New validity evidence of the Parent PARQ/Control scale of Parental Educational Styles

Omar García-Pérez, Mercedes Inda-Caro and Susana Torío-López
Universidad de Oviedo

Abstract

Background: The Parent PARQ/Control (short version) for mothers and fathers is an inventory of 29 items where parents record their acceptance-rejection and control behaviors towards their children. Despite vast research on IPARQTheory, it has yet to be validated for a Spanish population. The goal of this study is to analyze the psychometric properties of the instrument and its factorial structure. Method: Participants were 4,168 parents from the Principality of Asturias (2,166 mothers and 2,002 fathers). Mean age for mothers was 39.50 years and 41.90 years for fathers. Following preliminary studies, we carried out exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) for mothers and for fathers separately. Results: Analysis of mothers’ responses reveal an instrument comprising 15 items with a three-factor structure: warmth/affection, hostility/aggression, and control. For fathers, the structure of the inventory gave a 23 item instrument with four factors: warmth/affection, hostility/aggression, indifference/neglect and control. Conclusions: Overall, the results show that warmth/affection and control are the main dimensions in parental educational styles, and as hypothesized, mothers and fathers have different educational styles.

Keywords: Parent PARQ/Control, parents, educational styles, children.

Resumen

Nuevas evidencias de validez de la escala Parent PARQ/control sobre estilos de educación parental. Antecedentes: el Parent PARQ/Control (versión corta, madre y padre) es un inventario de 29 ítems en el cual los progenitores reflejan las conductas de aceptación-rechazo y control que ejercen hacia los hijos e hijas. A pesar de la investigación existente en relación a la IPARQTheory, este instrumento no ha sido validado en población española. El objetivo de este estudio fue analizar las propiedades psicométricas y la estructura factorial del instrumento. Método: los participantes fueron 4,168 padres y madres del Principado de Asturias (2,166 madres y 2,002 padres) con una edad media en las madres de 39,50 y en los padres de 41,90. Siguiendo los estudios previos, se realizó un análisis factorial exploratorio y análisis factorial confirmatorio, para las madres y para los padres. Resultados: en relación a la versión de la madre, se obtuvo una estructura factorial de tres factores (15 ítems): afecto, hostilidad y control. En la versión de los padres, el instrumento (23 ítems) con una estructura factorial de cuatro dimensiones: afecto, hostilidad, indiferencia y control. Conclusiones: los resultados muestran que las dimensiones de afectividad y control son las principales, y que las madres y padres presentan estructuras diferentes en los estilos de educación parental.

Palabras clave: Parent PARQ/Control, padres, estilos educativos, niños.

In accordance with the anthroponomical and universalist approach postulated by Rohner, several studies (Gómez & Rohner, 2011; Khaleque & Rohner, 2002; Rohner et al., 2005a; Rohner & Khaleque, 2010) have indicated that research over the course of five decades in every continent has shown that children and adults organize their perceptions of acceptance and rejection around the same classes of behavior. Thus, the factorial structural analysis of this model posits two constructs that define the acceptance factor: warmth/affection and hostility/aggression. Warmth behavior is related to physical and verbal actions like hugs, kisses, and praise, whereas the hostility/aggression dimension is defined by “physical and verbal behaviors such as hitting, kicking, scratching, cursing, and saying sarcastic, thoughtless, or cruel things (Rohner et al., 2005a, p. 7). Similarly, two factors explain parental rejection: indifference/ neglect (physical and psychological unavailability and a parental attitude of not paying attention) and undifferentiated rejection (lack of love and unappreciated or uncared-for behaviors).

Moreover, Rohner, & Khaleque (2005) stated that the control dimension should be considered when explaining parental educational behaviors. This factor also evaluates the degree to which parents insist that their children comply with their rules, directives and prescriptions. Most socialization researchers agree that behavioral control (permissiveness-string strictness) refers to the attempts made by parents to regulate, manipulate, or manage their children’s behavior.

Nevertheless, although parental control and warmth may be independent in theory, the literature has not established whether this is true across all cultures. For example, parental control is positively associated with perceived parental warmth among adolescents in Asia, but negatively associated with warmth among young people in North America and Germany (Deater-Deckard et al., 2011). Therefore, Rohner & Khaleque (2005) created the Parent PARQ/Control questionnaire to evaluate this theory. Several studies have been carried out to validate this measure in different cultural contexts (Deater-Deckard et al., 2011; Gómez & Farhana Suhaimi, 2015; Gómez & Rohner, 2011; Khaleque & Rohner, 2002; Rohner & Khaleque, 2003; Rohner & Khaleque, 2005; Rohner et al., 2005b). Various meta-analyses concluded that Parent PARQ/Control is a useful measure for assessing parental variations in control, in multiethnic and cross-cultural research.

However, there remains a lack of research into this theory in Spain. Therefore, we seek to validate and adapt this instrument with a sample from the Spanish region of the Principality of Asturias. We performed an exploratory and confirmatory factor analysis to determine the best structure of the instrument and considered separate analyses for mothers and fathers.

Method

Participants

After obtaining permission from Ronald Rohner, we randomly selected two schools, one public and one private, from eight geographic zones of the Asturian Society for Economic and Industrial Studies: Eo-Navia, Narcea, Avilés, Oviedo, Gijón, Caudal, Nalón and Oriente. The participants were 4,168 parents from the Principality of Asturias (2,002 fathers, 48% of the sample, 2,166 mothers, 52% of the sample). The fathers’ mean age was 41.90 years (SD = 6.70) and mothers’ 39.50 years (SD = 5.95). All families had children in nursery or primary schools across the region (2,002 boys and 2,081 girls). The most common parental educational level was secondary education (2.7% unfinished primary, 18.6% primary education, 47.9% secondary education, 30.8% higher education). Parents were employed in both skilled occupations (46.1%) and semi-skilled occupations (53.9%).

Instrument

This project used the Spanish version (Rohner & Carrasco, 2004) of the Parental Acceptance-Rejection/Control Questionnaire (parent version)-Parent PARQ/Control- (Rohner & Khaleque, 2002, 2005). This questionnaire consists of 29 items on a Likert scale (4= almost always true to 1= almost never true) which evaluates parental acceptance/rejection and controlling behaviors with their children. We used the Spanish version (Rohner & Carrasco, 2004). Versions are available for both mothers and fathers. The structure of the original version includes: warmth/affection factor (8 items), hostility/aggression (6 items), indifference/neglect (6 items), undifferentiated rejection (4 items) and control factor (5 items). The alpha coefficient for the total PARQ was between .78, .88 for the maternal version and .84 for the paternal version. The internal consistency of factors in the maternal version was: warmth/affection between .78 and .87, hostility/aggression between .78 and .87, indifference/neglect between .52 and .69 and indifference/rejection between .53 and .69. This information was not available for the paternal version (Rohner, 2005).

The control dimension was originally measured using “The Parental Control Scale (PCS)” (1987) –cited in Rohner & Khaleque, 2005–. After the authors adapted a scale of eight items, the alpha value for this dimension was between .62 and .74 for the maternal version and .71 for the paternal version (Rohner & Khaleque, 2005). Finally, this scale gathered five items in Parent PARQ/C version (Rohner, 2005) with an internal consistency of .74. Results of meta-analysis studies showed that the overall alpha coefficient aggregated across all versions of the PCS was .73 (Rohner & Khaleque, 2005).

Procedure

Once the schools had agreed to participate, students were provided with two envelopes containing both questionnaires, one for each parent. Parents returned the completed questionnaires to the teachers.

Data analysis

Analyses were performed by dividing the sample into three subsamples. With the first subsample, an exploratory factor analysis (EFA) was carried out using the Factor program (Lorenzo-Seva & Ferrando, 2006). We then ran a confirmatory factor analysis (CFA) using MPLUS 7.3 (Muthén & Muthén, 2014) with the second subsample, so the re-specification model was guided by the standardized factor loadings and modification indexes. Finally, the third subsample was used for a second CFA, in order to confirm the previous CFA model.

The maternal and paternal versions were analysed separately. We first checked whether the data were suitable for EFA: normality of sample (skewness, kurtosis), Bartlett’s test, and Kaiser-Meyer-
Olkin (KMO). Unweighted least squares were used as the factor extraction method. We employed the promin oblique rotation method (Lorenzo-Seva, 1999). The fitted model included: the Chi-Square test of significance ($\chi^2$), the Tucker Lewis index–non normed fit index (TLI–NNFI), the comparative fit index (CFI), the goodness of fit index (GFI), Root Mean Square of Residuals (RMSR), Standardized Root Mean Square Residual (SRMR), and Steiger’s Root Mean Square error of approximation (RMSEA). It is worth noting that although recent studies had evaluated the four-factor structure which excluded control from the PARQ model we thought it was important, however, to take into account all the factors involved in the construct of the PARQ/C.

**Exploratory factor analysis**

In the maternal version ($n = 708$) and paternal version ($n = 663$) the univariate normality was evaluated by skewness and kurtosis values (Table 1). The Bartlett’s statistic was $2651.00, df = 153, p = .000010$, and KMO = .81. We used the scree plot (Cattell’s test) and “parallely analysis” Horn’s Test, to determine how many factors were retained; the advised number of dimensions was between two and three. Initially, we obtained a parsimonious model of 2 factors (with the model corresponding to the two poles of the warmth spectrum, “acceptance” and “rejection”), but this model did not show acceptable fit (Table 2). Consequently, we carried out a refinement of items, removing those with extreme skewness and kurtosis, and those items which exhibited a communality less than .10 communality. The fit indices support the three-factor solution as the best, $\chi^2 (708,102) = 406.06, p = .000010; TLI-NNFI = .82; CFI = .88; GFI = .98; RMSR = .04$. The alpha coefficient for the whole scale was .79.

In the paternal version, Bartlett’s statistic was $3517.70, df = 253, p = .000010$, and KMO = .87. Cattell’s test indicated four factors, and Horn’s test advised two dimensions (warmth and rejection dimensional spectrum), $\chi^2 (663,208) = 753.55, p = .000010; TLI-NNFI = .80; CFI = .83; GFI = .97; RMSR = .05$, however, the solution that produced the best fit included four dimensions (Table 3). Fit indexes included: $\chi^2 (663,167) = 435.852, p = .000010; TLI-NNFI = .88; CFI = .92; GFI = .99; RMSR = .03$. The alpha coefficient for the whole scale was .83.

**Confirmatory factor analysis**

In the maternal version, the first CFA (conducted with the second subsample), had the following fit indexes, TLI = .81, CFI = .84, RMSEA = .06, SRMR = .06. We then ran the re-specification model, producing correlations of item 3 with 1 and 4; 15 with 27, and 14 with 26. Subsequently the fit index improved, TLI = .89, CFI = .91, RMSEA = .04, SRMR = .05. The model was replicated with the third subsample, and the fit indexes were TLI = .89, CFI = .91, RMSEA = .04, SRMR = .05 (Figure 1).

The model is based on three dimensions: warmth, hostility and control (Figure 1). The control dimension is related to the warmth and hostility dimensions. The warmth dimension is similar to Rohner’s original model (Figure 1).

In the paternal version, the fit indexes were: TLI = .89, CFI = .90, RMSEA = .04 SRMR = .04. We re-specified the model introducing correlation parameters between item 12 and 17. Subsequently the fit indexes improved, TLI = .91, CFI = .91, RMSEA = .03, SRMR = .04. The second CFA had to be re-specified because the fit was poor (TLI = .88, CFI = .87, RMSEA = .04, SRMR = .06). Correlations of item 12 with 17, 3 and 7; 9 and 15 were introduced. The subsequent fit of the model was: TLI = .91, CFI = .90, RMSEA = .03, SRMR = .05 (Figure 2).

The warmth and indifference dimensions had the strongest correlation. The warmth dimension assessed the fathers’ affectionate and supporting behaviours. The paternal hostility dimension was defined by negative behaviors. The indifference/neglect dimension was defined as concerned behaviors or paying attention to the child. The paternal control dimension included direct behaviors and supervision.

**Discussion**

These findings demonstrate the differences between fathers and mothers in the original PARQ/Control (parental version) (Rohner & Khaleque, 2002, 2005; Rohner & Carrasco, 2004). In terms of warmth/affectiveness, our data are close to the original model, as this factor is the one which exhibits the highest reliability for both parents.

In the original version (Rohner, 2005) this dimension has 8 items. In our validation study only the maternal version maintains this number of items, whereas the paternal version contains only 6 items.

The maternal hostility dimension exhibits differences in our sample compared to the original version. Asturian mothers use positive punishment to control their child’s behavior, but they do not use emotional punishment, such as saying unkind things or hurting their child’s feelings. On the other hand, in the paternal sample, the hostility factor is similar to the original version. The only difference may be that Asturian fathers consider not paying attention to their child as hostility. This is the reason why item 28 is in this factor and not part of indifference/neglect.

One of the most interesting results was found in the indifference/neglect and indifference rejection dimensions, as neither of them appears in mothers’ factorial structure. The absence of these dimensions in Asturian mothers suggests cultural differences between Asturian and American societies. Asturian mothers are close to and show warmth to their children, and unconcerned and rejection behaviors are absent. Furthermore, the indifference/neglect dimension is present in fathers’ factorial structure, showing a very similar structure to the original version and strong internal consistency. However, one must consider the presence of items with negative loading in this factor; as the disadvantages of combining negative and positive items in an instrument are well documented (Solís, 2015).

The inclusion of the control dimension in the EFA and CFA is an innovative aspect of this study and could explain the lower discrimination indices. Our purpose was to define the loading and importance of this factor in parental educational styles theory. In the EFA, both paternal and parental versions have the same factorial structure (Rohner & Carrasco, 2004; Rohner & Khaleque, 2005) as the original version. The internal consistency was similar between the mothers’ version and the original. On the other hand, the fathers’ version exhibited lower internal consistency.
Table 1
Means, standard deviations, Skewness, Kurtosis and discrimination index values for the PARQ/Control items for AFE

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>D.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Digo cosas buenas sobre mi hijo/a [I say nice things about my child]</td>
<td>3.49/3.46</td>
<td>.61/.66</td>
<td>-.97/1.06</td>
<td>.79/0.97</td>
<td>.18/28</td>
</tr>
<tr>
<td>2. Presto atención a mi hijo/a [I pay attention to my child]</td>
<td>3.63/3.53</td>
<td>.54/.62</td>
<td>-1.04/1.04</td>
<td>0.03/0.40</td>
<td>.28/36</td>
</tr>
<tr>
<td>3. Me preocupo de que mi hijo/a sepa exactamente lo que puede o no puede hacer [I see to it that my child knows exactly what (s)he may or may not do]</td>
<td>3.68/3.65</td>
<td>.52/.58</td>
<td>-1.45/1.63</td>
<td>1.51/2.45</td>
<td>.33/39</td>
</tr>
<tr>
<td>4. Hago que mi hijo/a confíe en mí [I make it easy for my child to confide in me]</td>
<td>3.72/3.67</td>
<td>.49/.58</td>
<td>-1.61/1.77</td>
<td>2.13/2.99</td>
<td>.32/41</td>
</tr>
<tr>
<td>5. Pego a mi hijo/a cuando se lo merece [I hit my child, even when (s)he does not deserve it]</td>
<td>1.40/1.30</td>
<td>.67/.62</td>
<td>1.97/2.41</td>
<td>4.11/6.11</td>
<td>.08/13</td>
</tr>
<tr>
<td>6. Mi hijo/a es un gran incordio para mí [My child is a nuisance for me]</td>
<td>1.07/1.07</td>
<td>.35/.35</td>
<td>5.83/5.79</td>
<td>39.24/38.98</td>
<td>.08/10</td>
</tr>
<tr>
<td>7. Siempre le digo a mi hijo/a cómo debe comportarse [I always tell my child how (s)he should behave]</td>
<td>3.42/3.35</td>
<td>.71/.76</td>
<td>-1.04/0.93</td>
<td>6.00/1.31</td>
<td>.28/28</td>
</tr>
<tr>
<td>8. Castigo a mi hijo/a severamente cuando estoy enfadado [I punish my child severely when I am angry]</td>
<td>1.62/1.49</td>
<td>.76/.69</td>
<td>1.14/1.40</td>
<td>.95/1.71</td>
<td>.13/10</td>
</tr>
</tbody>
</table>

Note: The numerical results are given as mother/father. The wording of the items in this table have been taken literally from Rohner's original version of the instrument

Table 2
Summary of exploratory factor analysis. Mothers’ version (n = 708)

<table>
<thead>
<tr>
<th>χ²</th>
<th>df</th>
<th>TLI-NNFI</th>
<th>CFI</th>
<th>GFI</th>
<th>RMSR*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two factor</td>
<td>999.486***</td>
<td>298</td>
<td>.74</td>
<td>.78</td>
<td>.96</td>
</tr>
<tr>
<td>Three factor</td>
<td>406.056***</td>
<td>102</td>
<td>.82</td>
<td>.88</td>
<td>.98</td>
</tr>
</tbody>
</table>

Note: TLI-NNFI = Tucker Lewis index - Non normed fit index; CFI = comparative fit index; GFI = goodness of fit index; RMSR = root mean square of residuals
*Kelly’s criterion = .04
*** p<.001

Table 3
Summary of exploratory factor analysis. Fathers’ version (n = 663)

<table>
<thead>
<tr>
<th>χ²</th>
<th>df</th>
<th>TLI-NNFI</th>
<th>CFI</th>
<th>GFI</th>
<th>RMSR*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two factor</td>
<td>753.547***</td>
<td>208</td>
<td>.80</td>
<td>.83</td>
<td>.97</td>
</tr>
<tr>
<td>Four factor</td>
<td>435.852***</td>
<td>167</td>
<td>.88</td>
<td>.92</td>
<td>.99</td>
</tr>
</tbody>
</table>

Note: TLI-NNFI = Tucker Lewis index – Non normed fit index; CFI = Comparative fit index; GFI = goodness of fit index; RMSR = Root mean square of residuals
*Kelly’s criterion = .04
*** p<.001
It is necessary to consider the role of the control factor in the CFA. When the correlations between control and other factors were not established, the model did not fit for the maternal or paternal version, so the central role of control must be considered in order to understand the theoretical model. In this sense, though parental warmth has been generally regarded as a universally positive parenting value, in contrast, parental control may be more culturally variable with respect to its normative meaning and potential consequences. For example, the study by Deater-Deckard et al. (2011), with thirty different cultural groups, indicated that relatively high levels of warmth and control were found in African American and Latino families and that relatively high warmth but low control levels were evidenced in European and American families.

This paper has two main limitations: first, further studies should validate the factorial structure in other Spanish regions in order to generalize this factorial structure to the whole Spanish population. It is important to deepen our understanding of this topic because of the human need to feel support and acceptance and in order to promote positive psychological development. In addition, the measure used in this study does not distinguish between the different types of control. It is important to consider behavioral and psychological control because that may affect a child’s autonomy and development of self-regulation (Barber & Xia, 2013; Parra & Oliva, 2007). Finally, this study lacked other measures, or information from proxies, such as teachers or the parents’ children themselves, which are needed in order to assess external validity.

This work increases our understanding of the main dimensions of binomial acceptance-rejection in the Spanish cultural context. We have also demonstrated that mothers and fathers have different educational styles and behaviors towards their children. Finally, parental control appears to be an important element of family socialization processes before adolescence.

Acknowledgements

We gratefully acknowledge the permission of R. P. Rohner and M.A. Carrasco to adapt the instrument for the Asturian population.
**Figure 1.** Confirmatory factor analysis. Parent PARQ/Control. Mothers’ version. Short Form. Note: n_{AFC1} = 706; n_{AFC2} = 752

* p<.05; ** p<.01; *** p<.001

**Figure 2.** Confirmatory factor analysis. Parent PARQ/Control. Fathers’ version. Short Form. Note: n_{AFC1} = 856; n_{AFC2} = 483

* p<.05; ** p<.01; *** p<.001
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References


