Perceived Parenting Styles and Parental Inconsistency Scale: Construct Validity in Young Adults

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Abstract
The study examines evidences of construct validity of the Perceived Parental Styles and Parental Inconsistency scale –EPIPP–, on a sample of 369 young adults. Individuals were asked about their father and their mother by means of 24 items. These conform six subscales that constitute a first-order-model–Affection, Dialogue, Indifference, Verbal Coercion, Physical Coercion and Prohibition– that additionally group into two major scales –a second-order model–:Responsiveness and Demandingness. A confirmatory factor analysis was carried out on the first-order and second-order factor structures, using maximum likelihood and a bootstrap procedure with 500 random samples. Resulting indexes showed an excellent fit in both models for the Father and Mother versions. Furthermore, adequate results were obtained in a cross-validation and a factorial invariance analysis. This way, solid evidences of construct validity were obtained for the EPIPP, suggesting it for the assessment of perceived parenting in young adults.

Keywords: Parenting – Confirmatory Factor Analysis – Cross-validation – Young adults – Factorial Invariance

1. Assessing Parenting
Parenting assessment shows a great variety of approaches. A first decision takes into account the fact that parenting is a transaction that involves at least two parties: a parent and a child. With this in mind, researchers must decide whether they ask the parents about their parenting practices (Capaldi & Patterson, 1989; Furman & Giberson, 1995; Gerard, 1994; Lovejoy, Weis, O’Hare & Rubin, 1999; Robinson, Mandleco, Olsen & Hart, 1995), whether asking the children about how they perceive their parents (Ausubel, Baltasar, Rosenthal, Blackman, Schpoont & Welkowitz, 1954; Sánchez Gutiérrez, 2009; Schaefer, 1965; Serot & Teevan, 1961), or the consideration of both sources at once, pursuing a conjoint description of parenting (Bell, 1968; Boykin & Allen, 2001; Lovejoy et al., 1999; Maccoby, 2007). Although this last option is thought to be the most accurate, it implies several difficulties in data recollection, especially when adult population is being examined–such as inaccessibility to one of the parties–.
From a cognitive perspective (Ausubel et al., 1954; Sánchez Gutiérrez, 2009; Schaefer, 1965; Serot & Teevan, 1961), the second option—asking the children about how their parents raised them—appears as a valid way to assess parenting. This viewpoint emphasizes that their perceptions are more relevant than the parents’ actual behaviors, since they are hypothesized to have a bigger impact in the offspring’s well being.

1.1. Dimensions Versus Categories

A second decision concerns how parenting is conceived from a theoretical perspective. Two main approaches have been proposed: dimensional and categorical. The first one includes the assessment of two main parenting dimensions: responsiveness and demandingness. Responsiveness refers to the degree in which parents express affection, warmth and dialogue with their children (Ainsworth, Bell & Stayton, 1971; Baumrind, 1991a, 1994, 1996a; Maccoby & Martin, 1983; Rohner, 2004). Demandingness, on the other hand, is related to the regulation of the offspring’s behavior by means of verbal or physical coercion, limit-setting, prohibitions, rules and discipline. On certain occasions a third dimension is analyzed: parental inconsistency. It refers to changes in parenting for each parent along time—intraparental inconsistency—, differences in parenting between parents—interparental inconsistency—and incongruence between parenting and the culture where the family is inserted—extraparental inconsistency. Not so widely studied, the concept is often examined regarding its hypothesized association with mental health (e.g., Benson, Buehler & Gerard, 2008; Casullo & Fernández Liporace, 2008; Dwairy, 2007; Dwairy & Achoui, 2006; Dwairy, Achoui, Abouserie & Farah, 2006; Dwairy, Achoui, Filus, Rezvannia, Casullo & Vohra, 2010; Lee, Daniels & Kissinger, 2006; Lengua, 2006; Sturge-Apple, Davies & Cummings, 2006; Tildesley & Andrews, 2008).

The second perspective, the categorical, derives from the joint analysis of the two major dimensions mentioned before—responsiveness and demandingness—. By combining them, different parenting styles can be assessed. De la Iglesia, Ongarato and Fernández Liporace (2011a) proposed a five-style typology based on Maccoby and Martin’s (1983) widely used one. It consists of five parenting styles: negligent, authoritarian, permissive, authoritative and overprotective—see Figure 1—. The negligent style emerges when neither demandingness nor responsiveness are found. The authoritarian style combines a high level of demandingness and low responsiveness. In opposition, permissive parents are very responsive but not demanding. Overprotective parents, on the other hand, are both highly responsive and demanding. And, finally, authoritative parents as described by Baumrind (1966) have balanced levels of responsiveness and demandingness.

```
            AUTHORITARIAN  
          /              
        /                
    AUTHORITATIVE       
          
   NEGLIGENT          PERMISSIVE
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Figure 1: Five-Style Typology (de la Iglesia et al., 2011a)

Considering that both methodologies—dimensional and categorical—are relevant for the assessment of parenting, a psychometric instrument developed to provide the opportunity to choose either or both in a single time data recollection seemed an attractive proposal. The Perceived Parental Styles and Parental Inconsistency Scale (de la Iglesia et al., 2011b) meets that demand.
1.2. The Perceived Parental Styles and Parental Inconsistency Scale (EPIPP)

The scale consists of 24 items, which are answered, in a four-point likert scale regarding mother and father. These items are grouped in six subscales—first-order factors—: Affection, Dialogue, Indifference, Verbal coercion, Physical coercion and Prohibition. They are based on another parenting instrument by Musitu and García (2001). The combination of the first three conform one underlying dimension that corresponds to parental Responsiveness, and the sum of the remaining three subscales assesses Demandingness. This way, the scale provides an analysis of perceived parenting in a dimensional perspective. A categorical analysis is also possible by the identification of the style that characterizes each parent. This can be carried out by considering jointly the scores on each dimensions and determining if they are low, medium or high –by the use of local norms or the calculation of the 25th, 50th and 75th percentiles–.

Finally, an additional part of the scale that asks the respondent about parental behavior through time, and the comparison of the style obtained for the father and for the mother, allows for the optional analysis of intraparental and interp paternal inconsistency.

The EPIPP already has some psychometric studies, which include evidences of construct validity, internal consistency, and temporal stability of its scores. Though it is presented as a fine instrument for the assessment of this concept, additional research to provide even more information concerning its psychometric properties is required.

2. Method

2.1. Participants

A non-probabilistic sample was constituted by 369 young adults who attended different colleges in Buenos Aires City (82.8% female and 17.2% male). Their ages ranged between 19 and 35 years old (M = 23.54; SD = 2.74). Most of them (97%) attended to a public institution, while the remaining 3% attended to different private colleges. In regard of career in course, 59.9% were students of Psychology, 25.2% Nutrition, 6.2% Electronic Engineering, 5.4% Public Translation, and 3.3% attended other careers.

2.2. Materials and Procedure

Data were gathered in collective sessions that took place in free time students had during their courses. Participants signed an informed consent, which guaranteed the confidential treatment of the information, their possibility to desist in answering, and stated the chance of an individual feedback on the results to those who were interested in it—if this was the case, an e-mail address was required. First, participants were asked to complete a short survey where basic socio-demographic data were inquired (their sex, age, career and college). Then, they answered to the EPIPP (de la Iglesia et al., 2011b), regarding both their parents something that would later constitute both versions of the instrument: Father and Mother. Previous psychometric studies included first and second-order principal component analyses. As for reliability, internal consistency analysis using Cronbach’s alphas ranged from .549 to .753 and ordinal alphas (Elosúa & Zumbo, 2008) from .723 to .846. Also atest-retest procedure resulted in statistical significant correlation for all subscales except for Indifference.

3. Results

In order to study the six-factor structure of the EPPIP in its Father and Mother versions, a first-order confirmatory factor analysis (CFA) was carried out using maximum likelihood estimation. Several fit indexes were examined. Indexes of absolute and incremental fit were included: GFI (Goodness-of-Fit Index), AGFI (Adjusted Goodness-of-Fit Index), SRMS (Standardized Root Mean Square Residual), CFI (Comparative Fit Index) and RMSEA (Root Mean Square Error of Approximation). A bootstrap procedure with the generation of 500 random samples complemented the calculation of the parameters for a more precise estimation with 95% confidence intervals.

Indexes obtained for the first-order CFA showed an excellent fit for both versions: Father (GFI = .923; AGFI = .903; SRMR = .049; CFI = .931; RMSEA = .038) and Mother (GFI = .922; AGFI = .902; SRMR = .049; CFI = .911; RMSEA = .040). All factorial weights and covariances were statistically significant –Table 1–. As seen in Figure 2, factorial weights in both versions were higher than the minimum expected (Kline, 1998) –the lower weight was .42–. Also, covariances between factors exhibited evidences of discriminant validity in most of them (covs .50), except for the one between affection and dialogue (Father: cov= .67; Mother: cov= .55), and for that between verbal coercion and prohibition (Father: cov= .56; Mother: cov = .59), which presented higher associations than expected.
### Table 1: First-Order CFA: Parameters Obtained By Bootstrap (Mean Values and Confidence Intervals of 95%)

<table>
<thead>
<tr>
<th>Version: Factor</th>
<th>Item</th>
<th>Father Mean</th>
<th>Inferior</th>
<th>Superior</th>
<th>p-value</th>
<th>Mother Mean</th>
<th>Inferior</th>
<th>Superior</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affection</td>
<td>Item 1</td>
<td>.562</td>
<td>.447</td>
<td>.661</td>
<td>.004</td>
<td>.546</td>
<td>.434</td>
<td>.655</td>
<td>.004</td>
</tr>
<tr>
<td>Affection</td>
<td>Item 7</td>
<td>.528</td>
<td>.428</td>
<td>.623</td>
<td>.004</td>
<td>.505</td>
<td>.363</td>
<td>.627</td>
<td>.004</td>
</tr>
<tr>
<td>Affection</td>
<td>Item 13</td>
<td>.615</td>
<td>.504</td>
<td>.699</td>
<td>.004</td>
<td>.611</td>
<td>.497</td>
<td>.703</td>
<td>.004</td>
</tr>
<tr>
<td>Affection</td>
<td>Item 19</td>
<td>.700</td>
<td>.619</td>
<td>.760</td>
<td>.004</td>
<td>.633</td>
<td>.519</td>
<td>.719</td>
<td>.004</td>
</tr>
<tr>
<td>Affection</td>
<td>Item 24</td>
<td>.653</td>
<td>.562</td>
<td>.736</td>
<td>.004</td>
<td>.602</td>
<td>.491</td>
<td>.693</td>
<td>.004</td>
</tr>
<tr>
<td>Dialogue</td>
<td>Item 2</td>
<td>.546</td>
<td>.435</td>
<td>.653</td>
<td>.004</td>
<td>.516</td>
<td>.404</td>
<td>.613</td>
<td>.004</td>
</tr>
<tr>
<td>Dialogue</td>
<td>Item 8</td>
<td>.539</td>
<td>.437</td>
<td>.635</td>
<td>.004</td>
<td>.596</td>
<td>.470</td>
<td>.705</td>
<td>.004</td>
</tr>
<tr>
<td>Dialogue</td>
<td>Item 14</td>
<td>.612</td>
<td>.501</td>
<td>.706</td>
<td>.004</td>
<td>.553</td>
<td>.436</td>
<td>.661</td>
<td>.004</td>
</tr>
<tr>
<td>Dialogue</td>
<td>Item 20</td>
<td>.719</td>
<td>.618</td>
<td>.805</td>
<td>.004</td>
<td>.657</td>
<td>.555</td>
<td>.758</td>
<td>.004</td>
</tr>
<tr>
<td>Indifference</td>
<td>Item 3</td>
<td>.543</td>
<td>.426</td>
<td>.644</td>
<td>.004</td>
<td>.455</td>
<td>.323</td>
<td>.597</td>
<td>.004</td>
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<tr>
<td>Indifference</td>
<td>Item 9</td>
<td>.574</td>
<td>.434</td>
<td>.682</td>
<td>.004</td>
<td>.556</td>
<td>.400</td>
<td>.714</td>
<td>.004</td>
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<tr>
<td>Indifference</td>
<td>Item 15</td>
<td>.561</td>
<td>.427</td>
<td>.664</td>
<td>.004</td>
<td>.442</td>
<td>.288</td>
<td>.594</td>
<td>.004</td>
</tr>
<tr>
<td>Indifference</td>
<td>Item 21</td>
<td>.643</td>
<td>.504</td>
<td>.755</td>
<td>.004</td>
<td>.512</td>
<td>.373</td>
<td>.651</td>
<td>.004</td>
</tr>
<tr>
<td>Verbal Coercion</td>
<td>Item 4</td>
<td>.512</td>
<td>.364</td>
<td>.649</td>
<td>.004</td>
<td>.473</td>
<td>.346</td>
<td>.585</td>
<td>.004</td>
</tr>
<tr>
<td>Verbal Coercion</td>
<td>Item 10</td>
<td>.615</td>
<td>.467</td>
<td>.758</td>
<td>.004</td>
<td>.675</td>
<td>.545</td>
<td>.778</td>
<td>.004</td>
</tr>
<tr>
<td>Verbal Coercion</td>
<td>Item 16</td>
<td>.415</td>
<td>.250</td>
<td>.573</td>
<td>.004</td>
<td>.690</td>
<td>.576</td>
<td>.777</td>
<td>.004</td>
</tr>
<tr>
<td>Verbal Coercion</td>
<td>Item 22</td>
<td>.462</td>
<td>.311</td>
<td>.599</td>
<td>.004</td>
<td>.512</td>
<td>.364</td>
<td>.626</td>
<td>.004</td>
</tr>
<tr>
<td>Physical Coercion</td>
<td>Item 5</td>
<td>.720</td>
<td>.612</td>
<td>.826</td>
<td>.004</td>
<td>.714</td>
<td>.576</td>
<td>.860</td>
<td>.004</td>
</tr>
<tr>
<td>Physical Coercion</td>
<td>Item 11</td>
<td>.771</td>
<td>.651</td>
<td>.873</td>
<td>.004</td>
<td>.636</td>
<td>.488</td>
<td>.759</td>
<td>.004</td>
</tr>
<tr>
<td>Physical Coercion</td>
<td>Item 17</td>
<td>.732</td>
<td>.614</td>
<td>.836</td>
<td>.004</td>
<td>.644</td>
<td>.471</td>
<td>.778</td>
<td>.004</td>
</tr>
<tr>
<td>Prohibition</td>
<td>Item 6</td>
<td>.448</td>
<td>.308</td>
<td>.572</td>
<td>.004</td>
<td>.525</td>
<td>.423</td>
<td>.636</td>
<td>.004</td>
</tr>
<tr>
<td>Prohibition</td>
<td>Item 12</td>
<td>.555</td>
<td>.442</td>
<td>.654</td>
<td>.004</td>
<td>.608</td>
<td>.496</td>
<td>.712</td>
<td>.004</td>
</tr>
<tr>
<td>Prohibition</td>
<td>Item 18</td>
<td>.727</td>
<td>.595</td>
<td>.842</td>
<td>.004</td>
<td>.526</td>
<td>.380</td>
<td>.647</td>
<td>.004</td>
</tr>
<tr>
<td>Prohibition</td>
<td>Item 23</td>
<td>.548</td>
<td>.430</td>
<td>.663</td>
<td>.004</td>
<td>.637</td>
<td>.532</td>
<td>.745</td>
<td>.004</td>
</tr>
</tbody>
</table>
Figure 2: First-Order Confirmatory Factor Analysis for the FATHER and MOTHER Versions

Then, a cross-validation study and a factorial invariance analysis were carried out using two random subsamples generated from the main sample. Fit indexes calculated in the cross-validation analysis were acceptable considering that the original sample was reduced by half –Table 2–. Factorial invariance analysis, on the other hand, was also appropriate –Table 2–. For its calculation, nested models with progressive restrictions were used: first restriction established equal factor loadings; then, equal covariances between factors; and lastly, equal error variances. In both Father and Mother versions non-significant Δχ² were achieved for all nested models.
Table 2: Cross-Validation: Indexes Obtained for two Random Sample Halves

<table>
<thead>
<tr>
<th>VERSION: FATHER</th>
<th>GFI</th>
<th>AGFI</th>
<th>SRMR</th>
<th>CFI</th>
<th>RMSEA (IC 90%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Half 1</td>
<td>.872</td>
<td>.838</td>
<td>.065</td>
<td>.903</td>
<td>.043 (.028 - .056)</td>
</tr>
<tr>
<td>Half 2</td>
<td>.878</td>
<td>.845</td>
<td>.063</td>
<td>.915</td>
<td>.044 (.031 - .055)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VERSION: MOTHER</th>
<th>GFI</th>
<th>AGFI</th>
<th>SRMR</th>
<th>CFI</th>
<th>RMSEA (IC 90%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Half 1</td>
<td>.884</td>
<td>.854</td>
<td>.064</td>
<td>.922</td>
<td>.036 (.020 - .050)</td>
</tr>
<tr>
<td>Half 2</td>
<td>.869</td>
<td>.834</td>
<td>.067</td>
<td>.879</td>
<td>.048 (.036 - .060)</td>
</tr>
</tbody>
</table>

Factorial invariance: Nested models with progressive regressions.

<table>
<thead>
<tr>
<th>VERSION: FATHER</th>
<th>$\chi^2$ (p-value)</th>
<th>df $\Delta\chi^2$ (p-value)</th>
<th>CFI</th>
<th>RMSEA (IC 90%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No restrictions</td>
<td>631.766 (.000)</td>
<td>474</td>
<td>.910</td>
<td>.031 (.024 - .037)</td>
</tr>
<tr>
<td>Same factor loadings</td>
<td>645.734 (.000)</td>
<td>492</td>
<td>13.968 (ns)</td>
<td>.912</td>
</tr>
<tr>
<td>Same factor covariance</td>
<td>660.824 (.000)</td>
<td>513</td>
<td>29.058 (ns)</td>
<td>.916</td>
</tr>
<tr>
<td>Same error variance</td>
<td>706.737 (.000)</td>
<td>537</td>
<td>74.971 (ns)</td>
<td>.903</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VERSION: MOTHER</th>
<th>$\chi^2$ (p-value)</th>
<th>df $\Delta\chi^2$ (p-value)</th>
<th>CFI</th>
<th>RMSEA (IC 90%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No restrictions</td>
<td>627.143 (.000)</td>
<td>474</td>
<td>.899</td>
<td>.030 (.023 - .036)</td>
</tr>
<tr>
<td>Same factor loadings</td>
<td>651.357 (.000)</td>
<td>492</td>
<td>24.214 (ns)</td>
<td>.895</td>
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<tr>
<td>Same factor covariance</td>
<td>679.486 (.000)</td>
<td>513</td>
<td>52.343(ns)</td>
<td>.890</td>
</tr>
<tr>
<td>Same error variance</td>
<td>701.662 (.000)</td>
<td>537</td>
<td>74.519 (ns)</td>
<td>.892</td>
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</tbody>
</table>

Finally, in an attempt to confirm that the six first-order scales could be grouped into two underlying dimensions, a second-order CFA was calculated –also analyzing 500 random samples generated by bootstrap–. Fit indexes for the second-order CFA were also satisfactory for the Father ($GFI = .916$; $AGFI = .897$; $SRMR = .062$; $CFI = .916$; $RMSEA = .041$) and Mother ($GFI = .913$; $AGFI = .893$; $SRMR = .064$; $CFI = .888$; $RMSEA = .044$) versions. As seen in Figure 3, factor loadings and covariance values were suitable, except for the standardized regression weight from demandingness to prohibition, which was greater than 1. Regarding covariance, the one between responsiveness and demandingness reflected excellent evidence of discriminant validity (Father: $cov = .26$; Mother: $cov = .34$).
4. Discussion

Obtaining new construct validity evidences for the EPIPP was a requirement for its proper use in young adults. Every psychometric analysis for the EPIPP was fairly satisfactory. Fit indexes for the first and second-order CFA were adequate with all estimates being statistically significant.

As for factor loadings, it must be mentioned the case of a value greater than 1 in the second-order CFA for the Father version. As suggested by Byrne (2010) the model was not re-specified considering its sound theoretical basis and its good performance in all other analyses–cross-validation, factorial invariance–Feasibility assessment of all other regression weights was extremely satisfactory.

In reference to covariances, in the first-order CFA some of them were slightly higher than the limit usually set for discriminant validity. This was not a striking result as these factors were expected to jointly represent higher underlying dimensions –Responsiveness in the case of affection and dialogue, and Demandingness in the case of verbal coercion and prohibition–. With this in mind, seeking for discriminant covariance between the two major dimensions in the second-order analysis was an unavoidable requirement that was achieved.

Fit indexes were slightly lower than wanted in the case of the cross-validation study. This was expected due to the fact that sample size was reduced by half (Byrne, 2010). However, new studies with wider samples should be an appropriate next step. Factorial invariance testing was also satisfactory, a result that allows concluding that the model proposed for assessing parenting worked equivalently across two samples generated randomly.

In sum, results showed adequate psychometric quality of the EPIPP. Additional evidences of construct validity for both the Father and Mother versions were found. This way, it can be said with fair certainty that parenting can be assessed by two major dimensions –Responsiveness and Demandingness, as posed by many authors (e.g. Baumrind, 1996; Maccoby & Martin, 1983)–, and that in a more detailed analysis a six-factor structure seems suitable–replicating in part Musitu and García’s (2001) proposal–. Thus, the EPIPP allows the user for a thorough evaluation of parenting from a cognitive perspective in a dimensional and categorical way.
In addition, the shortness of the instrument stands out as it assesses a multidimensional construct with few items asking about both mother and father simultaneously. Accessibility establishes another advantageous characteristic of the EPIPP as it may be used and evaluated in a fairly simple way.

Perceived parenting research in young adults is scarce despite the fact that it has been remarked that the way individuals were raised plays an important role in their well being throughout all of their life span (Anisman, Zaharia, Meaney & Merali, 1998; Aquilino & Supple, 2001; Kasser, Koestner & Lekes, 2002; Lueckens, Appelhans, Karft& Brown, 2006; Maccoby, 1994; Rohner &Veneziano, 2001; Rothrauff, Cooney & An, 2009). Parenting assessment in young adults would benefit the identification of risk groups—as it has been demonstrated that certain parenting practices are related to mental illness and low academic achievement, for example (e.g. Dwairy, 2007; Khan, Haynes, Armstrong & Rhoner, 2010)—and for considering the possible intervention in parental training. It has been stated that parenting practices are transmitted intergenerationally (Dobriansky Weber, Selig, Galvão Bernardi & Viezzer Salvador, 2006; Lamm, Keller, Yovsi, Chaudhary, 2008; Martin, Halverson, Wampler & Hollett-Wright, 1991). Hence, perceived parenting does not only affect the person being socialized, but could also impact in their own offspring since it is likely that this young adults will embrace and replicate their parents practices. Intergenerational transmission of negative parenting practices could be obstructed by assessment and intervention.

Considering the limitations of this study, it must be pointed out the prevalence of females over males in the sample analyzed. Also, the fact that they were college students limits the generalization for the EPIPP to be used in other populations. This way, and despite its proven psychometric qualities, the scale should be tested in other samples that represent different populations. Moreover, up to this point the EPIPP does not have evidences of empirical validity, an important aspect that further studies should test.

5. References


