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The Aggression Questionnaire for Spanish Preadolescents and Adolescents: AQ-PA

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We have already published the psychometric properties of our Spanish version of the Buss and Perry’s Aggression Questionnaire adapted to young subjects (Personality and Individual Differences, 42, 1453-1465). The four-dimensional structure of the questionnaire was confirmed in each pre-adolescent and adolescent sample, although differences in the inter-correlations among factors between both groups of age were then observed. We publish now new evidences about its factorial validity in the whole group of pre-adolescent and adolescent children. We also report the positive correlations found between measurements obtained with this questionnaire (AQ-PA) and other aggression and anger scales (DIAS, STAXI and EXPAGG) and the Barratt Impulsiveness Scale (BIS-11), which provide more evidences about its convergent validity. The text of the Spanish version of this questionnaire adapted to pre-adolescent and adolescent subjects is also reported.

Keywords: aggression questionnaire, pre-adolescents, adolescents, validation, impulsivity, anger

Las propiedades psicométricas de la versión española del cuestionario de agresión de Buss y Perry adaptado a jóvenes se han publicado recientemente (Personality and Individual Differences, 42, 1453-1465). La estructura tetra-dimensional del cuestionario fue confirmada tanto con la muestra de preadolescentes como con la de adolescentes, aunque se observaron algunas diferencias entre ambos grupos de edad en las magnitudes de las inter-correlaciones entre los 4 factores. En este trabajo se aportan nuevas evidencias de la validez factorial de este cuestionario con la muestra conjunta de jóvenes, adolescentes y preadolescentes. También se muestran las correlaciones positivas encontradas entre las mediciones obtenidas con el AQ-PA y las obtenidas con otros cuestionarios y escalas que miden agresión e ira (DIAS, STAXI y EXPAGG), así como con las obtenidas administrando la escala de impulsividad de Barratt (BIS-11), proporcionándose mas evidencias de su validez convergente. También se incluye el texto completo de la versión en español del cuestionario, adaptado a preadolescentes y adolescentes.

Palabras clave: cuestionario de agresión, preadolescentes, adolescentes, validación, impulsividad, ira

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Aggression is a personality trait related to antisocial behaviour. The Aggression Questionnaire (AQ) published by Buss and Perry in 1992 has good construct validity (Harris, 1995, 1997) and predictability, and has proved its worth in studying aggression profiles and predicting violent behaviour (e.g., Bushman & Wells, 1998; Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005). It is a questionnaire based on a four-factor model and consists of 29 items in the Likert format. The questionnaire has been translated into Dutch (Meesters, Muris, Bosma, Schouten, & Beuving, 1996), Japanese (Nakano, 2001), Spanish (Andreu, Peña, & Graña, 2002; García-León et al., 2002; Santisteban, Alvarado, Recio, 2007), Italian (Possati, Maffei, Acquarini, & Di Ceclie, 2003) and German (von Collani & Werner, 2005), and its four-factor structure of Physical Aggression (PA), Verbal Aggression (VA), Anger (A), and Hostility (H) being supported in all cases showing that the questionnaire met conventional psychometric standards. Many subjects from nine to eleven years of age, precisely the children who constituted half of the sample we planned to study, claimed that they were unable to properly answer the Spanish version of the questionnaire, because they did not understand the meaning of several of its sentences. Thus we regarded it as essential to adapt the AQ to subjects of these ages in order to be sure that they clearly understood each item. It is an important issue due to the significance of the many studies related to aggression in young subjects that are been actually carried out, in which the AQ is widely used to attain a valid measure of this trait. Moreover, the study of the developmental aggression among preadolescents and adolescents (e.g., Collishaw, Maughan, Goodman, & Pickles, 2004; Fonagy, 2003; Martino, Ellickson, Klein, McCaffrey, & Edelen, 2008) needs valid measurements of the trajectory (e.g., low, persistent or desisting aggression) followed by young people throughout adolescence. We call this new version the AQ-PA from now, indicating that it also is valid for preadolescents. We considered the need to validate the AQ-PA and to find out whether it was also suitable for older subjects, performing exploratory and confirmatory factor analyses and examining the psychometric properties of this adaptation. The internal consistency of each factor and of the total score of AQ-PA is satisfactory, as was proved in a previous publication (Santisteban et al., 2007). We corroborated the Buss and Perry’s four-factor structure in each age group (preadolescents and adolescents) finding that the four factors were more closely interrelated in preadolescents than in adolescents. The exploratory and confirmatory factor analyses of the overall AQ-PA and the text of its Spanish version were not reported in this previous publication. It is done here, as well as some other evidences about its validity. The consistence of the level of aggression in preadolescent and adolescents with some other psychological correlates, such as anger and impulsivity, has also been studied in the present work, finding that the AQ-PA measurements are positively correlated with those of other constructs: the State-Trait Anger Expression Inventory (STAXI; Spielberger, 1988, 1991), the Direct Indirect Aggression Scales (DIAS; Bjorkquist, Lagerspetz, & Osterman 1992); the Expressive Representations of Aggression Scale (EXPAGG; Campbell, Muncer, & Coyle, 1992), and the Barratt Impulsiveness Scale (BIS-11; Patton, Stanford, & Barratt, 1995). We also show in an Appendix the whole text of this Spanish version (AQ-PA) because slight nuances might be introduced in any translation of the items, which may then alter their comprehension by preadolescents and consequently its validity.

Method

Participants

The sample consisted of 2,208 children, 1,224 females and 984 males. It included 1,116 pre-adolescents aged 9 to 11 (M = 10.0, SD = 0.73) and 1092 adolescents aged 14 to 17 (M = 15.3, SD = 0.90). All of them were chosen at random in 27 schools in the Madrid area of Spain. A stratified random sampling method was used considering that key subgroups of different socio-economic level and social environment of the population should be represented in the overall population. The strata were identified according to the following criteria: a) private or state school; b) location: metropolitan areas, dormitory towns, rural environment; and c) population size as well as school-age population size. Random sampling was used to select school sites for each stratum. When there was more than one group of students for the required ages in the same school, the subgroups (classroom) that became part of the sample for each age group were chosen at random. A self-report and the AQ-PA, DIAS, STAXI, BIS-11 questionnaires were administered to all the students in each of the classrooms selected. The EXPAGG scale was administered only to adolescents because it has been not adapted to Spanish children. All scales used were the previous adaptations to Spanish which are referred in the measurements paragraph.

Procedure

Permission was sought from the school and a convenient date scheduled for the tests, which were administered during class time. The participants had approximately one hour to complete the self-report, the AQ-PA and the other questionnaires. They were administered by trained survey takers, who were psychology undergraduate students with the psychometrics discipline passed. They were paid for their job. All surveyors used the same written protocol and they were trained to use the same words. Identical guidelines for all sessions emphasized that whilst the type of answer was not important the truth of the answer was. It was also explained that responses would remain anonymous as only a numerical key could identify each subject’s response sheets in the self-report and the questionnaires.
Measurements

Aggression was measured by the AQ-PA (Santisteban et al., 2007) which maintains the structure of Buss and Perry’s AQ original 1992 version. The AQ-PA (see Appendix) is a four-factor model consisting of 29 items of a 5-point Likert format from 1 (*uncharacteristic of me*) to 5 (*very characteristic of me*) as will be shown below. This questionnaire provides a global measure of aggression and four subscales: physical aggression (PA), with 9 items, verbal aggression (VA), with 5 items; anger (A), with 7 items and hostility (H), with 8 items. Before the questionnaire was administered we carried out a pilot study with students between the ages of 9 and 12. Our first step was to undertake a new Spanish translation of those sentences that they did not properly understand. They were asked personally to explain the meaning of each of the items in the tests so as to make sure that children in their age group could interpret correctly all of the items in the questionnaire. This new translation from English into Spanish (the AQ-PA) was done by the authors, who are native Spanish speakers, and was independently translated back into English by a native English doctor in English philology with wide professional experience in translating scientific texts from Spanish to English, who found no significant differences between his back-translation of the AQ-PA and the original English items. This Spanish translation is available in the Appendix.

Evidences of the AQ-PA convergent validity were established by its relationships with related scales and questionnaires designed to the measurement of aggression and other related constructs such as anger and impulsivity:

Direct and indirect aggression was evaluated by our adaptation of the DIAS scales to Spanish preadolescents and adolescents (unpublished).

The three main aspects of anger (state, trait, and anger expression) were measured by a Spanish adaptation of the STAXI for children and adolescent (del Barrio, Aluja, & Spielberger, 2004).

The expressive representations of aggression were measured by the Spanish adaptation of EXPAGG (Andreu, Arango, Graña, & Rogers, 2003).

Impulsivity was measured using the Spanish version of the BIS-11 adapted and validated for adolescents and preadolescents by Recio, Santisteban, and Alvarado (2004).

Results

Reliability and Factor Analysis

The means and standard deviations of the AQ-PA values obtained for male and female pre-adolescents and adolescents are shown in Table 1.

Internal consistency was evaluated by Cronbach’s α coefficient for both the overall scale (α = .87) and each of the four subscales showed acceptable internal consistency. The factor analysis of the AQ-PA (principal-axis factoring and varimax rotation) partially supported the four-scale AQ model. The four factors and the internal consistency coefficients for the scales are set out in Table 2. Standardized factor loadings for items of the AQ in Harris (1995) construct validity investigation are also shown in Table 2.

Confirmatory Factor Analysis

To validate the AQ-PA structure a confirmatory-factor analysis was conducted using a maximum-likelihood procedure to estimate the parameters. Support for the four-factor model was also obtained in our version of the aggression questionnaire.

The path diagram for the sample is shown in Figure 1. The confirmatory-factor analysis indicates that the four-factor model provides a good fitting to these data. The fitting indices and their values were the following: (1) goodness of fit index GFI = 0.928; (2) adjusted goodness of fit index AGFI = 0.916; and (3) root mean-square error of approximation RMSEA = 0.047. Since both the GFI and the AGFI indices are above 0.90 and the RMSEA is below 0.05, the fit is considered acceptable.
Table 2

Standardized factor loadings for items of the AQ-PA construct validity and for items of the AQ in Harris (1995)

<table>
<thead>
<tr>
<th>Item</th>
<th>Total</th>
<th>Pre-adolescents</th>
<th>Adolescents</th>
<th>Harris (1995)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Aggression ($\alpha = 0.80$)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0.65</td>
<td>0.70</td>
<td>0.66</td>
<td>0.52</td>
</tr>
<tr>
<td>5</td>
<td>0.75</td>
<td>0.68</td>
<td>0.75</td>
<td>0.67</td>
</tr>
<tr>
<td>9</td>
<td>0.62</td>
<td>0.65</td>
<td>0.66</td>
<td>0.62</td>
</tr>
<tr>
<td>13</td>
<td>0.66</td>
<td>0.61</td>
<td>0.66</td>
<td>0.65</td>
</tr>
<tr>
<td>17</td>
<td>0.67</td>
<td>0.54</td>
<td>0.68</td>
<td>0.63</td>
</tr>
<tr>
<td>21</td>
<td>0.71</td>
<td>0.57</td>
<td>0.72</td>
<td>0.67</td>
</tr>
<tr>
<td>24 a</td>
<td>0.37</td>
<td>0.06</td>
<td>0.34</td>
<td>0.47</td>
</tr>
<tr>
<td>27</td>
<td>0.60</td>
<td>0.51</td>
<td>0.66</td>
<td>0.63</td>
</tr>
<tr>
<td>29</td>
<td>0.45</td>
<td>0.47</td>
<td>0.50</td>
<td>0.66</td>
</tr>
<tr>
<td>Verbal Aggression ($\alpha = 0.73$)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0.60</td>
<td>0.54</td>
<td>0.57</td>
<td>0.45</td>
</tr>
<tr>
<td>6</td>
<td>0.55</td>
<td>0.37</td>
<td>0.46</td>
<td>0.68</td>
</tr>
<tr>
<td>10</td>
<td>0.55</td>
<td>0.57</td>
<td>0.63</td>
<td>0.54</td>
</tr>
<tr>
<td>14</td>
<td>0.61</td>
<td>0.57</td>
<td>0.72</td>
<td>0.65</td>
</tr>
<tr>
<td>18</td>
<td>0.36</td>
<td>0.53</td>
<td>0.59</td>
<td>0.76</td>
</tr>
<tr>
<td>Hostility ($\alpha = 0.66$)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0.31</td>
<td>0.44</td>
<td>0.47</td>
<td>0.61</td>
</tr>
<tr>
<td>8</td>
<td>0.31</td>
<td>0.37</td>
<td>0.49</td>
<td>0.68</td>
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<tr>
<td>12</td>
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<td>0.62</td>
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<tr>
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<td>0.51</td>
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<td>0.71</td>
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<tr>
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<td>0.68</td>
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<td>0.46</td>
<td>0.61</td>
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<td>0.28</td>
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<td>0.72</td>
<td>0.65</td>
<td>0.59</td>
<td>0.63</td>
</tr>
<tr>
<td>28</td>
<td>0.44</td>
<td>0.35</td>
<td>0.36</td>
<td>0.38</td>
</tr>
<tr>
<td>Anger ($\alpha = 0.65$)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.47</td>
<td>0.28</td>
<td>0.46</td>
<td>0.58</td>
</tr>
<tr>
<td>7</td>
<td>0.24</td>
<td>0.53</td>
<td>0.55</td>
<td>0.47</td>
</tr>
<tr>
<td>11</td>
<td>0.11</td>
<td>0.48</td>
<td>0.35</td>
<td>0.62</td>
</tr>
<tr>
<td>15 a</td>
<td>0.48</td>
<td>0.32</td>
<td>0.38</td>
<td>0.64</td>
</tr>
<tr>
<td>19</td>
<td>0.31</td>
<td>0.51</td>
<td>0.50</td>
<td>0.68</td>
</tr>
<tr>
<td>22</td>
<td>0.53</td>
<td>0.53</td>
<td>0.58</td>
<td>0.72</td>
</tr>
<tr>
<td>25</td>
<td>0.52</td>
<td>0.59</td>
<td>0.62</td>
<td>0.80</td>
</tr>
</tbody>
</table>

* The scoring of these items is reversed.

$\alpha = $ Internal consistency coefficients for the scales.

Table 3

Correlations among the AQ-PA, STAXI (state, trait & anger expression index), DIAS, EXPAGG and BIS measurements

<table>
<thead>
<tr>
<th>AQ-PA</th>
<th>STAXI</th>
<th>DIAS</th>
<th>EXPAGG</th>
<th>BIS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>State</td>
<td>Trait</td>
<td>AE index</td>
<td></td>
</tr>
<tr>
<td>AQ-PA</td>
<td>—</td>
<td>0.42</td>
<td>0.67</td>
<td>0.62</td>
</tr>
<tr>
<td>State</td>
<td></td>
<td>—</td>
<td>0.42</td>
<td>0.36</td>
</tr>
<tr>
<td>Trait</td>
<td></td>
<td></td>
<td>—</td>
<td>0.62</td>
</tr>
<tr>
<td>AE index</td>
<td></td>
<td></td>
<td></td>
<td>0.62</td>
</tr>
<tr>
<td>DIAS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXPAGG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All correlations are significant ($p < 0.001$).
0.50 it can be concluded that the data fit the model satisfactorily. Thus it follows that the AQ-PA accurately replicates the four-factor structure originally proposed by Buss and Perry (1992).

Convergent Validity

Some evidence about the convergent validity for the AQ-PA essentially is established showing significant correlations among tests that are purported to measure the same or similar constructs. The correlation values among AQ-PA, DIAS, STAXI, EXPAGG and BIS are shown in Table 3. All these correlations are quite high and significant (p < .001).

Discussion

The main aim of this report is to provide an adaptation of the original aggression questionnaire (Bush & Perry, 1992) to measure aggression and its four factors - physical aggression, verbal aggression, anger and hostility - in Spanish young subjects. This revised version of the questionnaire, which we have called AQ-PA, has proved to have adequate internal consistency and a satisfactory fitting to the four-factor model originally proposed by the researchers who developed the AQ scale, although some differences in the relationships among the four factors (PA, VA, A and H) of the AQ-PA had been observed between pre-adolescents and adolescents (Santisteban et al., 2007). The present work confirms that despite the small differences between both age groups, the confirmatory-factor analysis indicates that the four-factor model provides a good fitting to the overall data. This is in spite of the low factor loading for item 24 which is a reverse score item. Difference in responses to the two types of items (direct and reversed scored) has been found. Nakano (2001) remarks the differences between Japanese individuals and US individuals suggesting that the AQ may be improved psychometrically if the two reversed scored items were removed from the scale for cross-cultural use. Other authors pointed out that the assignment of the single items did not in all cases agree with the original scale on an item level and with respect to the interpretation and denomination of the factors (e.g., Fossati et al., 2003; Garcia-León et al., 2002; Meesters et al., 1996; Nakano, 2001; von Collani & Werner, 2005).

Another reason could also be adduced to specifically address the issue regarding to the factor structure reproducibility of the AQ in samples composed of subjects aged from 9 to 11. Most of AQ translations into other languages mainly applied to university student samples with a significantly higher representation of females than males, although significant gender and age differences always appear when using the AQ. One exception is the Italian version (Fossati et al., 2003) applied to a high-school.

Aggressive behaviour may only be explained by the integration of a multitude of factors, where cognitive, emotional and personality variables are interacting with situational and environmental aspects (Anderson & Bushman, 2002). Aggression may be reflected in several of the personality constructs measured by self-reports. The correlations of both the DIAS and the EXPAGG with the AQ-PA measurements are quite high, which means a convergent validity of the AQ-PA. We have also found a significant correlation between the AQ-PA and the STAXI, which measures the following components of anger: state, trait and anger expression index (the degree to which adolescents attempt to control its expression of anger).

Aggressive behaviour is found to be related with some personality traits as impulsivity (Arce & Santisteban, 2006; Hollander & Stein, 1995) and is noteworthy the high correlation found here between AQ-PA and BIS, which
measures the impulsivity trait. Some evidences have been published (Joireman, Anderson, & Strathman, 2003) stating that aggressive behaviour is founded in individual differences such as impulsivity, sensation seeking and the consideration of future consequences. Moreover, the lack of impulse control is seen as one determinant of aggressive behaviour (Vigil-Colet & Codorniu-Raga, 2004).

In conclusion, the results of this study provide additional information to support that the AQ-PA replicates the four-factor structure originally proposed by Buss & Perry and its satisfactory reliability and validity, indicating that it can be useful for the measurement of aggression in young subjects, preadolescents and adolescents.

References


APPENDIX

AQ-PA: The AQ Spanish version adapted to young people

1. De vez en cuando no puedo controlar las ganas de golpear a otra persona.
2. Cuando no estoy de acuerdo con mis amigos, discuto con ellos.
3. Me enredo rápidamente, pero se me pasa enseguida.
4. A veces soy bastante envidioso.
5. Si me provocan lo suficiente, puedo llegar a golpear a otra persona.
6. A menudo no estoy de acuerdo con la gente.
7. Cuando las cosas no me salen como me gustan, se me nota mi enredo.
8. A veces pienso que me merezco cosas mejores y pasarlo mejor.
9. Si alguien me golpea, le respondo golpeándolo también.
10. Cuando la gente me molesta, les digo lo que pienso y discuto con ellos.
11. Algunas veces me siento como una bomba a punto de estallar.
12. Me parece que los otros tienen más suerte que yo.
14. Cuando la gente no está de acuerdo conmigo, no puedo remediar discutir con ellos.
15. Soy una persona tranquila.
16. Me pregunto por qué algunas veces me siento tan mal con la gente.
17. Si tengo que recurrir a la violencia para proteger mis derechos, lo hago.
18. Mis amigos dicen que discuto mucho.
19. Algunos de mis amigos creen que hago las cosas sin pensar.
20. Sé que mis “amigos” me critican a mis espaldas.
21. Hay gente que me enfada hasta tal punto que llegamos a pegarnos.
22. Algunas veces me enredo mucho sin razón.
23. Desconfío de los desconocidos que vienen como muy amiguitos.
24. Nunca encuentro una razón tan grande como para pegarle a una persona.
25. Tengo dificultades para controlar mi genio.
26. Algunas veces siento que la gente se está riendo de mí a mis espaldas.
27. He amenazado a gente que conozco.
28. Cuando la gente se muestra especialmente amigable, me pregunto qué querrán.
29. He llegado a estar tan furioso que rompía cosas.