable and not due to measurement bias (DeShon, 2004).

Results

Rates of missing values were between 0.8% and 2.8%. Outcomes from MCAR were $\chi^2 = 5010.875$, $df = 4250$ and $p = 0.000$, suggesting that missing data was not necessarily determined at random. Further, the Expectation-Maximisation (EM) statistic (Dempster et al., 1977; Pigott, 2001) was estimated. From this, after checking the normality of data pertaining to all items, six items were eliminated for not satisfying this condition, leaving a final number of 34 items to be analysed. Multicollinearity did not emerge for any items (correlations < 0.90). Exploratory factor analysis (EFA) indicated that 12 items should form the final scale, distributing items between four factors, with three items pertaining to each factor. Altogether, items explained 46.26% of variance in the data, with this being acceptable ($KMO = 0.739$; Kaiser, 1974). Bartlett's test of sphericity outcome was significant ($\chi^2 = 1982.029$; $df = 66$; $p = 0.000$). The final factors were: F1-Self-regulation (AR); F2- Self-esteem and assertiveness in the parental role (AA); F3-Imposition in conflict resolution (I) and; F4-Promotion of children's self-esteem through assertive communication (PAH) (Table 1).

Descriptive outcomes (Table 2) reveal that, on the one hand, the highest mean ratings pertain to F4-Promotion of self-esteem in children through assertive communication (PAH) and F2-Self-esteem and assertiveness in the parental role (AA). On the other hand, the lowest ratings were reported for F1-Self-regulation (AR) and F3-Imposition in conflict resolution (I), with the latter being evaluated through a negatively framed item (1 - always to 4 - never) so that non-imposing attitudes are valued as a parental competence. These lower ratings may imply that, in the case of F1, parents need more strategies to tackle stressful circumstances and, in the case of F3, the ability to solve problems with adolescents in a more constructive way is needed in order to avoid using imposition as a means of taking control.

Table 1. Exploratory factor analysis (EFA)

	F1-Self-regulation (AR)	F2-Self-esteem and assertiveness in the parental role (AA)	F3-Imposition in conflict resolution (I)	F4-Promotion of children's self-esteem (PAH)	Overall
N items per factor:	3	3	3	3	12
% total explained variance	22.31%	10.62%	8.22%	5.12%	46.26%
Item	Saturation				
<i>I know how to relax and control my emotions</i>	0.862				
<i>On a daily basis I relax and control myself when I am upset</i>	0.833				
<i>I know how to relax and control my emotions towards my children</i>	0.573				
<i>I have a good opinion of myself about the way I educate my children</i>		0.715			
<i>I think I am a good parent</i>		0.676			
<i>I have a good opinion of myself</i>		0.620			
<i>When my children disobey me, the best thing to do is impose myself to resolve the situation</i>			0.840		
<i>When a conflict arises with my children, I tell them what must be done and the problem is dealt with</i>			0.545		
<i>When my children try to get away with something in order to get something, I impose myself more to take control of the situation</i>			0.440		
<i>I tell my children how the way they act makes me feel</i>				0.687	
<i>On a daily basis, I tend to tell my children the positives I see in them</i>				0.599	
<i>I make my children see that they are capable of making decisions even though they are young</i>				0.538	

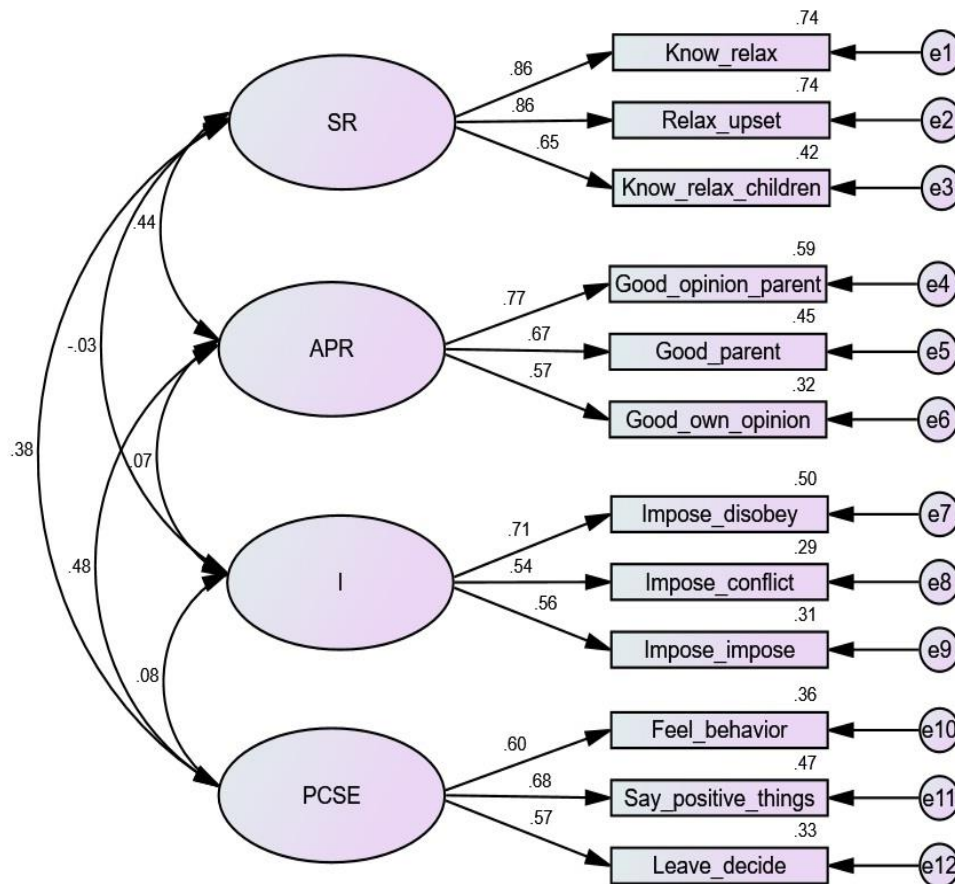
Table 2. Descriptive statistics pertaining to items selected to represent the four factors

	M	SD	Asymmetry	Kurtosis
<i>I know how to relax and control my emotions</i>	2.74	.719	.144	-.604
F1 <i>On a daily basis I relax and control myself when I am upset</i>	2.73	.710	.125	-.544
<i>I know how to relax and control my emotions towards my children</i>	2.71	.765	.126	-.638
<i>I have a good opinion of myself about the way in which I educate my children</i>	3.06	.776	-.354	-.601
F2 <i>I think I am a good parent</i>	3.17	.688	-.346	-.444
<i>I have a good opinion of myself</i>	3.03	.747	-.243	-.655
<i>When my children disobey me, the best thing to do is impose myself to resolve the situation</i>	2.43	.924	.213	-.792
F3 <i>When a conflict arises with my children, I tell them what must be done and the problem is dealt with</i>	2.13	.849	.625	-.039
<i>When my children try to get away with something to get what they want, I impose myself more to take control of the situation</i>	2.51	.850	.174	-.628
<i>I tell my children how the way they act makes me feel</i>	3.16	.863	-.687	-.454
F4 <i>On a daily basis, I tend to tell my children the positives I see in them</i>	2.96	.841	-.250	-.859
<i>I make my children see that they are capable of making decisions, despite them being young</i>	3.21	.797	-.648	-.425

The model produced using confirmatory factor analysis (CFA) demonstrated good fit to the proposed model ($\chi^2 = 109.359$ (48), $p < 0.000$; CMIN/df = 2.278; GFI = 0.976; TLI = 0.960; CFI = 0.971; RMSEA = 0.042; SRMR

= 0.039). Statistically significant factor loadings were found for all factors ($p < 0.01$), with standardised values higher than 0.40 (fig. 1).

Figure 1. Confirmatory factor analysis (sub-sample 2).



In order to examine whether the model remained stable as a function of sex, confirmatory factor analysis was repeated with the separate sub-samples of mothers (n = 752)

and fathers (n = 670). Obtained outcomes demonstrated good model fit in both cases (Table 3).

Table 3. Fit indices for fathers and mothers

	χ^2	df	p	χ^2/df	GFI	RMSEA	SRMR	CFI	TLI
Fathers	109.320	48	.000	2.278	.973	.044	.0371	.967	.955
Mothers	117.608	48	.000	2.450	.975	.044	.0393	.967	.955

In both samples, all items achieved adequate saturation within their respective factors (Table 4) and low correlations between the four factors were produced. This indicates

acceptable discriminate validity (r between 0.04 and 0.49 for fathers and r between 0.02 and 0.57 for mothers).

Table 4. Standardised CFA outcomes for fathers (F) and mothers (M) separately

Factor Item	F1		F2		F3		F4	
	Saturation							
	F	M	F	M	F	M	F	M
<i>I know how to relax and control my emotions</i>	.845	.864						
<i>On a daily basis, I relax and control myself when I am upset</i>	.860	.830						
<i>I know how to relax and control my emotions towards my children</i>	.640	.594						
<i>I have a good opinion of myself regarding the way in which I educate my children</i>			.716	.772				
<i>I think I am a good parent</i>			.638	.685				
<i>I have a good opinion of myself</i>			.601	.595				
<i>When my children disobey me the best thing to do is impose myself to resolve the situation</i>					.700	.747		
<i>When a conflict arises with my children, I tell them what must be done and the problem is dealt with</i>					.617	.528		
<i>When my children try to get away with something to get what they want, I impose myself more to take control of the situation</i>					.464	.555		
<i>I tell my children how the way they act makes me feel</i>							.676	.539
<i>On a daily basis, I tend to tell my children the positives I see in them</i>							.616	.680
<i>I make my children see that they are capable of making decisions, despite them being young</i>							.503	.578

Given that the four-factor model exhibited good fit, as much for fathers as for mothers, multi-group confirmatory factor analysis (MGCFA) was performed in order to examine factorial invariance of the model as a function of sex. Outcomes reveal strict factorial

invariance, given that no differences emerged in the fit of nested models. This outcome is presented in Table 5, which reveals that, in all cases, ΔCFI is lower than 0.01 and $\Delta RMSEA$ is lower than 0.015.

Table 5. Goodness of fit indices for all of the factorial invariance models examined, as a function of fathers and mothers.

Model	χ^2	df	χ^2/df	$\Delta \chi^2$	Δdf	p	CFI	ΔCFI	RMSEA	$\Delta RMSEA$
M1. Configural invariance	226.928	96	2.364			.000	.967		.031	
M2. Metric invariance	251.204	104	2.415	24.276	8	.000	.963	-.004	.032	.001
M3. Strong invariance	269.532	114	2.364	18.328	10	.000	.961	-.002	.031	-.001
M4. Strict invariance	288.586	126	2.290	19.054	12	.000	.959	-.002	.030	-.001

M1 = configural invariance; M2 = metric invariance; M3 = strong invariance; M4 = strict invariance; χ^2 = chi-squared; df = degrees of freedom; CFI = comparative fit index; ΔCFI = change in CFI; RMSEA = root mean square error of approximation; $\Delta RMSEA$ = change in RMSEA.

Discussion

Adolescence is generally perceived as a critical stage of personal development, with a large impact on family dynamics, which is further affected by constant change and social and technological challenges. Both the theory for positive youth development (Dimitrova & Wiium, 2021; Lerner et al., 2021) and the preventive approach of positive parenting in family intervention (Rodrigo et al., 2023) suggest that emotional and social parenting competencies are key for promoting family coexistence and youth development. Parenting programs applied from a prevention perspective provide valuable resources for the promotion of these parenting competencies (Rubio et al., 2020). In order to evaluate these programs, in addition to the aforementioned competencies, validated and up-to-date scales are needed that help to identify needs for parental counselling in professional ambits such as the educational setting, health and social services, and other related entities. Together with other data collection tools, such scales could be used to analyse intervention effectiveness when administered at baseline and follow-up, or at other moments of the training process, in addition to being used to evaluate long-term outcomes and program impact following intervention end. In this sense, the aim of the present study was to validate the Emotional and Social Parenting Competencies Scale for Parents of Adolescents (ECOPES-A) in order to develop an up-to-date technique to help identify parental needs at this evolutionary stage and gather evidence regarding the effectiveness of parenting programs.

After performing exploratory and confirmatory factor analysis, a scale comprising 12 items was produced that measured parenting competence as perceived by parents themselves and satisfaction with the parental role. This was in line with that proposed by Tafarodi and Milne (2002) which establishes self-perceived competence and satisfaction with oneself as components of self-esteem. Items were classified according to four factors that correspond to the categories of

parenting competencies proposed by Azar et al. (1998) for the prevention of child abuse and violence towards children. Namely, the first identified factor was denominated F1-Self-regulation (AR), in consonance with the competencies of “emotional self-control” and “coping with stress” established by Azar et al. (1998). This is an important competence for parents given certain tendencies towards sometimes exhibiting challenging behaviour and internalised problems such as anxiety and depression, or externalised problems such as aggressive behaviour (Van der Giessen & Bögels, 2018). Next, the second factor, F2-Assertiveness and self-esteem in the parental role (AA) is based on the category of “socio-cognitive competence” conceived by Azar et al. (1998). Through this competence, parents may establish positive expectations for themselves and their adolescent children, which will help them form positive mutual relationships. The third factor, F3-Imposition in conflict resolution (I), portrays the opposite of “social competence” as defined by Azar et al. (1998) and is related with constructive interpersonal problem solving strategies. Finally, F4-Promotion of children’s self-esteem through assertive communication (PAH), is equivalent to the idea of “educational competence” outlined by Azar et al. (1998) and helps parents to establish a family environment that is perceived by adolescents as emotionally safe. The factors supported through the present analysis also correspond to the theoretical dimensions of parenting competencies established in the original questionnaire and presented in the Program-Guide discussed earlier on which the scale examined here is based. Ten of the twelve items comprising these factors correspond to these dimensions. One novelty is that the item “when my children disobey me, the best thing to do is impose myself to resolve the situation”, originally housed within dimension 6-Norms and Limits, in the program, is relocated, in the present study, to lie within factor F3-Imposition in conflict resolution (I). This item, together with the other two that make up this factor, indicate an authoritarian approach towards resolving conflict with adolescent

children. The other two items, specifically, are “when a conflict arises with my children, I tell them what must be done and the problem is dealt with” and “when my children try to get away with something to get what they want, I impose myself to take control of the situation”. In this sense, this factor enables identification of parental needs for strategies to resolve conflicts in a more constructive way. Baumrind et al. (2010) found that adolescents from authoritarian families were substantially less competent and experienced greater difficulty adapting than families that used dialogue and negotiation. In support of this, Johnson et al. (2001) reported similar findings. One practical implication of these findings is that parents could be guided to score more highly in factor 3 by equipping them with democratic strategies based on assertive communication to better address conflicts with their adolescent children (Hidalgo-Troya et al., 2023). In contrast, the item “I make my children see that they are capable of making decision, despite them being young”, initially located by the original program that conceived it within dimension 5, conflict resolution, due to the potential of negotiation for resolving issues, was relocated following factor analysis to factor F4, promotion of children’s self-esteem through assertive communication (PAH). This new placement makes sense in consideration of the fact that, according to the theory of educational styles conceived by Baumrind (1991) and PYD (Kerr & Stattin, 2000), this parental behaviour acts to reinforce adolescent’s self-esteem by promoting assertiveness, autonomy and responsibility (Kuppens & Ceulemans, 2019).

The present research analysed data gathered from both fathers and mothers, revealing that the same factor structure underlies outcomes for both parents. A practical implication of this is that the same tool can be applied to both parents with slight adaptations to the language used from a gender perspective. Previously conducted studies with the same sample used in the present study (Martínez-González et al., 2021) revealed significant differences between mothers and fathers with regards to

competencies, finding higher perceived self-regulation amongst fathers compared with mothers when interacting with adolescent children. In contrast, mothers exhibited better communications skills than fathers, with this potentially helping them to show greater empathy, mutual understanding and complicity in relationships.

As an extension of the analysis presented in the present research, potential future studies could strive identify additional differences in parenting competencies according to sex of both parents and adolescent children (Laible & Caro, 2004). A practical implication of this could be to develop parental programs that target the differential needs of fathers and mothers.

Conclusion and general practical implications

The ECOPES-A may help to identify the specific parenting needs of parents with adolescent children in the general population, whilst taking a preventive and universal family intervention approach, as outlined by Recommendation 2006/19 of the European Council for Support Strategies for Positive Parenting (European Council, 2006). Professionals working with parents of adolescent children could consider the use of this scale alongside other tools to evaluate parenting competencies. This scale may also be useful for gathering evidence on the effectiveness of programs targeting parenting competencies in parents of adolescent children, as discussed by the Program-Guide for the Development of Emotional, Educational and Parenting Competencies (Martínez-González, 2009). The evidence-based findings of this Program-Guide can be consulted in full in Martínez-González et al. (2015, 2016, 2022).

Limitation and future perspectives

A potential limitation of the ECOPES-A is that it has only been validated with families comprising adolescents. It is urged that similar instruments also be validated for application at early developmental stages at which

preventive parenting work can be carried out. Further, the scale has only been validated using data collected from families from Asturias. Broadening this analysis to cover other geographical regions would help to identify its usefulness and applicability in other cultural contexts. It is also suggested that further analysis be conducted of the competencies evaluated by the scale as a function of variables such as family structure, parental educational level and employment status in order to identify needs and assist the development of parenting programs that target specific circumstances.

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