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VERSÃO PARA CRIANÇAS DO *SYSTEMIC CLINICAL OUTCOME AND ROUTINE EVALUATION* 15 (CHILD SCORE): PRIMEIROS ESTUDOS PORTUGUESES DE VALIDAÇÃO

Dissertação no âmbito do Mestrado Integrado em Psicologia, área de especialização em Psicologia Clínica e da Saúde, subárea de especialização em Psicoterapia Sistémica e Familiar orientada pela Professora Doutora Ana Paula Pais Rodrigues Fonseca Relvas e Doutora Ana Margarida de Barros Vilaça e apresentada à Faculdade de Psicologia e de Ciências da Educação da Universidade de Coimbra.

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Resumo

Atualmente, existe uma lacuna na literatura relacionada com instrumentos de medida do funcionamento familiar do ponto de vista das crianças. O *Child Systemic Clinical Outcome and Routine Evaluation* (Child SCORE) é um instrumento de autorresposta derivado da versão breve, original, para adultos e jovens com idade igual ou superior a 12 anos (SCORE-15) que mede alguns aspetos do funcionamento da família. O objetivo do presente estudo é avaliar as qualidades psicométricas da versão portuguesa do *Child SCORE*. Para tal, o instrumento foi administrado a 119 crianças, de 8 a 11 anos, recrutadas em escolas públicas localizadas no norte de Portugal. Os resultados mostraram uma boa consistência interna para a escala total e subescalas e confirmaram a estrutura trifatorial encontrada em estudos anteriores com o SCORE-15. As análises de correlação usando a Escala de Avaliação da Comunicação na Parentalidade - C (COMPA-C) apoiaram a validade convergente. Foram encontradas diferenças significativas em relação ao género das crianças, uma vez que os rapazes obtiveram pontuações mais elevadas. Os resultados sugerem que a versão portuguesa do *Child* SCORE apresenta qualidades psicométricas aceitáveis e pode ser muito útil na avaliação do funcionamento familiar na perspetiva das crianças.

Palavras-chave: Funcionamento familiar, crianças, *Child SCORE*, propriedades psicométricas.

Abstract

Currently, there is a gap in the literature related to children's family functioning assessment instruments. The Child Systemic Clinical Outcome and Routine Evaluation (Child SCORE) is a self-report instrument derived from the brief original version for adults and youngsters aged 12 and over (SCORE-15) that measures some aspects of family functioning. The aim of the present study is to assess the psychometric qualities of the Portuguese version of Child SCORE. To do so, the instrument was administered to 119 children, aged 8-11, recruited from public schools located in North Portugal. Results showed a good internal consistency for the total scale and subscales, and confirmed the three-factor structure found in previous studies with SCORE-15. Correlation analyses using Perception Scale of Parenting Communication - C (COMPA-C) supported the convergent validity. Significant differences regarding gender were found, since boys obtained higher scores. Findings suggest that the Portuguese Child SCORE presents acceptable psychometric qualities and may be very useful to assess family functioning from children's perspective.

Keywords: Family functioning; children; Child SCORE; psychometric properties.

Índice

Parte A- Introdução

Algumas notas sobre aspetos concetuais e metodológicos

A família é vista como um sistema onde são aprendidas dimensões significativas de interação e vivenciadas relações afetivas profundas (Alarcão, 2006). Numa perspetiva sistémica, esta é analisada, simultaneamente, como um todo e como parte, sendo composta por membros e subsistemas interrelacionados que se afetam mutuamente (Bandura et al., 2011; Relvas, 2006). Uma vez que o indivíduo é fortemente influenciado pelas dinâmicas e relações familiares, a análise do funcionamento familiar revela-se essencial para a compreensão do seu desenvolvimento (Francisco et al., 2016). Lanigan (2009) sugere que o funcionamento familiar "refere-se aos processos pelos quais a família satisfaz necessidades básicas, toma decisões, estabelece regras e define e alcança objetivos enquanto promove o desenvolvimento familiar e individual" (p. 592). A família pode ter, em simultâneo, áreas do funcionamento saudáveis e não saudáveis (Keitner et al., 2009). De acordo com Dai e Wang (2015), são vários os fatores que podem influenciar o funcionamento familiar, tais como: a estrutura da família, estatuto social e económico, relação entre os membros, a etapa do ciclo vital em que se encontra, bem como eventos de vida.

Pelo anteriormente mencionado, revela-se fundamental a avaliação do funcionamento familiar. Através da unidade curricular "Avaliação e Temas de Investigação em Psicoterapia Sistémica", lecionada no quarto ano do curso, foi-me dado a conhecer o *Systemic Clinical Outcome Routine Evaluation* (SCORE), não só a nível de conteúdos teóricos, mas também práticos, uma vez que tive oportunidade de responder ao instrumento. Na altura, fiquei fascinada: como é que uma medida de apenas 15 itens, com um tempo de administração tão reduzido, conseguia ter tantas potencialidades? Assim, algumas semanas depois, aquando da escolha do tema da dissertação de mestrado, foi com grande satisfação que verifiquei que uma das opções seria realizar os estudos psicométricos do *Child* SCORE. Após uma breve pesquisa, verifiquei que havia uma grande lacuna na literatura referente a medidas familiares que tivessem em consideração a perspetiva das crianças. Por esse motivo, a escolha do tema da dissertação foi bastante fácil: decidi estudar uma versão portuguesa do *Child* SCORE. Para tal, analisei as seguintes propriedades psicométricas: estatísticas descritivas, consistência interna, validade de construto e validade convergente. Ainda avaliei as diferenças dos resultados tendo em conta as características sociodemográficas das crianças, bem como as questões complementares.

Apesar de numa primeira fase terem sido contactadas várias escolas do norte e centro de Portugal, tendo como objetivo uma maior diversificação da amostra, não foram obtidas respostas atempadamente. Assim, a recolha da amostra foi realizada somente num agrupamento de escolas da zona norte. Estava prevista e autorizada a ida a mais três escolas desse agrupamento: duas do 1º ciclo e uma do 2º. Ainda, era expectável solicitar aos participantes que respondessem uma segunda

vez à versão para crianças do SCORE. Desse modo, seria analisada a estabilidade temporal da medida (análise teste-reteste). No entanto, devido ao aparecimento da pandemia Covid-19, e consequente encerramento das escolas, tal não foi possível.

Inicialmente, também foi considerada a possibilidade de recolha de amostra clínica no Hospital Pediátrico do Centro Hospitalar e Universitário de Coimbra (CHUC). Contudo, essa recolha revelou-se impraticável enquanto objetivo do estudo a incluir nesta dissertação pois, devido à organização do serviço, o início da recolha está previsto somente para setembro de 2021.

No que se refere à análise de dados, foi ponderada a hipótese de se efetuar uma análise fatorial exploratória (AFE). No entanto, são vários os estudos que corroboram a existência de uma estrutura trifatorial da versão de 15 itens do SCORE destinada a indivíduos com idade igual ou superior a 12 anos (Paolini & Schepisi, 2019; Stratton et al., 2010; Vilaça et al., 2014). Por este motivo, optou-se por realizar a análise fatorial confirmatória do instrumento (AFC).

Por último, considerou-se a realização da análise da validade divergente. Para tal, seria utilizado um inventário validado para as crianças portuguesas que avaliasse a morbilidade psicológica como, por exemplo, o Inventário de Depressão Infantil (CDI; Kovacs, 1992) ou a Escala de Ansiedade Manifesta para Crianças (CMAS-R; Reynolds & Richmond, 1978). Porém, concluiu-se que, uma vez que o protocolo continha um instrumento para avaliar a validade convergente, a inclusão de mais um questionário torná-lo-ia demasiado extenso e, consequentemente, sobrecarregaria as crianças. Assim, optou-se por não efetuar esta análise.

Estrutura da dissertação

A presente dissertação está dividida em três partes: na Parte A, encontram-se algumas notas concetuais e metodológicas sobre a dissertação, onde são brevemente descritos os conceitos "família" e "funcionamento familiar" e, de seguida, são explicadas algumas opções metodológicas; a Parte B, está organizada em formato de artigo para publicação, que será submetido à revista *Journal of Family Therapy* (JFT). Por esse motivo, esta parte foi redigida em inglês e elaborada de acordo com as normas da revista, que poderão ser consultadas através da seguinte hiperligação: https://onlinelibrary.wiley.com/page/journal/14676427/homepage/ForAuthors.html. A procura em contribuir não só para a compreensão dos vários sistemas humanos mas também para formas de intervenção mais eficazes foi um dos motivos que levou à escolha da mesma. Esta é uma das revistas promovidas pela *Association for Family Therapy and Systemic Practice* (AFT) que, desde 2006, apoia o grupo de pesquisa que desenvolve o SCORE. Assim, são vários os artigos relacionados com esta medida que foram publicados pela *Journal of Family Therapy*; por último,

da parte C consta uma conclusão integradora sobre os resultados obtidos no artigo, bem como perspetivas futuras e uma reflexão pessoal.

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Parte B- Estudos portugueses de validação do Child SCORE. Artigo para publicação

Children's version of the Systemic Clinical Outcome and Routine Evaluation (Child SCORE): First Portuguese validation studies

Bruna Veloso[a], Margarida Vilaça[b] and Ana Paula Relvas[a,c]

Currently, literature presents a gap related to children's family functioning assessment instruments. The Child Systemic Clinical Outcome and Routine Evaluation (Child SCORE) is a self-report instrument derived from the version to people aged 12 and over (SCORE-15) that measures aspects of family functioning. The aim of the present study is to assess the psychometric qualities of the Portuguese version of Child SCORE. To do so, the instrument was administered to 119 children, aged 8-11, recruited from public schools located in North Portugal. Results showed a good internal consistency for the total scale and subscales, and confirmed the three-factor structure found in previous studies with SCORE-15. Correlation analyses using Perception Scale of Parenting Communication - C (COMPA-C) supported the convergent validity. Significant differences regarding gender were found. Findings suggest that the Portuguese Child SCORE presents acceptable psychometric qualities and may be very useful to assess family functioning from children's perspective.

Practitioner points

- Existing outcome measures focus on children's individual functioning, though a more complete approach should also include factors related to family
- The impact family functioning can have in children is now well established
- Currently, there is a lack of family measures validated to children
- Results showed that the Portuguese version of Child SCORE presented acceptable psychometric properties for internal consistency, convergent and construct validity

Keywords: family functioning; children; Child SCORE; psychometric properties.

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Introduction

In the past few years, there have been two major changes in clinical assessment. Its focus is no longer exclusively on the individual's personal attributes, but rather on the way family dynamics can affect the individual's behaviour (Sperry, 2011). The second change is associated with the concern of demonstrating the effectiveness of interventions through assessment instruments that can monitor mental health service outcomes (Hamilton & Carr, 2016). Self-report instruments are the most widely used tools to assess family dynamics (Hamilton & Carr, 2016). They include not only perceptions of the family about their individual members' perspectives but also individual ratings of other family members' behaviours or relationships (Sperry, 2011).

Previous findings indicate that poor family functioning plays an important role in the development of mental health problems (Scully et al., 2019) and is associated with the use of maladaptive coping strategies, as well as with youth psychological maladjustment (Francisco et al., 2016). On the other hand, evidence also suggests that an adequate family functioning (i) represents a protective factor against the development of mental health problems (Scully et al., 2019), (ii) is positively associated with appropriate conflict resolution strategies (negotiation) (Carvalho et al., 2018), and (iii) is one of the factors that can influence treatment outcomes in interventions targeted at anxious youths (Schleider et al., 2015). Moreover, it is suggested that interventions aimed at improving family interaction patterns when children are in early childhood may prevent children's academic difficulties and aggressive externalizing behaviour problems (Johnson, 2010).

Given this data, the assessment of family functioning is central to prevent and treat mental health problems. The *Family Adaptability and Cohesion Evaluation Scale* (Faces I, II, III, IV; Olson, 1991, 2011; Olson et al., 1982; Olson et al., 1979), *Family Environment Scale* (FES; Moos, 1979), *Family Assessment Measure* (FAM I, III; Skinner et al., 1983; Skinner et al., 2000) and *Systemic Therapy Inventory of Change* (STIC; Pinsof et al., 2009) are some examples of the most recognized self-report instruments to achieve that goal. However, the literature emphasizes common limitations of the existing family functioning measures, mainly related to their factorial

structure, lengthy completions and lack of responsiveness to family functioning change over time (Hamilton & Carr, 2016).

Taking into consideration the limitations of the existent evaluation measures in the family therapy field, together with the need to routinely evaluate therapy outcomes, a group of researchers created the *Systemic Clinical Outcome and Routine Evaluation* (SCORE) (Stratton et al., 2010). Throughout the years, different versions of SCORE have been created for specific purposes (Carr & Stratton, 2017). These vary in terms of length, - e.g., SCORE-15 (Stratton et al., 2010), SCORE-28 (Cahill et al., 2010), SCORE-29 (Fay et al., 2013), SCORE-40 (Stratton et al., 2010) - and target populations, such as the versions to be filled out by lesbian, gay and bisexual (LGB) people (Relational SCORE-15; Teh et al., 2017), children (Child SCORE; Jewell et al., 2013) and the family of origin (Family of Origin SCORE-15; Rocha, 2018). According to the Association for Family Therapy and Systemic Practice (n.d.), a SCORE version for use with adults with learning difficulties is presently being worked on.

Among the SCORE's versions, SCORE-15 has proven to be the most practicable for clinical use (Stratton et al., 2014; Vilaça et al., 2017). This instrument can be used by any family member with 12 years old or older and it comprises a three-factor structure: Family Strengths, Family Difficulties and Family Communication. In addition to the 15-items, a supplemental questionnaire includes a set of questions related to the family itself, the family main problem or difficulty at the moment, and expectations related to the therapeutic process (three questions using a 10-point Likert scale and two descriptive questions) (Stratton et al., 2014). The SCORE-15 is a valid indicator of family functioning and has showed to be sensitive to change over brief therapeutic interventions (Stratton et al., 2014; Vilaça et al., 2017). Currently, SCORE-15 is considered one of the most important instruments in family therapy and its use is widely spread over Europe, namely in the United Kingdom (through the Association for Family Therapy) and Iberian Peninsula (through the Spanish Federation of Family Therapy Associations and Portuguese Society of Family Therapy). Overall, SCORE-15 has been translated into more than 23 languages, including, for instance, Polish (Józefik et al., 2016), Swedish (Zetterqvist et al., 2019), Italian (Paolini & Schepisi, 2019), Thai (Limsuwan & Prachason, 2018) and Korean (Shine et al., 2020).

Another important issue relates to the existing instruments to evaluate the child's view on psychological functioning. Currently, the existing measures in child and adolescent mental health services (CAMHS), such as the *Strengths and Difficulties Questionnaire* (SDQ; Goodman, 1997), focus on the individual functioning (Deighton et al., 2014). According to previous studies, children can understand and have insight on their difficulties, even if they suffer from a significant mental health problem. Therefore, they are able to provide exclusive information (Deighton et al., 2014). On the other hand, the impact that family functioning can have in the development of child and adult psychopathology is now corroborated by many studies (Murphy & Flessner, 2015; Wang & Zhao, 2013). Thus, Worrall-Davies and Cottrell (2009) suggest that a more sophisticated research approach should also take into consideration interactions with the family, instead of solely considering the level of children's symptoms and behaviours.

According to Amato (1990), children's perceptions are as important as their parents' to understand the family experience, however there is a lack of research on children's perspective. Given this context, the Child SCORE was developed in the United Kingdom (Jewell et al., 2013), and, to the best of our knowledge, it represents the only attempt to validate the children's version of SCORE-15. Based on the feedback from a preliminary qualitative study (using SCORE-29), it was decided that the children's version should be based on SCORE-15 and, therefore, some modifications were introduced to make it more accessible for children (e.g., use of a simpler and more friendly language, reduction of sentences' length). In total, 10 of the 15 items were changed. In addition, in the Likert answering scale was added a gradation of colour (colour's intensity decreased from the first option to the last), which contributed to the measure's visual appeal. The Child SCORE is acceptable for children aged between 8 and 11 years of age and presents adequate psychometric properties, such as internal and test-retest reliability (Jewell et al., 2013).

Currently, a Portuguese version of SCORE-15 is available for family members aged 12 years and over (Vilaça et al. 2015; Vilaça et al., 2014), presenting very good psychometric properties and a factorial structure similar to the original version. Taking into consideration the results obtained with the Portuguese SCORE-15 version, together with the gap found in the

literature related to children's family functioning assessment instruments, the aim of the present study is to investigate the psychometric qualities of a Portuguese Child SCORE version.

Methods

Participants

This study included children recruited from public schools located in North Portugal, specifically students from the third, fourth, fifth and sixth grades. The inclusion criteria were: (i) Portuguese nationality; (ii) between 8 and 11 years of age; (iii) absence of a learning disability and (iv) guardian's written permission to participate in this study. Data collection took place between February and March 2020.

Measures

Children were asked to complete a sociodemographic questionnaire, containing questions regarding their date of birth, gender, nationality, place of residence, school grade and household.

Child Systemic Clinical Outcome Routine Evaluation (Child SCORE; Jewell et al., 2013) (Appendix A). It is a self-report questionnaire addressed to children aged between 8 - 11 years old. It includes three dimensions, with five items each: Family Strengths and Adaptability (FSA; e.g., "In my family every person gets listened to"), Family Communication (FC; e.g., "In my family it feels risky or scary to disagree") and Family Difficulties (FD; e.g., "We find it hard to deal with everyday problems"). Responses are given on a 5-point Likert scale, ranging from 1 (*describes us very well*) to 5 (*it does not describe us at all*). While FSA is scored 1-5, the other two dimensions are reversed (5-1). Lower ratings indicate a good family functioning, while higher ratings indicate a problematic family functioning (Stratton et al., 2014). In addition to the 15 items, this measure includes two open questions ("What words best describe your family?" and "What is the biggest problem for your family at the moment?") followed by a question with a 10-point Likert scale

("How big is the problem for your family?"). The original Child SCORE obtained alpha coefficients of .80 for the total scale, .55 for FSA, .65 for FC, and .71 for FD subscales.

Perception Scale of Parenting Communication - C (COMPA-C; Portugal & Alberto, 2014). This scale assesses the children's perception of the communication stablished with their parents. It includes two versions that contain the same items: one referring to their mother and the other to their father. This self-report questionnaire, to be used by children from 7 to 11 years old, has two subscales: Parental Availability to Communication (PAC; e.g., "My dad pays attention to me and is kind to me") and Emotional Support/Affective Expression (ES/AE; e.g., "My mother tells me she likes me"), with eight items each. Answers are given on a Likert-type scale ranging from 1 (*never*) to 5 (*always*). Overall, higher scores indicate better perceptions of the parent-child communication. In the original study, the alpha coefficients were .88 for the total scale, .84 for PAC, and .78 for ES/AE. In this study, the total COMPA-C Cronbach's α value was .91, while for PAC and ES/AE subscales it was .87 and .81, respectively.

Procedure

The translation process followed the procedures recommended by the European Family Therapy Association research SCORE Guide (Association for Family Therapy and Systemic Practice, n.d.). This version was pilot tested in a community sample (n = 13 children aged between 8 and 11 years old) that was asked to note any difficulties encountered while completing the questionnaire. No adjustments were performed based on the respondents' comments.

Data was collected in a paper and pencil version, in every class from the selected public schools. In a first instance, informed consents (American Psychological Association, 2017) and sociodemographic questionnaires were given to teachers to, subsequently, be filled in by the children's mother, father or guardian. Informed consents contained a brief presentation of the research team - a contact was provided -, the study's purposes, along with a guarantee of anonymity and confidentiality. In addition, it explained the voluntary participation and it assured that the data would be exclusively used for statistical purposes. The sociodemographic questionnaire to be fulfilled by the children's mother, father or guardian included family data, such as the guardian's

age, level of education, and profession. After collecting these documents, the researcher visited all participating schools and explained the study goals, as well as the questionnaires' completion, to children from different classes. Then, children with permission to participate in this study were divided by classes and asked to move to the schools' libraries, where they fulfilled a sociodemograhic questionnaire (with questions regarding, for example, their date of birth, nationality and household), the Child SCORE and both versions of COMPA-C. Even though a total of 199 children were eligible to participate in this study, only 119 had permission to do so.

Data Analysis

Descriptive statistics were used to describe the sociodemographic characteristics of children and their family. In order to assess the Child SCORE internal consistency of both total and subscales, Cronbach's alpha (α) was used, with coefficients ≥ .70 suggesting good factor reliability (Hair et al., 2013). The Child SCORE construct validity was verified through a confirmatory factor analysis (CFA), with maximum likelihood estimation method. To evaluate whether data fit the original SCORE's factor model, the following indices were considered: ratio of Chi-Square over the number of degrees of freedom (χ^2/df), Tucker– Lewis fit index (TLI), comparative fit index (CFI) and root mean square error of approximation (RMSEA). According to Ullman (2001), values < 2 for χ^2/df reflect good indicators of fit. RMSEA values < .08 are considered acceptable, and values near or higher than .95 reflect a good fit for TLI and CFI indexes (Hair et al., 2013; Hu & Bentler 1999). Subsequently, convergent validity was evaluated by performing Pearson's correlation between Child SCORE total and dimensions (FSA, FC, FD) and COMPA-C total and subscales (PAC, ES/AE), with r = .50 to 1 or r = –.50 to –1 indicating a large relationship between variables (Cohen, 1988). Independent-samples t-test, Kruskal-Wallis Test and one–way ANOVA analyses were performed to determine the presence of differences in the Child SCORE's results (total and subscales) regarding children's gender, age, education, residence and household. Lastly, the complementary questions were analysed using data reduction and coding.

Statistical analyses were performed using the IBM SPSS Statistics (version 22.0) and AMOS (version 26.0) for the operating system Windows.

Results

Sample Characteristics

The sample (N = 119) was composed of 41.2 % male (n = 49) and 58.8 % female (n = 70) participants with an average age of 8.96 years (SD = .80). Sample characteristics are provided in Table 1.

TABLE 1 *Sample characteristics*

Children's characteristics	*n* (%) / *M* ± *SD*
Gender	
Female	70 (58.8)
Male	49 (41.2)
Age (years)	8.96 ± .80
Education	
3rd grade	54 (45.4)
4th grade	57 (47.9)
5th grade	4 (3.4)
6th grade	4 (3.4)
Residence	
Predominantly urban	96 (80.7)
Moderately urban	11 (9.2)
Predominantly rural	8 (6.7)
Household (number of elements)	
2	4 (3.4)
3	22 (18.5)
4	68 (57.1)
> 4	19 (16)
Guardian's characteristics	
Degree of relatedness	
Mother	96 (80.7)
Father	18 (15.1)
Aunt	1 (.8)
Age (years)	40.2 ± 5.97
Education	
≤ Basic education	35 (29.4)
≤ Secondary education	43 (36.1)
≤ University degree	31 (26)

Descriptive Statistics

The descriptive analyses of SCORE's 15 items can be found on Table 2. Findings indicated that the item with the highest mean (*M* = 2.68; *SD* = 1.35) was item 5 ("We find it hard to deal with everyday problems"). On the other hand, item 6 ("We trust each other") obtained the lowest mean (*M* = 1.26; *SD* = .70). The mode was option 1, which means that the most frequent answer was *describes us very well*. All the children used the five existing possibilities of response for each of the 15 items. Skewness values indicated a positive skew, shifted to the left (Pallant, 2005). In terms of kurtosis, values were mainly positive, with the exception of items 2, 4 and 5. Items 3, 6 and 10 were the furthest from zero.

TABLE 2 *Descriptive statistics of Childs' SCORE items and internal consistency*

Item	Mean	Std. Deviation	Mode	Range	Skewness	Kurtosis	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
1	1.50	.74	1	1-5	1.61	3.37	.28	.80
2	1.95	1.08	1	1-5	.76	-.63	.53	.78
3	1.39	.71	1	1-5	2.40	7.08	.49	.79
4	2.18	1.44	1	1-5	.84	-.765	.36	.80
5	2.68	1.35	1	1-5	.27	-1.09	.47	.79
6	1.26	.70	1	1-5	3.0	9.49	.42	.79
7	1.71	1.37	1	1-5	1.67	1.17	.38	.80
8	1.92	1.14	1	1-5	1.11	.39	.48	.79
9	2.08	1.16	1	1-5	1.02	.44	.58	.78
10	1.51	1.02	1	1-5	2.38	5.22	.29	.80
11	1.53	.86	1	1-5	1.65	2.25	.59	.78
12	1.60	.97	1	1-5	1.63	1.99	.55	.78
13	2.24	1.23	1	1-5	.95	.056	.28	.80
14	1.69	.95	1	1-5	1.44	1.90	.31	.80
15	1.71	.95	1	1-5	1.21	.71	.40	.79

Construct Validity

The original three-factor model was not adjusted to the initial data (χ^2/df = 1.415, TLI = .864, CFI = .887 and RMSEA = .059). However the re-specified model showed good goodness-of-fit indexes (χ^2/df = 1.276, TLI = .910, CFI = .928 and RMSEA = .048). To obtain the adjustment indices, three changes suggested by the modification indices were made, as correlations were low and the items contents were theoretically related. Thus, three associations between errors were performed: items 3 ("In my family every person gets listened to") and 6 ("We trust each other") were related to honesty and openness to talk, both associated with family support; items 4 ("In my family it feels risky or scary to disagree") and 13 ("People in my family interfere or get involved too much in each other's lives") generally evaluated families' responsiveness to its members' individuation; and items 5 ("We find it hard to deal with everyday problems") and 9 ("In my family we seem to go from one big problem to another") were related to difficulties and/or resilience, since both referred to the obstacles families face and their difficulty to face them. The final re-specified model can be seen on Figure 1.

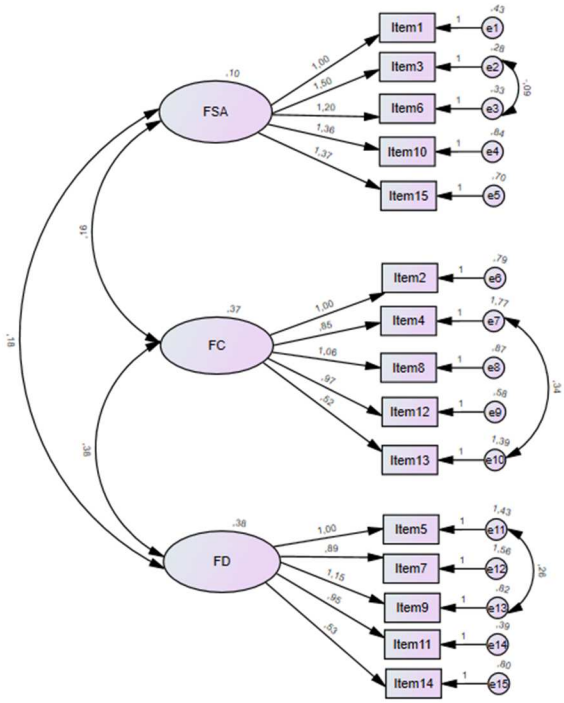

Figure 1. Re-specified model of Child SCORE.

Reliability

Child's SCORE total scale presented a good internal consistency (α = .80) (Hair et al., 2013). For each of the dimensions, the Cronbach's alpha values were as follows: .61 for FSA, .62 for FC, and .66 for FD. Values from the corrected item-total correlation revealed an adequate discriminating capacity of all items (r > .30) (Wilmut, 1975), except for items 1, 10 and 13 (respectively, r = .28, .29, .28).

Convergent Validity

Table 3 shows that, as predicted, SCORE's subscales were highly and significantly correlated to the total scale, with FC and FD dimensions obtaining the highest correlations (r = .85 and r = .86, respectively). On the other hand, FSA showed lower correlations between subscales.

Correlations between Child SCORE and COMPA-C totals and subscales were negative, as expected, since lower SCORE results indicate better family functioning and higher COMPA-C ratings correspond to a better perception of the parent-child communication. This means that as family functioning improved, the same happened to perceptions of the parent-child communication.

TABLE 3 *Correlations between Child SCORE and COMPA-C scales and subscales*

Variable	1	2	3	4	5	6	7
1. SCORE Total	1						
2. SCORE FSA	.721**	1					
3. SCORE FC	.850**	.438**	1				
4. SCORE FD	.859**	.459**	.577**	1			
5. COMPA-C Total	-.584**	-.467**	-.423**	-.541**	1		
6. COMPA-C PAC	-.613**	-.502**	-.449**	-.556**	.938**	1	
7. COMPA-C ES/AE	-.506**	-.405**	-.367**	-.479**	.943**	.770**	1
Mean	1.80	1.48	1.98	1.94			
Std. Deviation	.55	.52	.74	.75			

**. Correlation is significant at the .01 level (2-tailed).

Differences in Child SCORE according to Children's Gender, Age, Education, Residence and Household

As presented in Table 4, results showed no significant differences regarding children's age, education, residence and household. However, two exceptions were found in the gender variable: male participants scored higher on the FD dimension (*M* = 2.12; *SD* = .86) and the total scale (*M* = 1.94; *SD* = .66).

TABLE 4 *Differences in Child SCORE (scale and subscales) according to childrens's characteristics*

Characteristics	FSA	FC	FD	Total
Gender				
Female	1.39 ± .39	1.88 ± .70	1.81 ± .65	1.69 ± .44
Male	1.59 ± .52	2.11 ± .79	2.12 ± .86	1.94 ± .66
p	.062	.091	.033	.024
Age				
8	1.48 ± .40	2.00 ± .71	1.86 ± .58	1.78 ± .39
9	1.42 ± .51	1.99 ± .83	1.92 ± .80	1.77 ± .60
10	1.47 ± .52	1.81 ± .62	1.92 ± .77	1.73 ± .58
11	1.15 ± .19	1.85 ± .10	1.55 ± .30	1.52 ± .17
p	.604	.502	.789	.805
Education				
3rd grade	1.56 ± .60	2.16 ± .80	1.99 ± .65	1.90 ± .53
4th grade	1.41 ± .45	1.80 ± .68	1.91 ± .86	1.71 ± .58
5th grade	1.60 ± .00	2.15 ± .76	2.05 ± .77	1.93 ± .49
6th grade	1.15 ± .19	1.85 ± .10	1.55 ± .30	1.52 ± .17
p	.116	.077	.705	.189
Residence				
Predominantly urban	1.49 ± .55	1.94 ± .74	1.94 ± .77	1.79 ± .57
Moderately urban	1.27 ± .31	1.84 ± .62	1.73 ± .66	1.61 ± .39
Predominantly rural	1.40 ± .39	2.32 ± .93	2.18 ± .77	1.97 ± .58
p	.395	.324	.451	.385
Household (number of elements)				
2	1.40 ± .57	1.80 ± .59	2.10 ± .35	1.77 ± .40
3	1.40 ± .49	2.27 ± .87	2.10 ± .80	1.92 ± .63
4	1.48 ± .58	1.88 ± .76	1.89 ± .77	1.75 ± .58
> 4	1.54 ± .38	1.93 ± .51	1.86 ± .79	1.78 ± .42
p	.854	.189	.658	.659

Analyses of Complementary Questions

Children's responses to the open questions were coded into different categories (Table 5 and Table 6). Most children described their family using positive words (*n* = 106), while the most common answer regarding the main problem for their family was "no problems at the moment" (*n* = 51), followed by "other problems" (*n* = 32). Regarding the last question ("How big is the problem for your family?"), answered on a 0-10 rating scale, 42% children considered the problem as non-existent (0) and 6.7% as huge (10). Overall, the mean score was 2.87 (*SD* = 3.29), and mode was 0.

TABLE 5 *Responses to the question "What words best describe your family?"*

Type of response	*n*	Example
Positive	106	"Friendship, love, peace and happiness"
Mixed – both positive and negative	11	"Funny, friendly and a little bit mean"
Negative	2	"Noisy, bad with each other"

TABLE 6 *Responses to the question "What is the biggest problem for your family at the moment?"*

Type of response	*n*	Example
No problems at the moment	51	"None"
Conflict	7	"Fighting"
Financial	17	"Lack of money"
Health	10	"My mother is sick"
Conflict and health	1	"When someone goes to the hospital or when they fight"
Other problems	32	"My grades"
Unanswered	1	

Discussion

The present research represents the first validation study of a Portuguese version of the Child SCORE version. To this end, the following psychometric properties were analysed: descriptive statistics, internal consistency, construct validity and convergent validity. Differences in the Portuguese Child SCORE's results regarding children's sociodemographic characteristics were also evaluated, as well as responses to the complementary questions.

Descriptive statistics showed that item 6 ("We trust each other") obtained the lowest mean, which is in accordance with the result observed for the FSA subscale since it also obtained the lowest mean value, both in this study (*M* = 1.48; *SD* = .52) and in the original Jewell et al. study(data) (*M* = 1.71; *SD* = .69). Regarding the FD subscale, the present study obtained lower but close mean values (*M* = 1.94; *SD* = .75) in comparison to Jewell et al. study (2013) (*M* = 2.09; *SD* = .92). Similar values were found in the FC dimension in both studies. In fact, Portuguese studies with Child SCORE and SCORE-15 (Vilaça et al., 2017) presented lower scores on the FSA/ FS subscale and higher on FD, which wasn't found in other studies with SCORE-15 (Shine et al., 2020; Zetterqvist et al., 2019). These results may suggest that in the Portuguese population, families present fewer difficulties in strengths/ adaptability in comparison to communication, but a wider burden of difficulties. However, this trend should be further studied. In terms of the total Child SCORE, this study presented a lower mean value (*M* = 1.80; *SD* = .55) than Jewell at al. study (2013) (*M* = 1.90; *SD* = .64). This value was also lower in comparison to the Portuguese results obtained by Vilaça et al. (2017) with SCORE-15 (*M* = 2.10; *SD* = .61), and other validation studies such as Korean (Shine et al., 2020) and Thai (Limsuwan & Prachason, 2018). These findings may indicate that, compared to adults and children aged ≥ 12, children in the 8-11 age range perceive their families as having a better family functioning.

Overall, the total scale presented a good internal consistency. Although some studies with SCORE-15 (Hamilton et al., 2015; Shine et al., 2020; Vilaça et al., 2014) present high alpha values in its subscales, this was not the case in the present study with the Child version. As in the original Child SCORE study (Jewell et al., 2013) and the SCORE-15 Swedish validation study (Zetterqvist

et al., 2019), alpha values lower than the recommended value of .70 were obtained in subscales. This can be due to the questionnaire's length considering that it is common for short scales to obtain lower alpha values (Cortina, 1993).

Confirmatory factor analyses showed that the re-specified model fitted the three-factor solution found in previous studies with SCORE-15 (Fay et al., 2013; Hamilton et al., 2015; Paolini & Schepisi, 2019; Stratton et al., 2010). As in the Portuguese adaptation of SCORE-15 (Vilaça et al. 2015; Vilaça et al., 2014), some adjustments were made in order to obtain the final results. Therefore, three associations between errors that addressed the same theoretical content were performed, for example, the association between items 4 ("In my family it feels risky or scary to disagree") and 13 ("People in my family interfere or get involved too much in each other's lives") as both evaluate how responsive families were to their members' individuation.

As predicted, results showed statistical significant and high correlations between Child SCORE and COMPA-C totals, which supports convergent validity. In terms of the measured subscales, the lowest correlation was between FC and COMPA-C Emotional Support/Affective Expression. On the other hand, FD and COMPA-C Parental Availability to Communication obtained the strongest correlation. This result was surprising given that, theoretically, FC and COMPA-C PAC were expected to be highly correlated since they are both related to family communication. However, this result can possibly be explained by the fact that although they are associated with family communication, they assess different aspects. For instance, while COMPA-C PAC specifically assesses the parental availability to communication (e.g. "My mother listens to me and talks to me when I need it" and "When I talk to my father he listens to me and pays attention to me"), FC assesses communication more generally (E.g. "People in my family interfere or get involved too much in each other's lives").

This sample is composed of 70 girls and 49 boys, in average with 9 years of age. As for the original study (Jewell et al., 2013), since one children did not provide gender information and some were excluded due to missing values, this left a sample of 40 girls and 33 boys, with 9 years and 8 months as the mean age. Therefore, both samples have more female participants and a similar mean age. Regarding the differences in the Portuguese Child SCORE version according to children's

characteristics, it should be noted that only gender obtained significant variations. Boys obtained higher scores for the total scale and FD dimension, meaning that, in comparison with girls, boys perceived their families as having a bigger burden of difficulties and worse family functioning. These results differ from the ones obtained by Jewell et al. (2013), since no statistically significant differences were found according to children's gender and age. Even though younger participants obtained higher total scores in both studies, it should be mentioned that there was a limited number of participants aged 10 and 11 in the present research.

The great majority of children used positive words to describe their family, which is in consonance with Jewell et al. study (2013). Despite the fact that most of the participants answered that their family had no problem at the moment in both studies, some differences can be found. For instance, Portuguese children seemed to report more problems related to money (14.3%) compared to the English children (Jewell et al., 2013) since only 7.5% of the sample reported this kind of problem. This can be due to economic differences between the countries. Although in Jewell et al. (2013) no sample characteristics are provided besides gender and age, and therefore no more comparisons can be made, it is possible that these results can be related to differences in the samples' sociodemographic characteristics of both studies. Around 9.3% of the children identified health problems, which didn't happen in the original study. However, since 26.3% of the participants didn't answer this question in the original study (Jewell et al., 2013), it is not possible to know whether these children would have responded something related to this subject. Regarding the problem's dimension, similar results were obtained in both studies (present study: M = 2.87, SD = 3.29; Jewell et al. (2013): M = 2.00, SD = 2.49).

Limitations and Future Directions

This study presents certain limitations such as the non-probabilistic sample and the sample size. Even though the sample size used in this study is slightly larger than the one used in the original study (Jewell et al., 2013), it is still small. The characteristics of the sample should also be noticed since there is a limited number of participants in the 10-11 age-group and data was only

collected in schools from North Portugal. Thus, the sample isn't representative of the Portuguese population. Test-retest reliability was not analysed. Thus, future studies should focus on analysing the stability of Portuguese Child SCORE version.

Findings from previous research with SCORE-15 (Limsuwan & Prachason, 2018; Vilaça et al., 2017; Zetterqvist et al., 2019) confirmed the scale's ability to differentiate between clinical and community contexts. It would be important to verify whether these results are replicated in the Portuguese version of Child SCORE, alongside the calculation of the cutoff scores. In addition, some studies (Hamilton et al., 2015; Józefik et al., 2016; Stratton et al., 2014) evaluated SCORE-15's responsiveness to therapeutic change, including in the Portuguese context (Vilaça et al., 2015) and that should also be tested with this version. In the future, longitudinal studies should be conducted in order to verify these aspects in the Portuguese Child SCORE version.

Implications

Results showed that the Portuguese version of Child SCORE presented acceptable psychometric properties for internal consistency, convergent and construct validity. Its use allows to take into consideration children's perspective on their family. Additionally, to gain a more detailed overview of a family's functioning, it can be used in conjunction with SCORE-15. Lastly, Child SCORE has the potential to be a useful tool for community contexts.

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Appendix A

Sobre a tua família

Olá! Gostávamos que nos falasses sobre a tua família (as pessoas que vivem contigo, em tua casa). Escrevemos algumas frases sobre famílias. Para cada frase, diz-nos por favor de que forma é que descrevem a tua família. Ou seja, de que forma é que achas que são verdade.

Para cada afirmação, diz-nos se achas que a frase descreve a tua família:

1. **Muito bem**
2. **Bem**
3. **Em parte**
4. **Mal**
5. **Muito mal**

Por exemplo, se a frase for "A nossa família quer ficar junta" e tu achas que a frase é completamente verdade em relação à tua família, então, a frase descreve a tua família **Muito Bem**. Neste caso, colocas um visto (✓) na caixa Muito bem, tal como está em baixo:

	Isto descreve a nossa família:				
	Muito bem	**Bem**	**Em parte**	**Mal**	**Muito mal**
A nossa família quer ficar junta	✓				

Não penses muito tempo sobre cada questão, mas tenta responder a todas elas. Não existem respostas certas ou erradas. Este questionário é sobre a forma como tu vês a tua família neste momento.

Por favor, vira a página para preencheres o questionário!

	Isto descreve a nossa família:				
	Muito bem	**Bem**	**Em parte**	**Mal**	**Muito mal**
1) Na minha família falamos uns com os outros sobre coisas que têm interesse para nós					
2) Na minha família muitas vezes não se diz a verdade uns aos outros					
3) Todos nós somos ouvidos na nossa família					
4) Sinto que é arriscado ou assustador discordar na nossa família					
5) Sentimos que é difícil enfrentar os problemas do dia-a-dia					
6) Confiamos uns nos outros					
7) Sentimo-nos muito infelizes na nossa família					
8) Na minha família, quando as pessoas se zangam, ignoram-se de propósito					
9) Na minha família parece que surgem grandes problemas uns atrás dos outros					
10) Quando um de nós está aborrecido/chateado, é apoiado pela família					
11) As coisas parecem correr sempre mal na minha família					
12) As pessoas da minha família são más umas com as outras					
13) Na minha família as pessoas interferem ou metem-se demasiado na vida umas das outras					
14) Na minha família culpamo-nos uns aos outros quando as coisas correm mal					
15) Somos bons a encontrar novas formas de lidar com as dificuldades					

Quais as palavras que melhor descrevem a tua família?

.....

Qual é o maior problema para a tua família neste momento?

.....

De que tamanho é o problema para a tua família? Por favor, assinala na linha em baixo:

Não existe **Problema enorme**

0 1 2 3 4 5 6 7 8 9 10

Muito obrigada pela tua ajuda!

Parte C- Notas finais

Apesar de serem necessários mais estudos que comprovem a adequação da utilização deste instrumento na população portuguesa, a presente investigação contribuiu para a lacuna existente relativamente a instrumentos de medida do funcionamento familiar que tenham em consideração a perspetiva da criança. No geral, os resultados obtidos coincidiram com o que era esperado, - por exemplo, na análise da consistência interna, validade de construto, bem como validade convergente – e indicam boas propriedades psicométricas do instrumento. No entanto, há dois resultados que considero surpreendentes. O primeiro relaciona-se com o facto de terem sido encontradas diferenças significativas, em função do género, nos resultados obtidos na dimensão "dificuldades familiares" e na escala total, uma vez que inicialmente pensei que, à semelhança do estudo original (Jewell et al., 2013), não iriam ser encontradas diferenças. Por outro lado, surpreendeu-me o facto de 14.3% dos participantes ter mencionado problemas financeiros na pergunta "Qual é o maior problema para a tua família neste momento?". Embora no estudo de Cunha e Relvas (2015) se tenha concluído que o facto de uma família considerar a crise económica como principal problema não acrescenta dificuldades no seu funcionamento familiar, penso que este resultado é bastante interessante.

Uma vez que o estudo apresentado nesta dissertação é transversal, verifica-se a necessidade da realização de estudos longitudinais. Para tal, futuramente prevê-se a continuidade desta investigação, nomeadamente com recolha de amostra clínica no Hospital Pediátrico do CHUC. Esta recolha permitirá analisar a capacidade do instrumento em diferenciar entre amostras comunitária e clínica (validade discriminante), bem como verificar a sua sensibilidade à mudança terapêutica (validade preditiva). De igual modo, é expectável a ida a escolas dos 1º e 2º ciclos de diferentes áreas geográficas do país e subsequente análise da estabilidade temporal da medida.

Importa referir os três principais desafios ao longo de todo este processo. Em primeiro lugar, a escrita da dissertação em formato de artigo, uma vez que foi algo que não estava inicialmente planeado. Por vezes, foi complicado conseguir expressar as minhas ideias de forma objetiva e concisa (algo fulcral num artigo). O segundo desafio relaciona-se com a dificuldade em escrever cientificamente, tanto em português como em inglês. Apesar de considerar que ainda tenho um longo caminho a percorrer, acredito que "a prática levará à perfeição" e a redação de mais artigos no futuro fará com que melhore este aspeto. Finalmente, o terceiro e maior desafio: lidar com a frustração de não ter conseguido recolher amostra clínica, ir a todas as escolas previstas e não ter podido efetuar a análise da estabilidade temporal da medida. Confesso que o apoio das minhas orientadoras, bem como dos meus familiares e amigos, foi fundamental para conseguir ultrapassar este obstáculo. Estas adversidades fizeram-me evoluir, no sentido em que me mostraram que, na investigação, nem tudo corre da forma inicialmente planeada e é essencial que o investigador tenha resiliência para ultrapassar estas situações.

Para concluir, terminada a dissertação, o sentimento que me preenche é de orgulho. Ao longo do curso, sempre vi a Estatística como um inimigo e duvidava que algum dia conseguiria

fazer uma análise de dados. Por esse motivo, sempre temi o último ano, pois envolveria um confronto direto com algo que nunca gostei. Embora a minha relação com a Estatística continue com bastante margem para ser trabalhada, sinto que evoluí imenso ao longo deste ano e pude mostrar a mim mesma que afinal sou capaz. Pelo mencionado anteriormente, a investigação nunca foi algo que me fascinasse e desejasse explorar. Porém, contra todas as (minhas) expetativas, isso mudou este ano e desenvolvi um interesse inesperado. Por último, o facto de efetivamente poder contribuir para a área é algo que me deixa com um sentimento de "dever cumprido" e é, sem dúvida, gratificante.

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