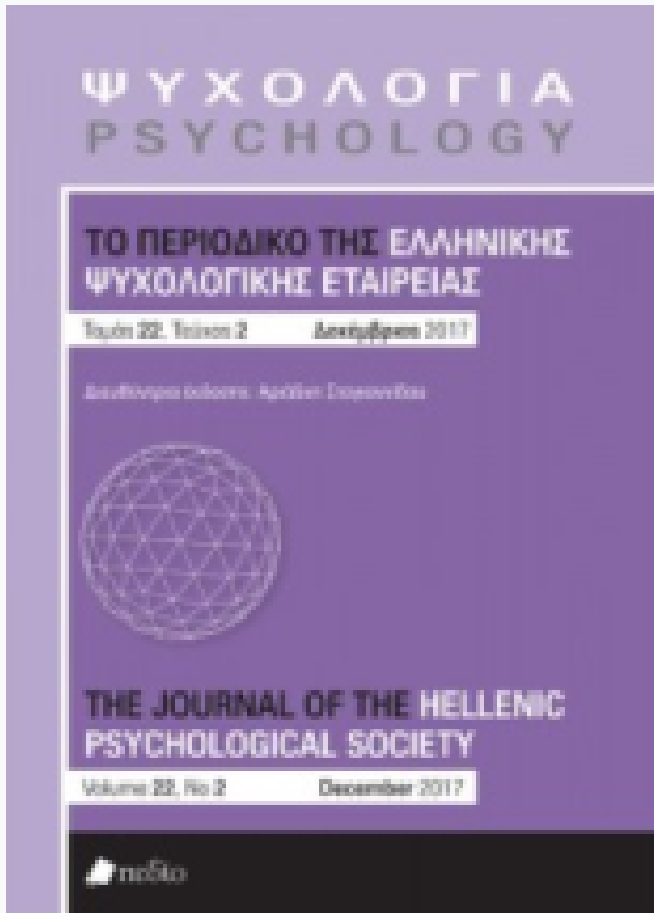


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## Psychometric analysis of the Greek version of the Sibling Relationship Questionnaire

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### ABSTRACT

Siblings' relationships are determinants of emotional and personal development. Although Greece is assumed a country with strong family bonds, no empirical research in this area exists; one of the reasons being the lack of reliable instruments. The SRQ is a widely used scale to measure this relationship. The aim of the present study was to translate and examine the psychometric properties of SRQ. One hundred and eighty five children and adolescents were recruited. Concurrent validity, internal consistency, test-retest reliability and agreement between parents-children versions of the translated scale were investigated. Concurrent validity ranged from 0.29 to 0.68, the overall internal consistency was 0.86 and the test-retest reliability ranged from 0.58 to 0.78. Agreement between children-parents versions was significant only when mothers do the rating. Confirmatory factor analysis for the two important dimensions Warmth/Closeness and Conflict, which have been identified in the original study it shows that they are also present also in the Greek version. Thus, the Greek version of SRQ is a valid and reliable instrument to be used within the Greek population, for multinational clinical research and for comparison with findings from other countries.

*Keywords:* Sibling Relationship Questionnaire (SRQ); Validation, Psychometrics; Translation; Greek version.

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## 1. Introduction

The relationship between siblings is perhaps the most important relationship in an individual's life not only because it is often the longest lasting relationship, but also because the intensity and variety of emotions that siblings experience during their interaction are profound and it is likely that the quality of those interactions plays a central role in shaping the course of each of their lives (Dunn, 1988; Modry –Mandell, Gamble & Taylor, 2007).

Research has documented that the quality of sibling relationship has important developmental implications for them. Findings support a link between positive indicators of sibling relationship, and children's developmental outcomes, social life, and psychological adjustment (Dunn, 1988; Dunn, 2002, Bascoe, Patrick & Cummings 2012). A positive relationship with a sibling may serve as a protective factor for children exposed to stressful experiences (East & Rook, 1992); and along the same line, children reporting a positive sibling relationship exhibit greater emotional, cognitive and social understanding (Howe, Aquan-Assee, Bukowsli, Leroux & Rinaldi, 2001, Milevsky, 2011). On the other hand, siblings experiencing high levels of negativity and conflict, are at far greater risk of behavioural problems, psychological difficulties and antisocial behaviour (Kauffman 1971; Slomkowski, Cohen & Brook 1997; Burraston & Snyder, 2004; Gamble, Yu, & Kuehn, 2011).

However, the mechanisms with which positive and negative qualities of sibling relationships influence individual child adjustment are still a matter of speculation. For instance, older siblings *a.* may serve as role models and agents of socialization for the younger ones *b.* they are also important agents of support (Ardelt & Day, 2002) *c.* they develop psychological difficulties as a direct result of experiencing negativity within those relationships (Fagan & Najman, 2003; Yu & Gamble, 2008) *d.* according to Patterson's "sibling trainer" hypothesis, siblings learn and display in other relationships behaviours that have been internalized through their interaction (Patterson 1986, Bank, Patterson, & Reid, 1996, Slomkowski, *et al.*, 1997) *e.* reciprocal

and complementary interactions between siblings play a prominent role in children's development (Dunn, 2002; Karavasilis Karos, Howe & Aquan-Assee 2007). Nevertheless, current research suggests that the quality of sibling relationship may have an impact, not only on child adjustment but also on the whole family's well-being (Jenkins, Rasbash, Leckie, Gass & Dunn 2012).

Sibling relationships have usually been described as emotionally ambivalent. That is, siblings experience shifts between positive and negative feelings and behaviours (Deater-Deckard, Dunn, 2002). More precisely, the following dimensions have been observed and studied: *a) Warmth dimension* (intimacy, pro-social behaviour, companionship, similarity, admiration by the sibling, admiration of the sibling, and affection) versus the *hostility dimension* (quarrelling, antagonism and competition) reported by Sheehan, Darlington, Noller & Freeney, (2004). *b) Positive sibling relationship:* having fun together, smiling, laughing, listening, and supportive comments among both siblings (whilst playing) versus *Destructive sibling conflict:* physical aggression and destructive behaviour (e.g., destruction of toys whilst as playing), Morgan, Shaw, & Olivo (2012). *c) Communication:* the extent to which an adolescent experiences having high quality of communication with other family members (including siblings) versus *d) Trust:* the extent to which an adolescent trusts other family members (including siblings) to respect and accept his or her feelings and wishes (Buist, Debovic, Meeus, & Van Aken, 2001). Although research acknowledges that ambivalence is the main characteristic of the sibling relationship, there is still a lack of understanding of the ideal mixture of positive and negative behaviour (Kramer, 2010).

Despite the fact that siblings' relationship has an important role both during the development and also in later life, it has only recently received the attention of researchers. Research has mainly focused on the contribution of the parent-child relationship to child social- emotional growth and adjustment. Recently, theory and research have expanded to include sibling relationship as an important aspect, not only of the individual psy-

chosocial development but also of the family ecology; the basic theoretical assumption being that all family subsystems seem to contribute to the social and emotional growth of a child (Bank, Burraston, & Snyder 2004).

A number of scales have been developed and used to investigate sibling relationships. Among those which have been predominantly used with children in elementary school and during adolescence are the Sibling Inventory of Behaviour (Schaefer and Edgerton, 1981), the Sibling Relationship Inventory (Stocker & McHale, 1992), and the Sibling Qualities Scale (Cole & Kearns, 2001). Similarly, questionnaires that are rated by parents have been developed, like the Sibling Relationships in Early Childhood questionnaire (Volling & Elins, 1998), the Parental Expectations and Perceptions of Children's Sibling Relationships questionnaire (Kramer & Baron, 1995) and the Sibling Behaviours and Feelings questionnaire (Mendelson, Aboud, & Lanthier, 1994) to rate sibling relationships during the toddler and preschool years. In addition, scales to assess sibling relationships in late adolescence and early adulthood have been designed. Among them are the Adult Sibling Relationship Questionnaire (Stocker, Lanthier, & Furman 1997), the Brother-Sister Questionnaire (Graham-Bermann & Cutler, 1994) and the Lifespan Sibling Relationship Scale (Riggio, 2000).

The Sibling Relationship Questionnaire (SRQ), (Furman, & Buhrmester, 1985) is a widely used scale which is a self-reported measurement, easily administered, and covers the very important time span, that of adolescence. The SRQ and its related scale for adults have been translated and validated in other languages and cultures like Spanish (Tamara, 2011), Hebrew (Scharf, Shulman, & Avigad-Spitz, 2005), Dutch (Derkman, Scholte, Van Der Veld, & Engels, 2010), and German (Heyeres, 2006).

The SRQ has been applied in a number of different studies and has proved to have very good psychometric results. For instance, in the Brody's *et al.*, study (Brody, Stoneman, McCoy, 1994) which forecasted sibling relationships in early adolescence from child temperaments and family pro-

cesses in middle childhood, the SRQ's internal consistency coefficients exceeded the 0.70 and the test-retest reliability averaged the 0.7. In another research on the effects of parenting style and involvement in sibling conflict on adolescent sibling relationships (Milevsky, Melissa, Schlechter, & Machlev, 2011), participants responded to 21 items concerning the extent to which different behaviours occurred within their relationship with a sibling the coefficient was equal to 0.92 for warmth dimension and 0.82 for conflict. The SRQ scale has also been used to measure placement shift, sibling relationship quality and child outcomes in foster care (Linares, Li, Shrout, Brody & Pettit, 2007). Similarly, in a study which examined the effects of parenting style and involvement in sibling conflict on adolescent sibling relationship (Milevsky *et al.*, 2011) the subscales assessing warmth and conflict were found to have high *Cronbach's alphas* ( $\alpha=0.92$  for warmth and  $\alpha=0.82$  for conflict). Along the same line research on bidirectional associations between sibling relationships and parental support during adolescence (Derkman, Engels, Kuntsche, Van der Vost, & Scholte, 2011), *Cronbach's alphas* for warmth was found to range from 0.91 to 0.93 across waves for both siblings and *Cronbach's alphas* for conflict from 0.83 to 0.87.

In Greece, research on sibling relationship is sparse despite the fact that culturally Greece is assumed to be a country with strong family bonds. Evidence for the relationships between siblings in children and adolescents is limited in Greece. A possible reason for that is the lack of instruments translated or adapted that can measure this relationship both quantitatively this relationship. The research and consequently implementation of evidence-based intervention requires reliable and valid measurements.

Thus, in the endeavour to employ an easily administered and valid measure, to assess relationship between siblings and also to be able to compare the results of research between countries, the SRQ was a scale of choice.

The primary aim of this study was to translate an already validated tool, into the Greek language and to provide data on the reliability and validity of

the SRQ in an adolescent Greek general population.

## 2. Method

### Participants

Participants were adolescents aged 13 to 18 years old. Because we wanted a more representative sample which reflects both rural and urban areas, we administered the questionnaires in 12 geographically diverse parts of Greece. Also, one of the parents was asked to fill in the parent's questionnaire. Inclusion criteria were a) to have a brother or sister, b) to speak and to understand Greek.

The approached population was 200 children. From them 187 agreed and completed the questionnaires. Out of the 187, 2 were been excluded as the returned questionnaires had a lot of missing data. Therefore, the studied sample consisted from 185 participants. The response rate was quite high (93%) due to the fact that questionnaires were personally administered.

### Measures

#### *a. Sibling Relationship Questionnaire (SRQ)*

The SRQ is a self-report 48 item questionnaire which measures the perceived quality of the relationships between siblings on a 5-point format ranging from 1 "Hardly at all" to 5 "Extremely much". It yields a total score comprised of the sum of the ratings on each item of the scale except for items 14 and 15 which refer to parental understanding and knowledge. The SRQ comprises four subscales which assess the following sibling relationship dimensions: Warmth/Closeness, Conflict, Rivalry, and Relative Status/Power. The Warmth/Closeness subscale is consisted of seven qualities of the relationship: intimacy, pre-social behaviour, companionship, similarity, admiration by sibling, admiration of sibling, and affection, and each quality is measured by 3 items (total 21 items). The Warmth/Closeness score consists of the average of the each quality scores. The Conflict subscale consisted of three qualities:

quarrelling, antagonism, and competition. Each quality is measured by 3 items (a total of 9 items). Conflict scores consist of the average of the quarrelling, antagonism, and competition. The Rivalry score consists of the average of maternal and paternal partiality (two qualities, 6 items). Finally the Relative Status/Power consisted of four qualities (nurturance of sibling, dominance of sibling, nurturance by sibling and dominance by sibling) and each quality is measured by 3 items (total 12 items). The scores for Relative Status/Power consist of nurturance of sibling, dominance of sibling, minus the scores of nurturance by sibling and dominance by sibling.

There is also a shorter brief version of 39 items which can be used if one is only interested in deriving factor scores.

For the translation and use of the scale permission in writing was given by the authors of the SRQ. The original English questionnaire has been translate into Greek language according to recommended procedures (Acquadro, Conway, Hareendran, & Aaronson, 2008; Sousa & Rojjanasrirat, 2011). The scale was translated into Greek and then back into English independently by two translators. Any inconsistency was discussed with linguistic experts not related to the study and the final version was given to five different educational psychologists, again not related to the study, to administer it and to test out for linguistic adaptations, grammatical mistakes, typing or spelling or other mistakes. Integration of relevant corrections has led to the final Greek language version that was administered to the participants of the study.

#### *b. Impression Rating Scale (IRS)*

Because no other scale existed in the Greek language to measure the relationship between siblings and no "gold standard" exists, we constructed a set of questions which measure each of the four factors proposed by Furman and Buhrmester (1985). We called this scale Impression Rating Scale (IRS) as this gave an overall impression of the relationships. Because this scale was not validated and only reflects general impression of the relationships we use this scale only to measure as-

sociation (concurrent validity) of the translated SRQ. The IRS consists of 13 questions with a response rated to one or zero (yes/no). The Warmth/Closeness, the Conflict and the Relative Status/Power relationships were assessed with three questions, and the Rivalry relationship with four questions.

### **Ethics**

The study was conducted in compliance with the ethical standards of research with human subjects of the University of Aegean. The protocol was approved by the Aegean University Institutional Review Board (IRB) although the project did not involve any harm or risk to the participants. Also, permission was obtained from the Headmasters of the schools and the teachers of the schools.

### **Procedures**

We contacted the children through their teachers. A contact letter was sent to parents informing them of the study and asked for their consent for the test to be administered to their children as well as to the parents themselves. Less than 2 % answered that they would not wish to participate in the study. The SQR for parents was administered in their homes by trained researchers after telephone contact with the parents in order to find a suitable time for them.

### **Analyses of Data**

All data was coded and entered into SPSS v19 for Windows. Evidence of concurrent validity was demonstrated by comparing the scores of each subscale of SRQ with the Impression Rating Scale (IRS) scores by using correlation coefficients. The internal consistency (reliability) of the translated scale was investigated by using Cronbach's alpha. Test-retest reliability was evaluated by two methods: paired test and correlation coefficients. The agreement between parents and children's versions of the translated SRQ was investigated by using correlation coefficients. Finally, a confirmatory Factor Analysis (CFA)

was performed to establish the factor structure underlying the translated version of the SRQ by using the "lavaan" R Package (Rosseel, 2012).

## **3. Results**

### **Demographics**

The mean age of the studied sample (N=185) was 14 (SD 2.3) years old, the range was from 10 years old to 18 years old and 110 (59.5%) were females. A hundred and fifteen participants (62%) were from urban areas and the rest from rural ones. Specifically, the numbers (%) of participants of each area were: Athens n=78 (42.2%), Laconia n=48 (25.9%), Kalamata n=13 (7%), Kalabaka n=10 (5.4%), Lamia n=10 (5.4%), Heraklion n=8 (4.3%), Sperheiada n=7 (3.8%), Thessaloniki n=4 (2.2%), Serres n=3 (1.6%), Rhodes n=2 (1.1%) Kozani n=1 (0.5%) Kilikis n=1 (0.5%).

Eighty three (44.9%) of the responded children were the eldest in the family, 76 (41.1%) the second child, 20 (10.8%) the third child and 6 (3.2%) the fourth. The average number of children in each family was 2.5 (SD=0.78), ranging from 2 to 6.

### **Concurrent validity.**

Concurrent validity was examined by comparing each one of the four subscales (Warmth/Closeness, Conflict, Rivalry, Relative Status/Power) of the SRQ with the Impression Rating Scale (IRS) scores using Spearman's rho correlation because the data were not normally distributed. The distribution of the data (means, Skewness, Kurtosis) are showed in table 1. Table 2 shows the correlations coefficients (rho) and p values. The correlations were acceptable and all of them significant.

### **Reliability analysis**

#### **Internal consistency**

The internal consistency of the translated SRQ was measured with Cronbach's alpha. For the entire scale (48 items) the Cronbach's alpha was 0.86. However, we further investigated the internal

**Table 1**  
**Distribution of data means, Skewness, Kurtosis.**

	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Warmth/Closeness	3.45	.65	-.30	.17	-.59	.35
Relative Status/Power	.38	1.92	-.58	.17	1.72	.35
Conflict	2.98	.77	.25	.17	-.79	.35
Rivalry	1.70	.39	1.71	.17	3.63	.35
Warmth (IRS)	.73	.33	-.98	.17	-.27	.35
Conflict (IRS)	.48	.35	.01	.17	-1.23	.35
Rivalry (IRS)	.19	.22	1.01	.18	.32	.35
Power(IRS)	1.66	.27	-.58	.17	-.13	.35

**Table 2**  
**Spearman's Correlations coefficients between subscales.**

Impression Rating Scale \ SRQ	Warmth (IRS)	Conflict (IRS)	Rivalry (IRS)	Power(IRS)
Warmth/Closeness	rho=.64, p<.001, n=185			
Conflict		rho=.68, p<.001, n=185		
Rivalry			rho=.21, p=.005, n=183	
Relative Status/Power				rho=.39, p<.001, n=185

consistency of each subscale. For the Warmth/Closeness subscale the Cronbach's alpha was equal to 0.92. (Corrected item-total correlation: max= 0.70, min=0.35). For Conflict the Cronbach's alpha was equal to 0.84. (Corrected item-total correlation: max= 0.71, min=0.32). For Rivalry the Cronbach's was equal to 0.58, (Corrected item-total correlation: max= 0.52, min=0.17) and finally for the Relative Status/Power subscale the Cronbach's alpha was equal to 0.66. (Corrected item-to-

tal correlation: max= 0.42, min=0.17). Thus, the translated SRQ shows a very good internal consistency overall and in the two subscales.

#### **Test-retest reliability**

It is assumed that the relationship between siblings does not change very much in short time so the test-retest reliability of the translated scale was also investigated. A random sample of 60 children,



**Table 3**  
The Wilcoxon signed-rank test.

	Warmth retest - Warmth (n=55)	Conflict retest - Conflict (n=57)	Rivalry retest - Rivalry(n=57)	Power retest - Power (n=56)
Mean Rank	18.63	14.19	7.78	26.06
	21.00	16.00	6.08	21.45
Z	-1.11	-0.21	-0.64	-1.20
Asymp. Sig. (2-tailed)	0.27	0.84	0.53	0.21

**Table 4**  
Test- retest reliability coefficients.

	warmth (retest)	Conflict (retest)	Rivalry (retest)	Relative Status/Power
Warmth/ Closeness	rho=.78, p<.001, n=55.			
Conflict		rho=.89, p<.001, n=57		
Rivalry			rho=.65, p<.001, n=56	
Relative Status/Power				rho=.58, p<.001, n=56

who had taken part, were chosen and approached again two months later. Out of those (60), 58 returned the questionnaires. To investigate the test-retest reliability of the translated SRQ we used two statistical methods: a) The Wilcoxon signed-rank test to estimate the stability of the scale across time and b) Spearman's rho correlation to investigate if the scales are correlated in those two points of time. The results of the paired Wilcoxon test are showed in table 3. There were not significant differences between test- retest of each subscale. Thus, assuming that the underlying concept (sibling's relationship) does not change very much in the short term, it seems from this analysis that the translated scale can reliably be used at different points of time. In table 4 the correlation coefficients (Spearman's rho) of the scales were also given. Thus, the test-retest reliability of the translated

scale is acceptable with only one subscale having low reliability (Relative Status/Power) but still acceptable and statistically significant.

#### **Agreement between parent's version and children's**

One hundred and six parents returned the questionnaires (88 mothers and 14 fathers). We further investigated the agreement between the parents and children's version of the translated SRQ by using Spearman's rho correlation. Table 5 shows the results.

As can be seen on table 5, the agreement in the subscales Warmth/Closeness and Conflict was good but in the Rivalry scale the coefficient was low and the direction negative although still significant. However, in the Relative Status/Power subscale



**Table 5**  
**Spearman's Correlations coefficients between parents and children versions of SRQ.**

Parent's SRQ	Warmth/Closeness (parent)	Conflict (parent)	Rivalry (parent)	Relative Status/Power
Children's SRQ				
Warmth/Closeness	rho=.61, p<.001, n=85			
Conflict		rho=.45, p<.001, n=98		
Rivalry			rho=-0.34, p=.001, n=98	
Relative Status/Power				rho=-0.16, p=0.106, n=100

there was no agreement. Because this finding was unexpected and can be contributed to a badly translated scale or to an overestimation/underestimation of parents or children, we further analysed the agreement according to the respondents' parent gender (mother/father). When the agreement of the scales was separately analysed by parent's gender it was revealed that the agreement was better. Mothers had a better agreement in all the scales with children. On the contrary, the father's rating had no significant correlation with the children's rating in any subscales. For instance, for the mothers-children agreement in the Warmth/Closeness subscale, the rho was equal to 0.66, ( $p < .001$ ,  $n = 71$ ). Similarly, for the other subscales was: Conflict: rho=.49,  $p < .001$ ,  $n = 84$ , Rivalry: rho=.39,  $p < .001$ ,  $n = 82$ , and Relative Status/Power: rho=.30,  $p = .02$ ,  $n = 85$ .

Therefore, it seems that the perceptions which children have about their relationships are different to the perceptions that their parents have and also that there are differences of perceptions between mothers and fathers.

### Factor Analysis

For the CFA we used the 39 items scale as suggested by Furman (personal communication). However, given the relatively small sample size for

a CFA we examined only the two most important factors Warmth/Closeness and Conflict as per previous work (Derkman, *et al.*, 2010). Those two factors are second order factors and they are measured by 21 items. Because each item is rated on a Likert scale we used the diagonal weighted least square to analyse the covariance matrix. The assessment of the global goodness-of-fit of the tested model was based on the indexes: The Root-Mean-Square Error of Approximation (RMSEA), the Goodness of Fit (GFI), the Comparative Fit Index (CFI), and the Root Mean square Residual (RMR). There are not standard accepted thresholds but generally a value of RMSEA below .08 is acceptable. Higher values for GFI indicate a better fit. A value of CFI more than .90 in a model is assumed good. Small values of RMR are better and a 0 value indicates a perfect fit (Hair, Anderson, Tatham & Black, 1998, pp. 653-666). Chi-square, the degrees of freedom, and the probability of the chi-square were also estimated and reported.

The fitted model with the completely standardized estimates is depicted in Figure 1.

For this model the indices were RMSEA=.061, CFI=.97, GFI=.957, RMR=.102 and also the Standardized Root Mean Square Residual (SRMR) = .09, the Normal Fit Index (NFI) = .93, and the Non-Normed Fit Index (NNFI) = .97, and  $\chi^2 = 299.085$ ,  $df: 178$ ,  $p < .001$ .

Most of the first-order factor loadings were high, with loadings above .70. The factor loading on item 26 (antagonism) was low but still acceptable. The second-order factor loadings were all above 0.70. All factor loadings were significant ( $p < .001$ ). A negative correlation between Warmth/Closeness and Conflict was found which was expected. Therefore given the loadings and the satisfactory indices of fit we kept this as a final model.

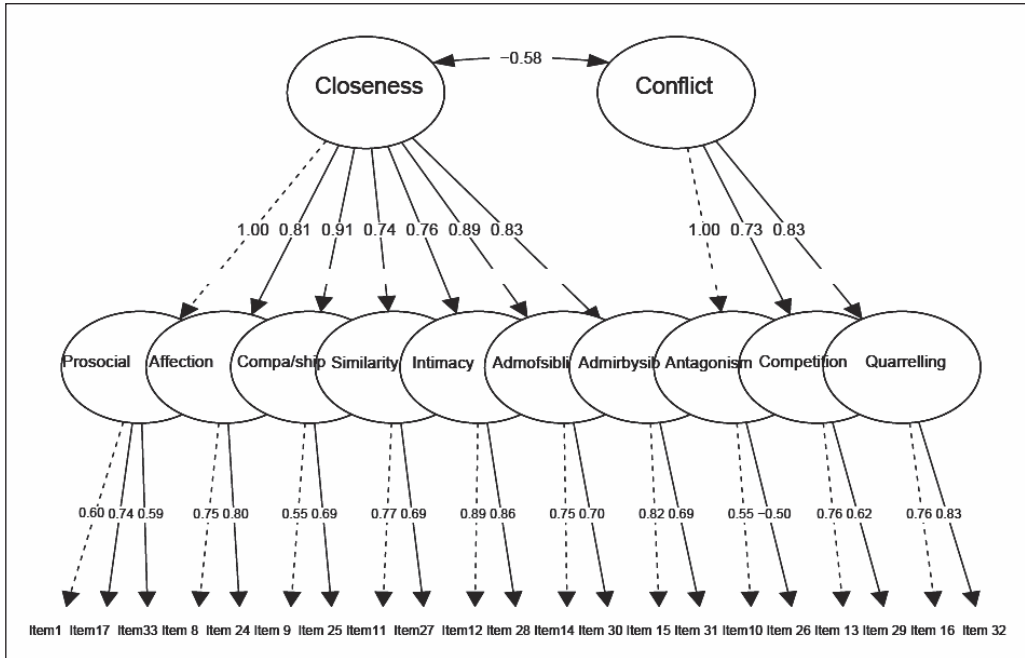
## 5. Discussion

According to the results, the translated SRQ shows an acceptable concurrent validity in the overall and in the subscales. Similarly, the test-retest reliability of the translated scale was very good. Although in this study more emphasis was given to the psychometric properties of the Greek translation of the SRQ than in the perceptions of the relationships or other factors that may influence them, it is worth noting the discrepancies in the rating between fathers, mothers and children in the Relative Status/Power and Rivalry subscales. It is a fact that in the subscales, internal consistency was low (table 5). Mothers had a better agreement in all scales with children. In contrast, the fathers' rating had no significant correlation with the children's ratings in any subscales. Although moderate level of agreement has also been found in other studies (e.g. Linares, *et al.*, 2007), the consistence of the present study is low. There may be some reasons for this; Perhaps the small number of items in each subscale and also the scoring system (e.g. in maternal and paternal the partialities are scored from the middle) can influence the estimates of the coefficients. However, this is in contrast with the results of previous studies in which the scale has been used and in which the coefficients were higher. Perhaps this inconsistency might be attributed to bad rating but it might also be attributed to the fact that the perception that family members have of their relationships may be influenced by other factors like age, or gender (Furman, & Buhrmester, 1985). More often than not, family members are found to have an individual perception of certain as-

pects of their relationships. That is, each member may fail to see or may focus too much on certain aspects of relationships as a result of projections. That is, members of a family have on the one hand a common representation of certain aspects of the family's member relationships and on the other, they perceive differently other aspects differently (Tackett 2011). The difference in the perception of status/power revealed in the present study is probably due to the individual parental representation of our sample. Parents are biased. (Kroes, Veerman, and De Bruyn 2003). This interpretation is strengthened by the fact that further analysis by parents' gender (mother/father) revealed that the agreement was better. Mothers had a better agreement in all the scales with children. On the contrary, the fathers' rating had no significant correlation with the children's rating in any subscales. This, perhaps, can be explained by the fact that mothers are closer to children than fathers who therefore give experience of their children's relationship from another angle, but perhaps also that the number of fathers is small compared to the mothers included in the sample (14 fathers versus 88 mothers). Finally, another possible reason for the low consistency may be attributed to the fact that parents, who were administered the SRQ at home, wanted to give a positive picture of their children's relationship, as the contact with the interviewer was personal. Whatever reason(s) is/are behind this inconsistency in the rates between fathers and children cannot be elicited by the design of this study.

In addition, we examined the factorial validity of the Greek version of SRQ but only for the two dimensions Warmth/Closeness and Conflict. We found that the theoretical model of the SRQ also holds in the Greek version. In addition, we found a negative relationship between those two dimensions. A previous study which investigated those two dimensions within a Dutch population, also using CFA, reported similar results to our study (Derkmann, *et al.*, 2010).

The main aim of this study (as mentioned above) was to evaluate the Greek translation of the instrument. Thus, it seems that the translated Greek version of SRQ is a valid and reliable instru-



**Figure 1**  
**Path diagram of the CFA model (21 items) with the standardized estimates.**

ment to be used in measurements of sibling's relationships in Greek populations, and because the SRQ is an internationally recognised and used scale, we think that the most important benefit of this translation and standardisation is that SRQ can be used as a measurement for multinational clinical research and comparison with other countries.

A potential limitation of this study is that it was carried out in only a small sample of Greek families and although care was taken for this sample to be from different geographical areas may still not be representative of the total population. Further evaluation of the Greek translated SRQ in a larger sample and in different research projects remains a task for future research. A second limitation of the present study is the lack of a "gold standard" or another similar validated scale with which comparisons could be made. This did not allow us to use full statistical analyses (e.g. agreements). So as to avoid this shortcoming, we had to use correlation coefficients instead.

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## Ψυχομετρική Ανάλυση της Ελληνικής εκδοχής του Sibling Relationship Questionnaire (SRQ)

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### ΠΕΡΙΛΗΨΗ

Οι αδελφικές σχέσεις συνιστούν σημαντικό παράγοντα δόμησης της συναισθηματικής αλλά και της όλης ανάπτυξης του ατόμου. Παρά το ότι η Ελλάδα είναι μια χώρα όπου οι οικογενειακοί δεσμοί είναι ισχυροί, η έρευνα στο πεδίο της αδελφικής σχέσης είναι ελάχιστη. Η έλλειψη αυτή οφείλεται, εν μέρει, στην απουσία έγκυρων δοκιμασιών. Το SRQ, συνιστά μια ευρέως χρησιμοποιούμενη δοκιμασία στην έρευνα της αδελφικής σχέσης. Στόχος της έρευνας είναι να μεταφράσει και να αναλύσει της ψυχομετρικές ιδιότητες του SRQ. Το δείγμα της έρευνας αποτέλεσαν 185 παιδιά και έφηβοι. Διερευνήθηκαν τα εξής: συγκλίνουσα εγκυρότητα, εσωτερική συνέπεια, επανέλεγχος αξιοπιστίας, συμφωνία ανάμεσα στις δοκιμασίες των παιδιών και των γονιών. Η συγκλίνουσα εγκυρότητα κυμαινόταν από 0.29-0.68, η εσωτερική συνέπεια ήταν 0.86 και ο επανέλεγχος αξιοπιστίας κυμαινόταν από 0.58-0.78. Η συμφωνία ανάμεσα στις δοκιμασίες των παιδιών και των γονιών ήταν σημαντική μόνο ως προς της μητέρες. Η παραγοντική ανάλυση των δυο σημαντικότερων διαστάσεων της αδελφικής σχέσης (ζεστασιά/εγγύτητα και σύγκρουση) όπως εντοπίστηκαν στην πρωτότυπη έκδοση της δοκιμασίας, έδειξε ότι είναι εξίσου σημαντικές στην Ελληνική εκδοχή του SRQ. Συνεπώς, η Ελληνική εκδοχή του SRQ συνιστά μια έγκυρη και αξιόπιστη δοκιμασία που μπορεί να χρησιμοποιηθεί στον Ελληνικό πληθυσμό και σε συγκριτικές έρευνες με πληθυσμούς άλλων χωρών.

Λέξεις-Κλειδιά: Sibling Relationship Questionnaire (SRQ), Εγκυρότητα, Ψυχομετρία, Μετάφραση, Ελληνική έκδοση.

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