

Psychometric properties of the Polish adaptation of the Adult Sibling Relationship Questionnaire (ASRQ)

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Summary

Background. Polish studies have not been focused on the method enabling a reliable and valid measure of the psychological attributes of sibling relationships in the period of adulthood.

Aim. The aim of this study was to determine the psychometric properties of the Polish adaptation of the Adult Sibling Relationship Questionnaire (ASRQ).

Methods. The study included 406 students of different majors of the University of Łódź and the Łódź University of Technology. In the surveyed group, 58.9% were women (n=239) and 41.1% men (n=167). The participants of the survey were adult, aged from 18 to 35 years (M=23.7, SD=3.891).

Results. The three main ASRQ factors (Warmth, Conflict, Rivalry) showed good internal consistency (Cronbach's α .87-.97). Correlations between the individual scales creating the main factors demonstrate similar patterns to the results obtained by the authors of the original version of the ASRQ. The results of the conducted exploratory (EFA) and confirmatory (CFA) factor analyses confirm the factorial structure of the original version of the ASRQ.

Discussion. The presented results indicate that the ASRQ in the Polish adaptation is a reliable and valid multidimensional measure of relationships between siblings in early adulthood.

Conclusions The Polish adaptation of the Adult Sibling Relationship Questionnaire can open an era of the researchers' interest in the subject area of relationships between siblings in the period of adulthood.

ASRQ / adult assessment / siblings

INTRODUCTION

Psychologists accept that the foundation for proper development of an individual, including shaping the self-image and the relationship to oneself and other people, is the family experience, especially the conditions and the level of satisfaction of basic psychological needs, particularly such as the need to belong, the need of safety and acceptance. It is assumed that the family experience can either open up possibilities of individual development or, in case of strong and unfavourable influences, impede the processes of psycho-

logical and social development, preventing the creation of desirable qualities in a person.

A family subsystem that deserves a special attention of researchers is the relationship between siblings as it lasts for the whole life of an individual and is primary to any relationships of friendship and ones of a romantic or intimate nature. It should be highlighted that it is of a completely different nature than the bond with the parents. The relationship with siblings has been described by the literature on the subject as ambivalent since it combines relationships of liking, antipathy and rivalry. Family experiences, in which children who are siblings participate, shape the specific and intimate nature of the relationship between them. To a great extent, it affects the frame of mind, health and development of young individuals. It has been agreed that this

relationship also influences the functioning of a person in the period of adulthood. The so far conducted studies on relationships with siblings focus mainly on the period of childhood [1-3] or the period of late adulthood [4]. Considering the universality of sibling relationships and their predictive nature in the later ontogenesis, it is essential to study the nature of sibling relationships in adulthood. Moreover, the problems raised by the studies are particularly timely since they emphasize the role of siblings not only in the development and functioning of every person but also in the process of stimulating the social and civilizational development of the whole society.

However, in the literature on the subject, especially the Polish one, there are quite few studies discussing the problems of sibling relationships and their significance for a person's functioning in the periods of adolescence and adulthood. At present on the ground of science, there is no scholarly publication which would be thoroughly devoted to the issue of the influence of this relationship on the functioning of a person in the period of early adulthood. The Polish adaptation of the method enabling a reliable and valid measure of the psychological attributes of sibling relationships – the Adult Sibling Relationship Questionnaire (ASRQ) by C. Stocker, R. Lanthier, W. Furman can definitely change this state, opening an era of the researchers' interest in the subject area of relationships between siblings in the period of adulthood.

The Adult Sibling Relationship Questionnaire (ASRQ) by C. Stocker, R. Lanthier, W. Furman is a tool designed to measure relationships between siblings in the period of adulthood. The assessed areas include: the perception of the examined persons, their behaviours and feelings towards their siblings as well as the siblings' perception – of the behaviours and feelings towards the examined. At first, the questionnaire consisted of 100 items, but based on the results of the pilot study conducted on a sample of 30 people, the authors have decided to consolidate the strongly correlating items. Some of the questions considered to be too difficult to understand have been deleted. The final version of the Adult Sibling Relationship Questionnaire consists of 81 items, which form 14 scales: Affection, Knowledge, Intimacy, Emotional Support, Admira-

tion, Similarity, Instrumental Support, Acceptance, Opposition, Domination, Quarrel, Competition, Maternal Rivalry, Paternal Rivalry. All the ASRQ items (except Rivalry) are assessed on the Likert's scale, from "Hardly Anything" (1 point) to "Extremely Much" (5 points). The items showing the level of rivalry between siblings are assessed on the scale from 0 to 2 points as the authors of the questionnaire assumed that there are three most frequently occurring situations: a child is not favoured by their parents (0 points), the parents sometimes favour one or the other child (1 point) and the parents usually favour one child in relation to the other children (2 points).

The factorial analysis of the original version indicated the existence of three main factors characterizing relationships between siblings: Warmth, Conflict and Rivalry, which accounted for 70% of the variance. The psychometric properties of the ASRQ were assessed as good. They were elaborated on a sample of 385 students (128 men and 255 women) [5-7].

METHOD

The adaptation process of the Polish-language version of the ASRQ was performed in three stages. The first one was the translation of the English-language version into Polish. The next stage consisted in testing the psychometric equivalence of both the versions of the questionnaire. The last one was connected with the verification of the factor structure as well as the reliability and validity of the Polish-language version of the ASRQ. The Scientific Council of the Institute of Psychology of the University of Łódź gave its permission to conduct research connected with this project.

Translation procedure and psychometric equivalence assessment of English and Polish version of the ASRQ

The work to create the Polish adaptation of the ASRQ was started after obtaining consent from the authors. The adaptation procedure was planned according to the translation principles with a confirmation of the translation accuracy [8]. The applied method of translation assumes

an accurate translation of the original version with a possibility of making changes wherever they seem necessary, considering the specificity of a given language [9].

The order of the works performed to translate the ASRQ was the following:

- a) translation of the original version into Polish together with the correction,
- b) back-translation into English,
- c) examination of a group of bilingual persons.

To characterize the first stage of the works, it should be indicated that the original version of the ASRQ was translated by three independent translators who were competent in both written and spoken English and had experience in social and psychological research. Then, the obtained results were compared and the statements which were different in the translations (that concerned 10 items) highlighted. The translators were asked to translate the highlighted statements again. During the next comparison of the translations, there were differences in four statements. The doubts were cleared up at the meeting, where the joint version of the questionnaire was agreed upon. As the next step, a professional translator made a back translation of the final version of ASRQ into English, and then it was submitted to the authors for approval. After the approval of the submitted version of the questionnaire by the authors, the research was commenced.

The equivalence of the original version and the Polish-language version was analyzed based on Sample 1. It consisted of English philology students from the University of Łódź, who first completed the American version in October 2013 and then in the second half of November 2013 the Polish one (there was a 35-day break between the surveys). The study included 80 bilingual students (64 women (80%) and 16 men (20%) aged from 18 to 25 years ($M = 20.8$; $SD = 1.82$). Although we tried to maintain an equal gender distribution in the samples, we did not manage to do so as the number of women students was significantly bigger than men students.

The survey was performed during the classes, and the students' participation was of a voluntary and anonymous nature (codes were used). To verify the hypothesis that the average values measured by the arithmetic mean within the in-

dividual variables are significantly coherent in the original and Polish versions, a paired t-test was used. Due to a large population of the sample (80 people), it was assumed that the distribution was normal.

The obtained results showed that there is a statistically significant correlation between the American and Polish versions. The corresponding scales of both the ASRQ versions were positively correlated at the significance level of $p < 0.001$. Moreover, no significant difference of results was revealed for any pairs of the corresponding scales (Table 1 – *next page*).

The results of the group examined in the first place were used to verify the Polish translation of the ASRQ. Summing up this stage, it was confirmed that the analysis of the correlation of the results of the Polish-language version of the ASRQ and the results of the original version allowed us to regard the Polish translation as equivalent to the English version of the ASRQ as far as the language aspect is concerned.

Participants and Procedure

The study included 406 students of different majors of the University of Łódź and the Łódź University of Technology. In the surveyed group, 58.9% were women ($n=239$) and 41.1% men ($n=167$). The participants of the survey were adult, aged from 18 to 35 years ($M=23.7$, $SD=3.891$). They provided information on their relationship with their adult siblings, at least aged 18. The siblings' age was from 18 to 38 years ($M=26.5$; $SD=5.097$). The surveyed resided mainly in urban areas, came from full families and their material situation was defined as good or average.

The studies were carried out in the period from January 2014 till May 2014 in the institutions of higher education located in Łódź, Poland. They were of a self-descriptive, group nature as they included 25 to 30 persons at a time. Each time, the instruction was read out by the researcher. The respondents were also informed about the aim of the study, its anonymous nature and the intention to use the results only for scientific purposes. The students demonstrated a positive approach when asked to take part in the study. Apart from the ASRQ, the surveyed persons were asked to

Table 1. The coefficient values of the Pearson linear correlation (r) between the three main factors of the Polish and American ASRQ versions and a comparison of the mean scores in the individual scales.

Version type ASRQ Scale	r	American version		Polish version		t	P
		\bar{x}	SD	\bar{x}	SD		
Warmth (W)	.943	143.83	36.886	142.80	39.214	.700	.486
Similarity	.866	11.35	3.202	11.13	3.541	1.131	.261
Intimacy	.904	17.03	5.741	17.00	6.392	.082	.935
Affection	.897	19.75	6.523	19.69	6.787	.185	.854
Admiration	.906	19.11	5.442	18.93	5.769	.685	.496
Emotional support	.885	19.15	6.250	18.65	6.351	1.481	.142
Instrumental support	.822	16.66	5.044	19.96	5.394	-.857	.394
Acceptance	.908	20.70	4.748	20.81	5.166	-.464	.644
Knowledge	.905	20.08	5.739	19.64	5.894	1.538	.128
Conflict (C)	.984	52.53	14.681	51.95	14.377	1.939	.056
Quarrel	.969	13.19	4.447	13.29	4.216	-.806	.422
Opposition	.939	13.26	4.775	13.15	4.763	.606	.546
Competition	.930	13.25	4.442	12.91	4.311	1.835	.070
Domination	.967	12.83	4.351	12.60	4.474	1.754	.083
Rivalry (R)	.904	7.28	5.009	7.09	5.263	.741	.461
Maternal Rivalry	.888	5.08	2.448	4.91	2.687	1.175	.244
Paternal Rivalry	.886	2.20	3.293	2.18	3.482	.137	.891

Source: own work

complete a questionnaire on demographic data and some instruments used in order to determine the validity of the ASRQ, i.e. the Self-Esteem Scale (SES) by M. Rosenberg in the adaptation of M. Łaguna, K. Lachowicz-Tabaczek, I. Dzwonkowska (Sample 2, $n=84$), the Interpersonal Reactivity Index (IRI) by M.H. Davis in the adaptation of M. Kaźmierczak, M. Plopa, S. Retowski (Sample 3, $n=84$) and the Purpose in Life Test (PIL) by J. C. Crumbaugh and L.T. Macholick in the adaptation of Z. Płużek (Sample 3, $n=102$). Completing the questionnaire package took approximately 40 minutes. To analyze the data, the following specialist computer software was used: IBM SPSS 21 and IBM SPSS AMOS 21.

Measures

The following instruments were used in the study:

Own questionnaire - designed to obtain demographic and social data (age, gender, residence, marital status, family of origin, economic situation, professional activity, type of relationship between the respondent and their siblings).

Adult Sibling Relationship Questionnaire (ASRQ) by C. Stocker, R. Lanthier, W. Furman (1995). The Adult Sibling Relationship Questionnaire assesses the perception of the examined persons, their behaviours and feelings towards their siblings as well as the siblings' perception of their behaviours and the siblings' feelings towards the examined. The questionnaire consists of 81 items, which form 14 scales: Affection, Knowledge, Intimacy, Emotional Support, Admiration, Similarity, Instrumental Support, Acceptance, Opposition, Domination, Quarrel, Competition, Maternal Rivalry, Paternal Rivalry. All the ASRQ items (except Rivalry) are assessed on the Likert's scale, from "Hardly Anything" (1 point) to "Extremely Much" (5 points). The psy-

chometric properties of the ASRQ are good and enable conducting studies [7].

Self-Esteem Scale (SES) by M. Rosenberg (1965) (Polish adaptation M. Łaguna, K. Lachowicz-Tabaczek, I. Dzwonkowska, 2007). The scale is designed to measure a general level of self-esteem, i.e. the relationship to oneself, which being revealed in the self-description is treated as a relatively constant feature and not a temporary state. The scale consists of 10 statements. The surveyed person is asked to indicate to what extent they agree with each of them, choosing an answer on a four-point scale. It is a reliable (0,81 to 0,83) and valid measure. The instrument also demonstrated quite a satisfactory stability [10].

Interpersonal Reactivity Index by M.H. Davis (1980) (IRI) (Polish adaptation M. Kaźmierczak, M.Płopa, S. Retowski, 2007). The questionnaire measures empathy, which includes the following composite factors: Empathic Care, Perspective Taking and Personal Distress. It consists of 28 items. Answers are marked on the Likert's 5-point scale. The reliabilities of all the scales (Empathic Care: 0,78; Personal Distress: 0,78; Perspective Taking: 0,74) are close to those obtained by M. H. Davis (1980). The instrument is characterized by a good criterion and construct validity [11].

Purpose in Life by J. C. Crumbaugh and L.T. Macholick (1964) (PIL) (Polish adaptation Z. Płużek, 1981). The scale is designed to measure the meaning of life and the life goals. The theoretical basis for creating this measure was Viktor Frankl's concept of existential frustration and noogenic neurosis. It consists of three parts. The first part includes 20 pairs of statements, to which the examined person responds on a 7-point scale. The other two parts of the scale in the form of unfinished sentences encouraging a person to give open answers about their aspirations, ambitions and goals in their life enable conducting the quality analysis. The Purpose in Life Scale is characterized by good psychometric properties (reliability from 0.64 to 0.70; sufficient validity) [12].

The first stage of the work over the Polish adaptation of the ASRQ was connected with carrying out the factor analysis, EFA and CFA, to determine the method's factorial structure. The next aim was to determine the psychometric properties of the questionnaire. The last stage

concerned looking for some relationships between the Polish version of the ASRQ and the selected psychological constructs, such as self-esteem, empathy, sense of meaning in life.

RESULTS

Means and Standard Deviations

The means and standard deviations of the Polish and original versions of the ASRQ are presented in table 2 (*on the next page*) for the fourteen subscales and three composite factors of the ASRQ analyzed for the whole samples. The characteristics of relationships with siblings in the period of adulthood was considered separately for the examined groups of women (n=239) and men (n=167) (Table 3 - *next page*). In the light of the t-test, the obtained results indicate that the examined group of women got significantly higher scores on the following ASRQ subscales than the group of men: Similarity, Affection, Admiration, Emotional Support, Knowledge, Intimacy, Instrumental Support and Quarrel. J. Dunn (2002) is convinced that gender significantly determines the quality of relationships with siblings. The researcher considers women to be more socialized than men and more emotionally expressive, which enables them to demonstrate more closeness in relationships with their siblings [13]. According to J. L. McGhee (1985), having a sister results in an increase in satisfaction with life although it is emphasized that between siblings of the same gender there may be tension, strong competition and conscious endeavours to build identity in opposition to the sister [14].

Factorial Structure

Exploratory Factor Analysis

Establishing the structure of the Polish version of the ASRQ, we based that process on the assumptions accepted by the authors of the original version. According to C. Stocker, R. Lanthier, W. Furman the nature of the sibling relationship is best reflected by the three factor model [10]. The main factor analysis (EFA² model) was

Table 2. The comparison of the mean scores¹ and standard deviations of both the ASRQ versions, original and Polish

Version type ASRQ	Polish version		Original version	
	\bar{x}	SD	\bar{x}	SD
ASRQ Scales				
Warmth (W)	3.22	36.54	3.28	0.69
Similarity	2.82	3.54	3.01	0.86
Intimacy	2.90	5.90	3.05	0.92
Affection	3.27	5.88	3.51	0.95
Admiration	3.18	4.96	3.65	0.72
Emotional support	3.25	6.14	3.22	0.96
Instrumental support	2.97	5.20	2.66	0.82
Acceptance	4.12	5.69	3.27	0.76
Knowledge	3.18	5.48	3.35	0.81
Conflict (C)	1.89	14.14	2.19	0.69
Quarrel	2.51	4.09	2.45	0.82
Opposition	1.96	4.96	2.11	0.84
Competition	1.65	3.90	2.19	0.93
Domination	1.53	3.81	2.07	0.72
Rivalry (R)	0.41	5.46	0.7	0.52
Maternal Rivalry	0.45	3.25	0.72	0.59
Paternal Rivalry	0.37	3.17	0.66	0.64

Source: own work

Table 3. Sibling relationships in the period of adulthood in the examined groups of women and men

Examined groups	ASRQ Polish version					
	Men		Women		t	p
	\bar{x}	SD	\bar{x}	SD		
ASRQ Scales						
Similarity	10.39	3.56	11.90	3.34	-4.274	0.000
Intimacy	16.28	5.72	18.28	5.91	-3.423	0.001
Affection	18.44	5.62	20.57	5.92	-3.687	0.000
Admiration	17.80	5.23	19.93	5.07	-4.089	0.000
E. Support	17.71	6.13	20.74	5.84	-5.006	0.000
I. Support	16.92	5.35	18.40	5.01	-2.805	0.005
Acceptance	23.92	5.72	25.32	5.48	-2.479	0.014
Knowledge	17.76	5.19	20.03	5.49	-4.223	0.000
Quarrel	11.96	4.23	12.96	3.95	-2.395	0.017
Opposition	11.61	5.19	11.87	4.80	-.503	0.615
Competition	9.49	3.84	10.18	3.92	-1.765	0.078
Domination	8.75	3.85	9.46	3.77	-1.823	0.69
P. Rivalry	2.27	3.28	2.13	3.10	.432	0.666
M. Rivalry	2.82	3.51	2.66	3.06	.498	0.619

Source: own work

¹The means were calculated by dividing the obtained mean score by the number of questions included in a given scale

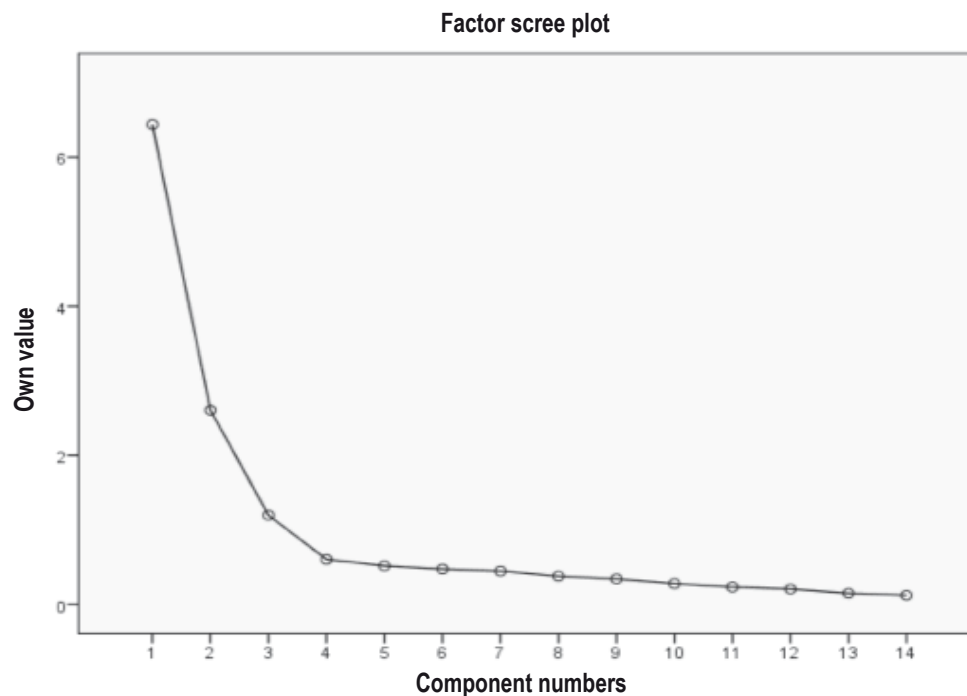
performed on the sample of the examined persons (N=406) using the Oblimin rotation method with the Keiser normalization. The K-M-O index of adequate sampling was .911, which indicates that data represented a homogeneous collection of variables that were suitable for factor analysis. Bartlett's test of sphericity was significant for the sample ($\chi^2 = 4011.104$, $df = 91$ $p < .000$). Thus, a conclusion can be drawn that the set of correlations in the correlation matrix was significantly different from zero and suitable for factor analysis. The results of the factor analysis carried out on the Polish version of the ASRQ were convergent with the ones obtained by C. Stocker, R. Lanthier, W. Furman [7]. The analysis resulted in three factors with eigenvalues greater than 1, which explained 73.13% of the total variance of the Polish version of the ASRQ. The results of the analysis were presented on a scree diagram (diagram 1) and in Table 2.

While interpreting the scree diagram, a point in which the slope becomes smaller and the var-

iance does not drop (information overload) is considered to be the rejection criterion [16].

All the scales exhibited high factor loadings. The analysis of the main components of the Polish ASRQ version were in line with the results obtained in the English version by C. Stocker, R. Lanthier, W. Furman [7]. The first factor was called Warmth since it included the following subscales: Emotional Support, Intimacy, Affection, Knowledge, Admiration, Similarity, Acceptance, Instrumental Support. It explained 45.98% of the variance of the results obtained in the Polish version of the ASRQ. The second factor was referred to as Conflict. Their loadings were the following subscales: Opposition, Quarrel, Domination, Competition. It explained 18.60% of the variance of the results obtained in the Polish version of the ASRQ. The third factor is Rivalry. It assesses the extent to which the examined people feel that their parents treat them and their siblings in a fair way or not. It explained 8.55% of the variance of the results ob-

Diagram 1. Scree diagram



Source: own work

²The factor analysis in the EFA model consists in finding a group of variables (factors) explaining the correlation between the observable variables [15].

Table 4. The factorial structure of the Polish version of the ASRQ with the three-factor solution. Rotated component matrix. Source: own work

ASRQ Scales \ Factors	1 (45.98%)	2 (18.60%)	3 (8.55%)
Emotional Support	0.923		
Intimacy	0.915		
Affection	0.896		
Knowledge	0.878		
Admiration	0.805		
Similarity	0.796		
Acceptance	0.782		
Instrumental Support	0.746		
Opposition		0.883	
Quarrel		0.850	
Domination		0.840	
Competition		0.770	
Paternal Rivalry			0.853
Maternal Rivalry			0.845

Source: own work

tained in the Polish version of the ASRQ. The results of the Polish scale can be treated, like in the original version, as a sibling relationship quality indicator in the period of adulthood.

Confirmatory Factor Analysis

To assess the adequacy of fit of the proposed measurement model (covering the three factors) to the structure of a directly unobservable phenomenon, which is the nature of sibling relationships in the period of adulthood, a confirmatory factor analysis (CFA) was performed. To analyze the data, a specialist computer software IBM SPSS AMOS 21 was used. Goodness-of-fit indices for the three-factor model in the present study were as follows: RMSEA (Root Mean Square Error of Approximation) = 0.08. Overall, the fit indicator in this study indicated that the model provided is a proof of an acceptable fit to the data. Thus, the hypothesized three-factor structure of the Polish version of the Adult Sibling Relationship Questionnaire was confirmed.

Reliability

The analysis of the measurement instrument's reliability was carried out based on the Cornbach's α coefficient of internal consistency. Statistical analysis showed that the ASRQ is characterized by a high level of internal consistency (0.87 - 0.97). For the German version of the ASRQ, internal consistency measured by the Cornbach's α coefficient ranged from .94 to .75 [17]. Table 5 presents the comparison of the Cornbach's α coefficient values of the three factors of the ASRQ in the Polish and American versions.

It can be noticed that the obtained results were close to the parameters of the original version.

Intercorrelations

The analysis of the intercorrelations among the three distinguished factors carried out on the whole sample (N=406) showed that the correlations between the composite factors of sibling relationships (Warmth, Conflict, Rivalry) were high and statistically significant.

Table 5. The comparison of the Combach's α coefficient values of the ASRQ in the Polish and original versions. Source: own work

ASRQ version type	Polish version	Original version
	Combach's α	
ASRQ factors		
Warmth	0.97	0.97
Conflict	0.92	0.93
Rivalry	0.87	0.88

Source: own work

Table 6. The coefficient values of the Pearson linear correlation (r) between the three composite factors of sibling relationships and the ASRQ subscales. Source: own work

Factor	Warmth	Conflict	Rivalry
	(W)	(C)	(R)
ASRQ Scales			
	Pearson r	Pearson r	Pearson r
Similarity	0.777**	-0.234**	-0.280**
Intimacy	0.910**	-0.227**	-0.262**
Affection	0.898**	-0.284**	-0.311**
Admiration	0.813**	-0.264**	-0.300**
Emotional support	0.927**	-0.278**	-0.284**
Instrumental support	0.741**	ni0.	-0.225**
Acceptance	0.807**	-0.509**	-0.338**
Knowledge	0.876**	-0.205**	-0.304**
Quarrel	-0.272**	0.849**	0.188**
Opposition	-0.380**	0.902**	0.269**
Competition	-0.187**	0.777**	0.267**
Domination	-0.137**	0.832**	0.240**
Maternal Rivalry	-0.338**	0.242**	0.858**
Paternal Rivalry	-0.214**	0.249**	0.850**

Source: own work

Explanations to the table:

** - correlation is significant at the level of 0.01 (both sides)

ni – lack of correlation

The factor of Warmth was negatively correlated with the other two factors: Conflict ($r = -0.301$; $p < 0.000$) and Rivalry ($r = -0.340$; $p < 0.000$). According to the assumptions, the considered factor of Warmth had a qualitative nature different

from the other factors, i.e. Conflict and Rivalry. The factor of Conflict was positively correlated with the factor of Rivalry ($r = 0.287$; $p < 0.000$). That means that the three factors should be treated as the dimensions of a multidimensional construct

(sibling relationship). The existence of the internal relations among the individual aspects of relationships with siblings has been confirmed by the literature on the subject [1;2;3]. The results of the study of the ASRQ original version show minimum correlations among the main factors: Warmth and Conflict $r=-.19$; Warmth and Rivalry $r=-.17$; Conflict and Rivalry $r=.23$ ($p<0.05$) [7]. The relations between the main ASRQ factors and the individual subscales are presented in Table 6.

Concurrent and Discriminant Validity

To assess the construct validity of the Polish version of the ASRQ, the relationship between the ASRQ and the selected psychological constructs – self-esteem, empathy and the sense of

purpose in life, an empathy dimension called Personal Distress (PD) and a weak sense of purpose in life. In the correlation analysis, three samples of a similar number of people were taken under consideration (Table 7).

The data presented in Table 7 allow for the statement that the greatest number of statistically significant correlations occurred between the dimensions of sibling relationships (ASRQ) and the sense of purpose in life.

Experiencing the sense of purpose in life, understood as experiencing the sense of purpose and meaning of one's own life underpinned by its positive assessment, is positively correlated with showing warmth in relationships with siblings and negatively correlated with a conflict relationship. Coherent relationships with the abovementioned correlations can be observed on the level of the subscales creating the main

Table 7. The coefficient values of the Pearson linear correlation (r) between the ASRQ scales and empathy, self-esteem and the sense of purpose in life

Variables	Empathy EC n=84	Empathy PT n=84	Empathy PD n=84	Self-esteem n=84	Sense of Purpose in Life n=102
ASRQ Scales					
Warmth					$r=0.220^*$
Conflict					$r=-0.224^*$
Admiration	$r=0.238^*$				$r=0.201^*$
Emot. Support	$r=0.236^*$				
Inst. Support					$r=0.247^*$
Acceptance					$r=0.210^*$
Knowledge					$r=0.236^*$
Opposition					$r=-0.215^*$
Domination		$r=-0.285^{**}$	$r=-0.230^*$		$r=-0.246^*$
M. Rivalry					
P. Rivalry			$r=-0.268^*$		

Source: own work.

Symbols used in the table.

* correlation is significant at the level of 0.01

** correlation is significant at the level of,05

To keep the table clear, the statistically insignificant results have been skipped

purpose in life - was evaluated. It was hypothesized that the factor of Warmth would be positively correlated with a high level of self-esteem, with the sense of purpose in life and the follow-

ing empathy dimensions: Empathic Care (EC) and Perspective Taking (PT).

It was anticipated that the factors of Conflict and Rivalry would be positively correlated with

factors. The sense of purpose and meaning of life is positively correlated with the following subscales of the factor of Warmth: Admiration, Instrumental Support, Acceptance and Knowledge, whereas negative correlations can be observed between the sense of purpose in life and the subscales of the factor of Conflict: Opposition and Domination.

The carried out studies of correlations allow us to notice that a higher level of engagement in interpersonal relationships (of Empathic Care) was connected with more frequent expressing of admiration for siblings as well as giving them emotional support. The occurrence of domination in sibling relationships was connected with a lower level of tension and experiencing irritation (Personal Distress). On the other hand, the dimension of empathy called Perspective Taking was negatively correlated with domination and paternal rivalry in sibling relationships. No relationships were observed between the ASRQ dimensions and the level of self-esteem. It has been emphasized that the average results concerning the level of self-esteem ($M=28.50$, $SD=6.207$) obtained in the presented study are comparable with the average results obtained for this age group [10].

DISCUSSION

The results of the conducted study allow us to consider the Polish adaptation of the Adult Sibling Relationship Questionnaire (ASRQ) equivalent to the original version, which opens a new area of study on the family in the post-modern world. The purpose of this study was twofold. First, to adapt the Sibling Relationship Questionnaire into Polish and second to examine its psychometric properties. The current findings demonstrate that the Polish adaptation of the ASRQ behaves similarly to the original and other language versions, including German. The study confirmed the three-factor structure of the questionnaire. The results of the study conducted in Poland confirmed the relationships among the three main factors hypothesized by the authors of the Adult Sibling Relationship Questionnaire. Also, the RMSEA value (0.08) showed an acceptable fit of the variables to the model. The statistical analysis indicated that the Polish adapta-

tion of the ASRQ is characterized by high internal consistency (Cronbach's α coefficient range .87 - .97), which is comparable with the results for the original version of the questionnaire. The intercorrelations between the three ASRQ factors (Warmth, Conflict, Rivalry) confirmed the existence of three distinct dimensions, yet having a common core, of sibling relationships. This pattern was consistent with the previous studies conducted by the researchers [7,17].

In order to assess the construct validity of the Polish version of the ASRQ, we examined the relations between the dimensions of sibling relationships and the selected psychological constructs: self-esteem, empathy and the sense of purpose in life. As a result of the conducted studies, we confirmed the existence of numerous relations between the sense of purpose in life and the ASRQ scales. The basic conclusion concerns the correlation of the sense of purpose in life with the main factors determining a type of sibling relationship. Experiencing the sense of purpose in life was positively correlated with showing warmth in sibling relationships and negatively with a conflict relationship. Also, some relations were observed between the ASRQ dimensions and empathy. No correlations were observed between the ASRQ factors and the level of self-esteem. Attempting to explain the obtained result, we emphasize the fact that in the light of the study, the nature of the relations between self-esteem and interpersonal relationships looks a bit ambiguous [18,19]. The reason of that is an increasing number of critical opinions on the role of self-esteem as a factor conditioning a good psychological adjustment and mental health [20,21]. Some researchers say that attaching excessive importance to liking yourself can lead to a lot of negative consequences. The most frequently encountered are: narcissism and concentration on yourself without paying attention to other people. According to J. Crocker and L.E. Park [22], the desire of self-esteem can result in perceiving other people as worse and hamper interpersonal relationships. The present study had certain limitations, which can become a future motivation to take up a similar study that will be partly or thoroughly free of them. One of the limitations was the way of evaluating sibling relationships in the period of adulthood. In the future study, it would be important to use oth-

er than self-descriptive methods of determining sibling relationships, including the interview or the focus group. It would also be advisable to conduct the study on a more diversified Polish population, e.g. in respect of age, education. Although the results of the study on the Polish adaptation of the ASRQ are satisfying, it is worth planning and conducting additional studies in the future to improve the questionnaire and extend the scope of its application. In conclusion, despite certain limitations, the presented study results provide evidence that the psychometric properties of the Polish version of the ASRQ are comparable with the original English version and other language versions. The Adult Sibling Relationship Questionnaire PL can be a valuable self-descriptive instrument designed to measure sibling relationships in a sample of adult Poles.

REFERENCES

- Dunn J. Sibling relationships in early childhood. *Child Development*. 1983;54: 787-811.
- Furman W, Buhrmester D. Children's perceptions of the qualities of sibling relationships. *Child Development*. 1985;56: 448-461.
- Stocker C. Siblings' adjustment in middle childhood: Links with mother-child relationships. *Journal of Applied Developmental Psychology*, 1993;14: 485-499.
- Bedford V. H. Ambivalence in adult sibling relationships. *Journal of Family Issues*. 1989; 10: 211-224.
- Lanthier R, Stocker C, Furman W. Adult sibling relationship questionnaire. In Touliatos J, Perlmutter BF, Holden GW, editors, *Handbook of family measurement techniques*. Vol. 2. Abstracts. Thousand Oaks. CA: Sage Publications; 2001. p. 53-54.
- Lanthier R, Stocker C, Furman W. Adult sibling relationship questionnaire. In Touliatos J, Perlmutter BF, Holden GW, editors. *Handbook of family measurement techniques*. Vol 3: Measures. Thousand Oaks. CA: Sage Publications; 2001. p. 7-10.
- Stocker C, Lanthier R, Furman W. Sibling relationships in early adulthood. *Journal of Family Psychology* .1997; 11: 210-221.
- Zawadzki B, Strelau J, Szczepaniak P, Śliwińska M. Personality Inventory NEO-FFI by Costa and McCrae. *Textbook*. Warsaw: Psychological Test Lab PTP; 1998.
- Drwal RŁ. Problems of cultural adaptation of questionnaires. In: Ciechanowicz A, editor. *Cultural adaptation of tests*. Warsaw: Polish Psychological Association; 1990. p. 115–138
- Każmierczak M, Plopa M, Retowski S. Scale of empathic sensitivity. *Psychological Review*; 50 (1): 9–24.
- Łaguna M, Lachowicz-Tabaczek K, Dzwonkowska I. Self-Esteem Scale SES of Morris Rosenberg – Polish adaptation. *Social Psychology*; 2007; 2: 164-176.
- Każmierczak, M., Plopa, M., Retowski, S. Scale of empathic sensitivity. *Psychological Review*. 2007; 50 (1): 9-24.
- Siek S. *Selected methods of personality testing*. Warsaw: Academy of Catholic Theology; 1993.
- Dunn J. Sibling relationships. In Smith PK & Hart CH editors. *Blackwell handbook of childhood social development*. Oxford: Blackwell Publishers; 2002.p. 223-237.
- McGhee JL. The effects of siblings on the life satisfaction of the rural elderly. *Journal of Marriage and the Family*. 1985;49:85-95.
- Brzeziński J. *Methodology of Psychological Study*. Warsaw: Polish Scientific Publishers PWN; (2004).
- Zakrzewska M. Confirmatory Factor Analysis as presented by the LISREL statistical package 8.51 (2001) by Karl G. Jöreskog and Dag Sörbom. In: Brzeziński J. editor. *Methodology of psychological study. Selection of texts*. Warsaw: Polish Scientific Publishers PWN; 2004.p. 342-478.
- Heyeres U. Adult Sibling Relationship Questionnaire Ein Instrument zur Erfassung von Geschwisterbeziehungen im Erwachsenenalter. *Gruppendynamik und Organisationsberatung*, 37. Jahrg., Heft; 2006;2: 215-225.
- Campbell JD, Fehr BA. Self-esteem and perceptions of conveyed impressions: Is negative affectivity associated with greater realism? *Journal of Personality and Social Psychology*. 1990; 58: 122-133.
- Battistich V, Solomon D, Delucchi K. Interaction process and student outcomes in cooperative learning groups. *The Elementary School Journal*. 1993; 94: 19-32.
- Baumeister RF, Campbell JD, Krueger JI, Vohs K D. Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? *Psychological Science in the Public Interest*. 2003; 4: 1–44.
- Leary MR, Tambor ES, Terdal SK., Downs DL. Self-esteem as an interpersonal monitor: The sociometer hypothesis. *Journal of Personality and Social Psychology*. 1995; 68 (3): 518–530.
- Crocker J, Park LE. (2004). The Costly Pursuit of Self-Esteem. *Psychological Bulletin*, 3, 392-414. [Access: 19.05.2014]. Available from: http://rcgd.isr.umich.edu/seminars/Winter2007/Crocker%20Park%20Costly_Pursuit_of_Self_Esteem%20%282%29.pdf.