Protocol of a brief version of the Pediatric Inventory for Parents (PIP) in Spanish population:

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Abstract

A chronic illness in childhood has a negative impact on the paediatric patient and on family functioning. Psychological stress in parents influences the level of adjustment to the illness of their children. The Pediatric Inventory for Parents (PIP) was designed to measure stress in parents whose child has a chronic illness or requires prolonged medical monitoring. The main objective of this study is to provide a brief version of the Spanish version of the PIP, across a sample consisted of 465 main familial carers (85.2% female, n=396) between 27 and 67 years old (=44.13; SD=5.35), of paediatric patients between 9 and 18 years old (=12.10, SD=2.20; 56.8% men, n=264) diagnosed with diabetes mellitus type I (20.9% of the sample; n=97), short stature (32.5% of the sample; n=151) or a chronic respiratory disease (asthma, cystic fibrosis, bronchiolitis obliterans and bronchiectasis) (46.6% of the sample; n=217). After performing several EFAs (Exploratory Factor Analyses) and CFAs (Confirmatory Factorial Analyses), it was decided that 30 items need to be removed. Reliability and validity results of the new 12-item version suggest appropriate psychometric properties. Cronbach's alpha value ranging between α=.42 and α=.81 and fit values obtained indicate a good fit: χ2/df (88.393/48) = 1.84 (α < .01); S-B χ^2(df)= 88.393 (48); CFI=.95; IFI=.95; RMSEA=.05 (.033 - .074) for the frequency scales and χ2/df (72.002/48) = 1.5 (α < .01); S-Bχ^2(df)= 72.002 (48); CFI=.97; IFI=.97; RMSEA=.04 (.011 - .063) for the difficulty scales. The PIP also showed predictive ability about anxiety and depression, a positive relationship between the instrument's own scales and a negative relationship with the caregiver's age. Finally, Differences in stress levels were found depending on the paediatric patient's diagnosis. In order to facilitate the interpretation of the data, centiles were calculated for the whole sample and for each pathology separately.

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Protocol

Obtaining Sample

Step 1.

After the paediatric patients' medical appointment and after being presented by the doctor, a trained member of the research team spoke to the carer about participating in the study voluntarily and anonymously. After signing an informed consent form, a set of questionnaires was given to the carer. The questionnaire was completed by the caregiver themselves in the waiting area over the course of 30 minutes. When they finished, they gave the questionnaire to the member of the research team.

Entering the data into a database

Step 2.

A database was created with the SPSS 23.0 program for the digitization of the data obtained.

Sample division for analysis

Step 3.

The total sample was divided in two to perform EFA and CFA analyses. Subsample A was used to conduct EFA and subsample B to conduct the CFA. Each sample was selected by cluster sampling based on age, sex and diagnosis.

Psychometric analysis

Step 4.

The data analysis was performed using SPSS 23.0, EQS 6.3 and FACTOR software.

First, as is suggested in the literature, the properties of the items were analysed using observations of the item-total correlation coefficients and variations in the Cronbach's alpha coefficients if items were eliminated, in addition to the reliability of the instruments. Then, the psychometric properties were analysed using Cronbach's alpha, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA was performed according to the process recommended by Lloret-Segura et al., using the unweighted least-squares method (ULS), the application of the method of parallel analysis, and the direct Oblimin rotation.

After performing EFA, CFA was used to validate the factorial structure of the scales using maximum likelihood estimation (MLE) and the robust Satorra-Bentler adjustment to correct the absence of multivariate normality. The adequacy of the CFAs was tested using the significance of chi-squared and of the robust Satorra-Bentler correction (S-B χ^2). Additional coefficients, such as the χ^2 ratio and its degrees of freedom (χ^2/df) as well as the S-B X^2 and its degrees of freedom, with values of less than five being acceptable, were calculated, which made it possible to test the adequacy of the proposed models.

Then the robust indexes of goodness of fit of the proposed models were tested with non-normed fit index (NNFI), comparative fit index (CFI), and incremental fit fix (IFI). For these indicators, values greater than .90 were considered a good fit. Finally, the root mean-square error of approximation (RMSEA) was computed. These same ratings were required to be less than .08 to be considered a good fit. Next, the relationships among different dimensions of the instrument were analysed using Pearson correlation analysis.

The instrument's nomological or criterion validity was analysed by performing Pearson's correlations between the dimensions of the PIP and the HADS (anxiety and depression) and by hierarchical regressions to study the ability of PIP to predict anxiety and depression. Then mean differences in relation to diagnosis (ANOVA with Tukey post hoc) were analysed. Finally, in order to facilitate the interpretation of the data, centiles were calculated for the whole sample and for each pathology separately.