

THE POLISH SHORT VERSION OF THE ADULT SIBLING RELATIONSHIP QUESTIONNAIRE (ASRQ-SF): PRELIMINARY REPORT

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Abstract: The aim of the present study was to investigate the psychometric properties of the Polish short version of the Adult Sibling Relationship Questionnaire (ASRQ-SF). The study comprised 1000 participants (52.6% females). Their age ranged from 18 to 83 years ($M = 34.3$, $SD = 15.11$). Exploratory factor analysis revealed three factors as in the original and the Polish versions of ASRQ. The three ASRQ-SF factors (Warmth, Conflict, Rivalry) showed good internal consistency, Cronbach's $\alpha = .89 - .97$. The three-factor structure was confirmed with the use of confirmatory factor analysis. The model assumed correlations between all of the three factors and between the pairs of items regarding the perception of sibling relationships of the respondent and their sibling. The effect of gender on ASRQ-SF scores was also explored. To assess the external validity of ASRQ-SF, the correlations between the scales of ASRQ-SF and General Health Questionnaire-28 and Mental Health Continuum-Short Form were computed. The correlations were low but statistically significant and in the expected direction.

Key words: Adult sibling relations, Adult Sibling Relationship Questionnaire-Short Form, General Health Questionnaire, Mental Health Continuum-Short Form

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INTRODUCTION

Although over 80% of the world population have siblings, the issues of interpersonal relationships with siblings have enjoyed interest of the researchers of human and family studies for a relatively short time (Rittenour, Myers, & Brann, 2007). When reviewing the relevant literature, it can be noticed that interpersonal relationships with siblings, albeit important in the process of the adaptation of a person to the social environment, has so far attracted less interest than other types of interactions in the family system, such as mother-child, parents-children (Myers, 2015). Family specialists gradually started to expand family research to encompass the role of brothers and sisters in children's early social and cognitive experiences. Early evidence suggested long-lasting and predictive effects of the sibling relationship in early childhood onto the person's level of social adaptation in middle childhood and adolescence (Dunn, 1983; Furman & Buhrmaster, 1985). Later, more and more researchers revealed the importance of siblings in adulthood as well (Cicirelli, 1995; Rostowska, 2010; Szymańska, 2015; Wałęcka-Matyja, 2014).

The limited number of studies on the psychological aspects of sibling relationships in adulthood results from, among other factors, the small number of tools for the measurement of family ties. Questionnaires designed to examine sibling relations in childhood and adolescence are, e.g., the *Sibling Relationship Questionnaire* (Furman & Buhrmester, 1985) and the *Sibling Relationships in Early Childhood Questionnaire* (Volling & Elins, 1998). Among the tools designed for measuring sibling relationships in adulthood, the two most frequently used are the *Adult Sibling Relationship Questionnaire* (Stocker, Lanthier, & Furman, 1997) and the *Lifespan Sibling Relationship Scale* (Riggio, 2000) (cf. Kosiol, 2015). In Poland, there are not enough tools to measure different aspects of the relations between adult siblings and at the same time have sufficiently good psychometric properties (Wałęcka-Matyja, 2015). The present study focuses on the Adult Sibling Relationship Questionnaire (ASRQ) by Stocker et al. (1997).

The Adult Sibling Relationship Questionnaire (ASRQ) measures the respondents' perception of their own behaviour and feelings towards their sibling and their siblings' behaviour and feelings towards them. The factorial analysis has shown the existence of three main factors describing relationships between siblings: Warmth (W), Conflict (C), and Rivalry (R). ASRQ includes 81 items, which make up 14 scales grouped into the three composite factors of sibling relationships: Specifically, *Warmth* comprises the scales of Affection, Knowledge, Intimacy, Emotional Support, Admiration, Similarity, Instrumental Support, Acceptance; *Conflict* comprises Opposition, Domination, Quarrel, and Competition; and *Rivalry* comprises Maternal

Rivalry and Paternal Rivalry. ASRQ makes use of Likert scales to capture the strength of feelings or perceptions. Test-retest correlations of the original ASRQ were found to be statistically significant (Stocker et al., 1997).

ASRQ was adapted to the Polish context by Wałęcka-Matyja (2014). The Polish version was structurally equivalent to the original and had good psychometric properties. Firstly, the results of the exploratory (EFA) and confirmatory (CFA) factor analyses confirmed the factorial structure of the original version of the ASRQ, and the three main ASRQ factors (Warmth, Conflict, Rivalry) showed good internal consistency. Cronbach's α ranged from .87 to .97. Correlations between the individual subscales constituting the main factors demonstrated similar patterns to those of the original version of the ASRQ (Wałęcka-Matyja, 2014).

However, ASRQ is very long (81 items). To be able to use it in complex research designs, taking a lot of variables and diverse age groups into account, it is essential to develop a short version of it. To this end, a short version of the original ASRQ – called Adult Sibling Relationship Questionnaire-Short– was developed. ASRQ-S was developed by Lanthier, Stocker, and Furman (2000) and presented in an unpublished manuscript at the University of Denver (see Wallace, 2012). ASRQ-S consists of 47 items making up eight scales of the components of the three main factors: Warmth (Intimacy, Emotional Support, Knowledge), Conflict (Quarrel, Opposition, Domination), Rivalry (Maternal Rivalry, Paternal Rivalry). By using a weighting of 20 items for each of these scales, responses are scored on either a 3- or 4-point scale ranging from 1 to 3 or 1 to 4. Rivalry is made up of Maternal and Paternal Rivalry and these scales are scored as “the absolute value of deviations from the mid-point of the scale” (Lanthier et al., 2000; see Wallace, 2012). Scores range from 0 to 2, with 0 indicating absence of rivalry and 2 indicating maximum rivalry. The ASRQ-S has been shown to correlate highly with the original ASRQ, for example, $r = .95$ for Warmth and $r = .97$ Conflict. The ASRQ-S has been found to be internally consistent, Cronbach's $\alpha = .96$ for Warmth, $\alpha = .93$ for Conflict, and $\alpha = .91$ for Rivalry (Lanthier et al., 2000; cf. Wallace, 2012).

Aims and hypotheses of the study

An attempt for a short form of ASRQ was also undertaken in Poland. It was important to compare the results obtained in the Polish short version of ASRQ with the results obtained by the authors of ASRQ-S. For this purpose, studies were undertaken using the 81 items of the ASRQ of the Polish adaptation, the results of which formed the basis for the development of the Polish ASRQ-Short Form. There were three main research goals in the process of ASRQ-SF development (Wałęcka-Matyja, 2014). The first was to establish the factorial structure of the tool based on

the results of Principal Component analysis. The second concerned the determination of the reliability of ASRQ-SF, and the last goal was related to the external validity of the ASRQ-SF. Based on the relevant literature and the extant empirical data (Dąbrowski, 1996; Dunn, 1983; Furman & Buhmaster, 1985; Makowska & Merecz, 2001; Stocker et al., 1997; Wałęcka-Matyja, 2014), five hypotheses were formulated: (a) the Polish version of the ASRQ-SF will confirm the three-factor solution of the original scale; (b) the factor of Warmth will be negatively correlated with the dimensions of Conflict and Rivalry; (c) there will be positive correlations between the factors of Conflict and Rivalry; (d) there will be negative correlations between the Warmth and the scales of GHQ-28, which include the Somatic systems of Anxiety, Social dysfunction, Depression and the general indicator of mental health; and (e) the factor of Warmth will be positively correlated with the the dimensions of Psychological well-being: Emotional well-being, Social well-being, Psychological well-being and the MHC-SF total score.

METHOD

Participants

Participants were 1000 adults from Poland, aged 18 to 83 ($M = 34.3$, $SD = 15.11$). Of them 52.6% were women ($n = 533$) and 47.4% men ($n = 467$). The data were collected in 2014 – March 2016 in two studies in two independent samples. In Study 1, there were 465 participants (50.8% females) aged 18-83 ($M = 43.3$, $SD = 16.46$). In Study 2, there were 535 respondents (55.5% females) aged 18-59 ($M = 26.5$, $SD = 7.77$). The participants were students of different faculties of the University of Łódź, the Technical University of Łódź, H. Kretz University of the Third Age, members of special interest groups organized by culture centres in Bałuty, and employees of companies located in the district of Łódź. Participation was voluntary. Student participants were recruited during class lectures. All participants had adult siblings, aged at least 18 years of age.

Measures

Firstly, participants completed their sociodemographic data (age, gender, type of relationships between the examined people and their siblings, place of residence, marital status, economic situation, activity in the labour market). They also completed the following questionnaires:

Adult Sibling Relationship Questionnaire (ASRQ)

The questionnaire was constructed by Stocker et al. (1997) and was adapted to Polish by Wałęcka-Matyja (2014). It assesses the person's relationship with adult siblings with respect to three dimensions: Warmth (W), Conflict (C) and Rivalry (R). The three dimensions consist of 14 subscales (see above). The psychometric properties of ASRQ are satisfactory, with Cronbach's α for the individual dimensions ranging from .87 to .97. In the original version of ASRQ, Cronbach's α was in the range of .88 - .97, in the German adaptation it ranged from .94 to .75, and in the Italian version from .81 to .90 (Heyeres, 2006; Stocker et al., 1997; Tani, Guarnieri, & Ingoglia, 2013). The ASRQ was used in both Study 1 and Study 2.

General Health Questionnaire (GHQ-28)

GHQ-28 (Goldberg & Hillier, 1979; Polish adaptation: Makowska & Merez, 2001) assesses the frequency of various mental and physical states during the last couple of weeks. The questionnaire comprises 28 items that form four scales: Somatic symptoms, Anxiety and insomnia, Social dysfunction, and Depression. GHQ-28 was used only in Study 1.

Mental Health Continuum-Short Form (MHC-SF)

MHC-SF (Keyes, 2008) as adapted in Polish by Karaś, Ciecuch, and Keyes (2014) consists of 14 items that represent three dimensions of well-being: social, psychological, and emotional. The psychometric properties of MHC-SF are satisfactory, with Cronbach's α for the three individual dimensions ranging from .82 to .87 and the full scale .91 (Karaś et al., 2014). This tool also allows for categorization of participants into three types of mental health: flourishing, languishing, and moderate mental health. The Mental Health Continuum-Short Form was used only in Study 2.

Procedure

Participants were informed about the aim of the study, anonymity of responses and use only for research purposes. The study was conducted with the permission of the Scientific Council of the Institute of Psychology of the University of Łódź and was partly financed by a grant of the Dean of the Faculty of Educational Science of the University of Łódź.

Data analysis

Statistical analyses were carried out using SPSS (version 22). Initially, exploratory factor analysis was applied to the Polish version of ASRQ. Confirmatory factor analysis (CFA) was then used to test the latent structure of ASRQ-SF. Second, the internal consistency was assessed with Cronbach's alpha coefficient. The effect of gender was tested with Student's *t*-test and Bonferonni's adjustment. Pearson's correlation coefficient was applied to assess the external validity, namely the relations of ASRQ-SF with mental health (somatic symptoms, anxiety/insomnia, social dysfunction, depression) and well-being (social, psychological, and emotional).

RESULTS

Factorial structure of the Adult Sibling Relationship Questionnaire-Short Form (ASRQ-SF)

Exploratory factor analysis

In order to develop a short version of the ASRQ, the main components of the questionnaire were analysed on the total sample ($N = 1000$) with the use of Principal Components analysis with Oblimin rotation. Oblimin rotation was chosen because of the assumed interrelations between the three factors reflecting the relationship between siblings (Stocker et al., 1997). Three factors were extracted. The first of them, Warmth, explained 29.55% of the variance; the second factor, Conflict, explained 10.56% of the variance, and the third one, Rivalry, explained 5.76% of the variance. The sums of the squares of the loadings after the rotation were respectively 23.07 for Warmth, 9.91 for Conflict, and 8.88 for Rivalry. The KMO measure of sampling adequacy was 0.93, exceeding the threshold value of 0.5. Bartlett's test of sphericity was also significant, $\chi^2(3240) = 6232.15$, $p < .001$. Table 1 shows the factor matrix. The values were sorted from highest to lowest.

Items with factor loadings higher than .60 were selected to be included in the short version of the questionnaire (ASRQ-SF) (Field, 2005). In the case of Conflict, in order to preserve the structure that is based on pairs of questions about the perception of sibling relationships both of the respondent and their sibling, the additionally included items were 15, 47, 62 and 19. The factor loading of item 15 was .59, item 47 was .58, item 62 was .58 and item 19 was .43. Following the above procedure, the ASRQ-SF contains 61 items (in Table 1 they are highlighted in bold).

Table 1. Principal component analysis with oblimin rotation of the items of ASRQ

| Item no. | Factor | | |
|----------|--------|----------|---------|
| | Warmth | Conflict | Rivalry |
| 2 | .81 | | |
| 67 | .79 | | |
| 32 | .79 | | |
| 80 | .79 | | |
| 28 | .79 | | |
| 68 | .79 | | |
| 5 | .78 | | |
| 3 | .78 | | |
| 6 | .78 | -.14 | |
| 13 | .78 | | |
| 14 | .78 | | |
| 33 | .78 | | |
| 79 | .77 | | |
| 29 | .76 | | |
| 40 | .76 | -.13 | |
| 55 | .74 | -.11 | |
| 53 | .73 | | |
| 63 | .73 | -.12 | |
| 56 | .72 | -.16 | |
| 1 | .71 | | |
| 52 | .70 | .11 | |
| 54 | .70 | | |
| 41 | .69 | | |
| 60 | .69 | | |
| 10 | .69 | | |
| 75 | .68 | -.10 | |
| 64 | .68 | -.18 | |
| 25 | .67 | | |
| 59 | .67 | | |
| 76 | .65 | -.21 | |
| 26 | .65 | | |
| 9 | .63 | | |
| 21 | .63 | -.28 | |
| 22 | .62 | -.25 | |
| 18 | .62 | .21 | |
| 71 | .58 | | -.12 |
| 81 | .57 | | -.10 |
| 17 | .57 | .26 | |
| 48 | .56 | -.22 | |
| 27 | .55 | | |
| 49 | .52 | -.28 | |
| 45 | .52 | .27 | |
| 36 | .52 | .12 | |
| 37 | .47 | .12 | |
| 72 | .47 | .11 | |

(Continued)

Table 1 (Continued)

| | | | |
|-------------------------|-------|------------|------------|
| 44 | .42 | .31 | |
| 34 | -.13 | .75 | |
| 35 | | .71 | |
| 4 | | .71 | |
| 30 | | .70 | |
| 61 | -.19 | .64 | |
| 8 | -.17 | .64 | |
| 7 | | .63 | |
| 16 | | .63 | |
| 31 | -.14 | .62 | |
| 73 | -.14 | .62 | |
| 46 | | .62 | |
| 74 | | .61 | |
| 15 | | .60 | |
| 47 | .14 | .58 | |
| 62 | | .58 | |
| 42 | | .52 | .19 |
| 43 | | .50 | .13 |
| 69 | | .49 | |
| 20 | .16 | .49 | |
| 70 | | .48 | |
| 19 | | .43 | |
| 57 | | .40 | |
| 58 | | .40 | |
| 77 | | | .79 |
| 78 | | | .76 |
| 50 | | | .74 |
| 65 | | | .73 |
| 51 | | | .72 |
| 66 | | | .71 |
| 38 | | | .67 |
| 23 | | | .66 |
| 24 | | | .64 |
| 39 | | | .63 |
| 11 | -.12 | | .56 |
| 12 | | | .56 |
| Eigen values | 23.07 | 9.91 | 8.88 |
| % of explained variance | 29.55 | 10.56 | 5.76 |

The ASRQ-SF structure was validated with the use of confirmatory factor analysis. The model assumed three factors and covariances between them as well as between pairs of items tapping perception of sibling relationships of the respondent and their sibling. All of the factor loadings and covariances between the three factors were statistically significant. The model is given in Table 2. The fit indexes were: χ^2 (1769, $N = 995$), $p < .001$, CFI = .87, RMR = .07 and RMSEA = .06 with range of confidence interval from .05 to .06. Despite the statistically significant χ^2 test the

model is considered well fitted because the sample size was larger than 400 cases and the χ^2 test is considered reasonable measure of fit when the sample size does not exceed 400 cases (Kenny, 2015).

Table 2. Confirmatory factor analysis

| Item | Factors | | | E |
|------|---------|----------|---------|-----|
| | Warmth | Conflict | Rivalry | |
| 13 | .77 | | | |
| 6 | .82 | | | .04 |
| 3 | .76 | | | .04 |
| 5 | .80 | | | .03 |
| 68 | .76 | | | .04 |
| 28 | .78 | | | .04 |
| 80 | .78 | | | .03 |
| 32 | .80 | | | .03 |
| 67 | .80 | | | .04 |
| 2 | .83 | | | .04 |
| 14 | .75 | | | .02 |
| 33 | .78 | | | .03 |
| 79 | .74 | | | .03 |
| 29 | .74 | | | .04 |
| 40 | .78 | | | .03 |
| 55 | .73 | | | .03 |
| 53 | .71 | | | .03 |
| 63 | .74 | | | .03 |
| 56 | .74 | | | .03 |
| 1 | .74 | | | .03 |
| 52 | .65 | | | .03 |
| 54 | .68 | | | .03 |
| 41 | .67 | | | .03 |
| 60 | .69 | | | .04 |
| 10 | .67 | | | .04 |
| 75 | .67 | | | .03 |
| 64 | .70 | | | .04 |
| 25 | .72 | | | .03 |
| 59 | .66 | | | .04 |
| 76 | .65 | | | .03 |
| 26 | .67 | | | .03 |
| 9 | .61 | | | .03 |
| 21 | .66 | | | .03 |
| 22 | .67 | | | .03 |
| 18 | .58 | | | .04 |
| 45 | .44 | | | .04 |
| 62 | | .51 | | |
| 47 | | .49 | | .10 |
| 15 | | .47 | | .10 |
| 74 | | .54 | | .09 |

(Continued)

Table 2 (Continued)

| | | | |
|----------------------------|------|-----|-----|
| 46 | .51 | | .12 |
| 73 | .59 | | .13 |
| 31 | .66 | | .14 |
| 16 | .56 | | .12 |
| 7 | .67 | | .14 |
| 8 | .73 | | .15 |
| 61 | .63 | | .08 |
| 30 | .69 | | .14 |
| 4 | .74 | | .14 |
| 35 | .69 | | .13 |
| 34 | .76 | | .15 |
| 39 | | .50 | .06 |
| 24 | | .63 | .04 |
| 23 | | .66 | .05 |
| 38 | | .53 | .05 |
| 66 | | .55 | .05 |
| 51 | | .74 | .05 |
| 65 | | .53 | .04 |
| 50 | | .79 | .05 |
| 78 | | .79 | .03 |
| 77 | | .79 | |
| 19 | .38 | | .11 |
| <i>Factor correlations</i> | | | |
| Warmth-Conflict | -.30 | | |
| Warmth-Rivalry | -.33 | | |
| Conflict-Rivalry | .25 | | |

Note: In order to obtain results of confirmatory analysis regression weight of one item in each scale was constrained to one. Standard error values are not computed for those items.

Reliability of ASRQ-SF

The internal consistency reliability of the three scales of ASRQ-SF was computed with Cronbach's alpha. The α coefficient was .97, .91, and .89 for Warmth, Conflict, and Rivalry, respectively. All of the coefficients were highly satisfactory and similar to those obtained by Wallace (2012) in the ASRQ-S in which Cronbach's alphas were .96, .91, and .91 for Warmth, Conflict, and Rivalry, respectively.

Gender effects

The means and standard deviations of the scores representing each of the three scales of ASRQ-SF are presented in Table 3.

Table 3. Means and standard deviations of scores in the three scales of ASRQ-SF as a function of gender along with t-test values and effect sizes

| ASRQ-SF Scales | Examined group | | Women | | Men | | t | p | Cohen's d |
|----------------|----------------|------|---------|------|---------|------|-------|--------|-----------|
| | N = 1000 | | n = 533 | | n = 467 | | | | |
| | M | SD | M | SD | M | SD | | | |
| Warmth | 3.74 | 4.64 | 3.9 | 4.59 | 3.6 | 4.66 | -4.42 | < .001 | -0.06 |
| Conflict | 2.95 | 3.67 | 3.0 | 3.65 | 2.8 | 3.68 | -1.98 | .048 | 0.20 |
| Rivalry | 0.50 | 2.91 | 0.5 | 2.95 | 0.5 | 2.90 | -.30 | .761 | - |

As shown in Table 3, the *t*-test applied to test gender differences in the scores of the three scales revealed statistically significant differences in two of the three scales. Women had higher scores compared to men as regards Warmth and Conflict. However, the effect sizes, Cohen's *d*, were low. There were no differences in the case of Rivalry.

External validity

To assess the external validity of ASRQ-SF, the correlations between the scales of ASRQ-SF, GHQ-28, and MHC-SF were computed. The correlations are given in Table 4. The correlations are between the scales of ASRQ-SF with the scales and subscales of the other questionnaires.

Table 4. Pearson correlations of ASRQ-SF scales and GHQ-28 (n = 465) and MHC-SF (n = 535)

| ASRQ-SF Scales | Warmth | Conflict | Rivalry |
|--------------------------|--------|----------|---------|
| GHQ-28 Scales | | | |
| Somatic symptoms | - | - | - |
| Anxiety/insomnia | - | .10* | - |
| Social dysfunction | - | - | - |
| Depression | -.12* | .11* | - |
| GHQ-28 total score | - | - | - |
| MHC-SF Scales | | | |
| Emotional well-being | - | - | - |
| Social well-being | .10* | - | -.09* |
| Psychological well-being | .13** | - | - |
| Psychological well-being | - | - | - |
| MHC-SF total score | .12** | - | - |

Note: **p* = .05; ***p* = .01

As shown in Table 4, two of the scales of ASRQ-SF correlated with the scales of GHQ-28. Specifically, Warmth was negatively correlated with the indicators of impaired mental health whereas Conflict was positively related. There were correlations between Warmth and Depression. However, the size of the correlations was low. The scale of Somatic Symptoms of GHQ-28 did not correlate with any of the scales of ASRQ-SF. When the Bonferonni correction of multiple comparisons was applied, with the α level set at .003, none of the correlations was significant.

Two of the scales of ASRQ-SF correlated with the scales of MHC-SF. Warmth was positively related with the indicators of well-being (the highest correlations were with psychological well-being and the lowest social well-being). Rivalry was negatively correlated with social well-being. However, the size of these correlations were also low.

DISCUSSION

The results of the study suggest that the Polish short version of the Adult Sibling Relationship Questionnaire (ASRQ-SF) is a tool that allows a multidimensional measurement of the quality of adult sibling relationships in terms of warmth, conflict, and rivalry. Confirmatory factor analysis confirmed the three-factor structure and the covariances assumed between the three factors and between pairs of items about the perception of sibling relationships of the respondent and their sibling. All factor loadings and covariances were statistically significant.

However, it needs to be pointed out that ASRQ-SF contains more items (61) than ASRQ-S (47). ASRQ-SF includes all the scales of the original ASRQ, yet without the items whose factor loadings were below .60. Moreover, the assumptions of the authors of ASRQ regarding the direction of the inter-correlations between the three factors were confirmed (Stocker et al., 1997; Wałęcka-Matyja, 2014). Warmth was negatively correlated with Conflict and Rivalry. There were also statistically significant positive correlations between Conflict and Rivalry. The inter-correlations between the psychological aspects of sibling relationships are in line with the relevant literature (Dunn, 1983; Furman & Buhmaster, 1985; Stocker et al., 1997; Wałęcka-Matyja, 2014).

Furthermore, ASRQ-SF is characterized by high internal consistency (Cronbach's α for the individual scales ranged from .89 to .97), similar to the results obtained by the authors of ASRQ-S, in which Cronbach's alphas ranged from .91 to .96 (Wallace, 2012).

In order to assess the external validity of the ASRQ-SF, the correlations between the scales of the questionnaire and mental health and well-being scales were examined. The hypothesis was that there would be significant negative correlations

between the scales making up the factor of Warmth and the scales of GHQ-28, which include the Somatic systems of Anxiety, Social dysfunction, Depression and the general indicator of mental health (Dąbrowski, 1996; Makowska & Merecz, 2001). In so far as the correlations of the ASRQ-SF factors with MHC-SF are concerned, positive correlations were expected between the scales making up the factor of Warmth and Emotional well-being, Social well-being, Psychological well-being and the MHC-SF total score. Furthermore, it was assumed that the dimensions of Psychological well-being would be negatively correlated with the dimensions making up the factors Conflict and Rivalry. The size of these correlations was low but reliable since, as the related literature shows, sibling relationships are one of the important, though not crucial, correlates of mental health and widely understood well-being (Czapiński, 2004; Dąbrowski, 1996; Karaś et al., 2014; Makowska & Merecz, 2001). The above findings confirmed the external validity of ASRQ-SF. Yet, the lack of other significant correlations suggests that there is still need to examine the external validity of the ASRQ-SF.

The obtained results, in general, are consistent with the findings of other researchers indicating a connection between positive psychological functioning and quality of life, on the one hand, and warm, kind social relationships with other people (Czapiński, 2004; Dąbrowski, 1996; Hindman, Riggs, & Hook, 2013; Ro & Clark, 2009; Stocker et al., 1997).

This study had satisfactory group size ($N = 1000$) and age diversity (participants represented early, middle and late adulthood). However, there is still the limitation of self-reports in the study of adult sibling relationships. Our findings could be enriched in the future by interview or focus group research. Despite this limitation, the Polish ASRQ-SF has good psychometric properties and can be a valuable self-report tool. Further use of ASRQ-SF in research will make it possible to compare it with other measures and its potential for a deeper understanding of adult sibling relations in adulthood.

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