

## Confirmatory Factor Analysis of the QRI Father's Version in a Portuguese sample of adolescents

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### Introduction

Pierce, Sarason and Sarason (1991) developed the Quality of Relationships Inventory (QRI) based on the interactional-cognitive model of social support. The interpersonal aspects of social support are related to expectations that the individual develops in a given specific relationship and to what extent this relationship is a source of support, conflict and/or depth. Several confirmatory factor analyses (CFA) studies of the QRI were done: 1) Nakano, Sugiura, Aoki, Hori, Oshime, Kitamura et al. (2002), with 40 young Japanese couples, found a structure of two factors: support and conflict; 2) Verhofstadt, Buysse, Rosseel and Peene (2006), with a sample of 286 Belgian couples, found better results for the three-factor solution; 3) The German version of the QRI (Reiner, Beutel, Skaletz, Brahle and Richter, 2012), with a sample of 1,494 participants, confirmed the existence of the three factors: support, conflict and depth.

### Methods

**Objectives:** Perform a CFA to confirm the factorial structure suggested by Pierce et al. (1991); Investigate the association between the subscales support, depth and conflict. **Instrument:** QRI (Pierce et al., 1991). The QRI is a questionnaire consisting of 25 items, which asks about specific relationships with a particular individual. **Sample:** 312 adolescents, 171 females e 141 males, aged between 12 and 17 (M= 13.77, DP= 1.16). **Data Analysis:** CFA was performed with AMOS software. To evaluate the best goodness-of-fit of the IQRI model, we considered:  $\chi^2 / df < 5$ , GFI  $> .90$ , AGFI  $> .90$ , CFI  $> .95$ , TLI  $> .90$  and RMSEA  $< .06$ .  $\chi^2 / df = 1$  as perfect,  $\chi^2 / df$  less than 2 as good, acceptable if less than 5 and unacceptable with 5 or more. RMSEA, values above 0.05 indicated good fit and values of 0.1 or more indicated poor fit (Maroco, 2010; Klein, 2005).

### Results

#### Confirmatory Factor Analysis

**Model 1:** Factorial validity and individual reliability of the items were analyzed, some items had not a factor weight considered acceptable, such as item 24 ( $\lambda = .473$ ), 25 ( $\lambda = .411$ ) and 2 ( $\lambda = .043$ ); the same happened with individual reliability of items 24 ( $r^2 = .224$ ), 25 ( $r^2 = .169$ ) and 2 ( $r^2 = .002$ ). According to the modification indices, we found that these items (2, 14, 19, 24 and 25) had LM trajectories, suggesting items cross-loading on support and depth factors ( $LM > 11$ ;  $p < 0.01$ ). Pierce et al. (1991) verified that these items belonged to conflict factor. Thus, items 2, 24 and 25 were removed.

**Model 2:** Factorial validity and individual reliability proved to be appropriate in Model 2, since all items had standardized weights  $> .05$  and squared weights  $> .25$ . Concerning the modification indices, items 14 and 19 cross-loading on support and depth factors. In the trifactorial model of Pierce et al. (1991) these items belonged to conflict factor. Taking into account theoretical considerations and analyzing the contents of items 14 and 19, we concluded that these items were not directly related to issues of conflict. Thus, items 14 and 19 were removed. The new model (**Model 3**) showed the best goodness of fit (table1).

Table 1. Goodness-of-Fit Indices for the Different Models – IQRI father's version (n=301)

	$\chi^2/df$	TLI	CFI	PNFI	PCFI	RMSEA
Model 1	2.540***	.895	.905	.774	.821	.072
Model 2	2.237***	.931	.931	.798	.837	.064
Model 3	2.180***	.941	.948	.799	.833	.063

Note: TLI: Tucker-Lewis Index; CFI: Comparative Fit Index; PNFI: Parsimony-adjusted Normed Fit Index; PCFI: Parsimony-adjusted Comparative Fit Index; RMSEA: Root Mean Square of Approximation.  
 \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Correlations between subscales:** We found low negative correlations between support and conflict subscales ( $r = -.13$ ;  $p \leq .01$ ), as well as between the depth and conflict ( $r = -.09$ ;  $p \leq .01$ ) subscales. Support and depth showed a positive relationship, with high magnitude ( $r = .76$ ;  $p \leq .01$ ).

### Conclusion

The results of the FCA replicated the factor structure of father version obtained in exploratory factor analyses, in the original study by Pierce et al. (1991) and in the study by Neves (2006).

The Portuguese father version of QRI is composed by 20 items, divided into three factors: Support (items 1, 3, 5, 8, 15, 18 and 22), Conflict (items 4, 6, 7, 9, 20, 21 and 23) and Depth (items 10, 11, 12, 13, 16 and 17). Significant positive correlations were obtained among the measures of support and depth; the more intimate the relationship is, greater the perception of social support. The negative associations obtained between the conflict subscale and subscales of depth and support, seem that the perception of conflict can negatively influence the perception of support and depth. Other studies (Pierce et al., 1991, Neves, 2006 & Matos et al., 2013) also found similar results.

### References

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