

Assessing Alexithymia: Psychometric Properties of the Russian Version of the Perth Alexithymia Questionnaire

Paweł Larionow

Kazimierz Wielki University, Bydgoszcz, Poland,

ORCID: <https://orcid.org/0000-0002-4911-3984>, e-mail: pavel@ukw.edu.pl

David A. Preece

Curtin University, Perth, Australia,

ORCID: <https://orcid.org/0000-0003-1060-2024>, e-mail: david.preece@curtin.edu.au

Olga Khokhlova

Middlesex University Dubai, Dubai, United Arab Emirates,

ORCID: <https://orcid.org/0000-0002-7997-9949>, e-mail: o.khokhlova@mdx.ac.ae

Maria V. Iakovleva

Saint-Petersburg State University, Saint-Petersburg, Russia,

ORCID: <https://orcid.org/0000-0001-5035-4382>, e-mail: m.v.yakovleva@spbu.ru

The Perth Alexithymia Questionnaire (PAQ; Preece et al., 2018) is a recently developed 24-item self-report measure of alexithymia. Originally created in English, the questionnaire was designed to assess all facets of alexithymia and do so across both negative and positive emotions. This study aimed to introduce and examine the psychometric properties of the first Russian version of the PAQ. Our sample was 229 Russian-speaking adults aged 18–60 ($M = 28.59$, $SD = 9.41$) from the general population. Confirmatory factor analysis was used to verify the PAQ's factor structure. The convergent and divergent validity of the questionnaire was assessed via relationships with other measures of alexithymia, emotional reactivity, mental health symptoms, and trait vitality. The questionnaire demonstrated strong factorial validity, and convergent and divergent validity was also empirically supported. Internal consistency reliability was good for all subscales and the total score. Overall, the Russian version of the PAQ therefore appears to have strong psychometric properties, thus supporting the cross-cultural applicability of the alexithymia construct and this instrument. The capacity of the PAQ to assess alexithymia across both negative and positive emotions should usefully advance alexithymia assessments in Russian settings. The clinical relevance of appraising positive emotions seems to be important for future investigations in Russian samples.

Keywords: alexithymia, emotional reactivity, negative emotions, positive emotions, psychometric properties, psychopathology, validity.

For citation: Larionow P., Preece D.A., Khokhlova O., Iakovleva M.V. Assessing Alexithymia: Psychometric Properties of the Russian Version of the Perth Alexithymia Questionnaire.

Ларионов П., Прис Д., Хохлова О. и др.
Оценка алекситимии: психометрические
свойства русскоязычной версии
Пертского опросника алекситимии
Клиническая и специальная психология
2023. Том 12. № 1. С. 43–65.

Larionow P., Preece D.A., Khokhlova O. et al.
Assessing Alexithymia:
Psychometric Properties of the Russian Version
of the Perth Alexithymia Questionnaire
Clinical Psychology and Special Education
2023, vol. 12, no. 1, pp. 43–65.

Klinicheskaia i spetsial'naia psikhologiya=Clinical Psychology and Special Education, 2023.
Vol. 12, no. 1, pp. 43–65. DOI: 10.17759/cpse.2023120103

Оценка алекситимии: психометрические свойства русскоязычной версии Пертского опросника алекситимии

Ларионов П.

Университет Казимира Великого, г. Быдгощ, Польша,
ORCID: <https://orcid.org/0000-0002-4911-3984>, e-mail: pavel@ukw.edu.pl

Прис Д.

Университет Кертина, г. Перт, Австралия,
ORCID: <https://orcid.org/0000-0003-1060-2024>, e-mail: david.preece@curtin.edu.au

Хохлова О.

Мидлсекский университет Дубая, г. Дубай, Объединенные Арабские Эмираты,
ORCID: <https://orcid.org/0000-0002-7997-9949>, e-mail: o.khokhlova@mdx.ac.ae

Яковлева М.В.

Санкт-Петербургский государственный университет,
г. Санкт-Петербург, Российская Федерация,
ORCID: <https://orcid.org/0000-0001-5035-4382>, e-mail: m.v.yakovleva@spbu.ru

Недавно представленный Пертский опросник алекситимии (Perth Alexithymia Questionnaire; PAQ), состоящий из 24 пунктов, предназначен для оценки алекситимии. Будучи исходно разработанным на английском языке, опросник позволяет оценить все компоненты алекситимии по отношению как к отрицательным, так и положительным эмоциям. Цель данного исследования — оценить психометрические свойства впервые представленной русскоязычной версии опросника. Выборка включала 229 русскоязычных взрослых респондентов в возрасте 18–60 лет ($M = 28,59$ лет, $SD = 9,41$ лет), рекрутированных из общей популяции. Проверка факторной структуры опросника осуществлялась с помощью конфирматорного факторного анализа. Конвергентная и дивергентная типы валидности оценивались посредством корреляционного анализа баллов по опроснику PAQ с другими психологическими параметрами — эмоциональной реактивностью, симптомами психопатологии и витальностью. Результаты показали, что опросник имеет устойчивую и теоретически ожидаемую факторную структуру. Подтвердились его конвергентная и дивергентная валидность и внутренняя согласованность как субшкал, так и общего балла PAQ. Таким образом, русскоязычная версия PAQ обладает хорошими психометрическими свойствами, что подтверждает возможность

кросс-культурного использования данного инструмента. Возможность опросника оценивать все компоненты алекситимии по отношению как к отрицательным, так и положительным эмоциям, способствует более комплексной оценке алекситимии в российской популяции. Клиническая значимость оценки положительных эмоций представляется важной для будущих исследований, проводимых на российской выборке.

Ключевые слова: алекситимия, эмоциональная реактивность, отрицательные эмоции, положительные эмоции, психометрические свойства, психопатология, валидность.

Для цитаты: Ларионов П., Прис Д., Хохлова О., Яковлева М.В. Оценка алекситимии: психометрические свойства русскоязычной версии Пертского опросника алекситимии [Электронный ресурс] // Клиническая и специальная психология. 2023. Том 12. № 1. С. 43–65. DOI: 10.17759/cpse.2023120103

Introduction

Alexithymia is a multidimensional trait first coined in psychiatric settings by Sifneos in the early 1970s [23]. Sifneos observed that many psychiatric patients had substantial difficulty talking about their emotions, and commonly exhibited a cluster of emotion processing deficits [23]. Thus, the word alexithymia derives from the Greek meaning “no words for emotions”, and was used to describe this type of presentation. Today, a large body of statistical evidence now supports the status of alexithymia as a multidimensional trait comprised of three interrelated components: (1) difficulty identifying one’s own feelings (DIF), (2) difficulty describing feelings (DDF), and (3) externally orientated thinking (EOT) [22]. As described in the *attention-appraisal model of alexithymia* [22], together, this cluster of deficits reflects difficulties at different stages of emotion processing: difficulties focusing attention on emotions (i.e., EOT) and difficulties accurately appraising what those emotions are (i.e., DIF, DDF). Alexithymia is normally distributed in the general population, with around 10% of people having problematically high levels of alexithymia [10].

Alexithymia has been most commonly assessed using self-report tools, with the 20-item Toronto Alexithymia Scale (TAS-20) being most common for the past two decades [3]. Whilst a generally strong tool for measuring overall alexithymia, some psychometric problems have been noted in the TAS-20 [13]. Chiefly, the TAS-20 was not designed to provide separate information on each facet of alexithymia. When subscales are extracted (as researchers are often interested in alexithymia at the facet level [7; 11]), the EOT items almost always show low reliability [18]. For example, in a Russian context, the Russian TAS-20 has been found to have low reliability across the DDF and EOT items [24], thus limiting the clinical utility of the questionnaire. The TAS-20 developers, therefore, recommend only using the total scale score as an overall marker of alexithymia [4]. Moreover, the TAS-20 has shown some discriminant validity problems, whereby some of the variances in the DIF items appears to measure people’s current level of distress [13; 25].

To try to enable more comprehensive assessments of alexithymia, the 24-item Perth Alexithymia Questionnaire (PAQ) was recently developed in English [22]. It was designed to measure all the facets of alexithymia, and for the DIF and DDF components, the PAQ allows the deriving of valence-specific subscale scores (i.e., for negative and positive emotions). Therefore, the PAQ consists of five intended subscales: (1) Negative-Difficulty identifying feelings (N-DIF; 4 items, e.g., *When I'm feeling bad, I'm puzzled by those feelings*), (2) Positive-Difficulty identifying feelings (P-DIF; 4 items, e.g., *When I'm feeling good, I get confused about what emotion it is*), (3) Negative-Difficulty describing feelings (N-DDF; 4 items, e.g., *When I'm feeling bad (feeling an unpleasant emotion), I can't find the right words to describe those feelings*), (4) Positive-Difficulty describing feelings (P-DDF; 4 items, e.g., *When something good happens, it's hard for me to put into words how I'm feeling*) and (5) General-Externally orientated thinking (G-EOT; 8 items, e.g., *I prefer to focus on things I can actually see or touch, rather than my emotions*). These five subscales can also be combined into several composite scores, including a total PAQ score assessing overall alexithymia [22]. Our aim in this study is to introduce a Russian version of the PAQ.

Recently, several language translations of the PAQ have been developed, including Iranian [16; 19], Polish [15], and Turkish [6] versions. Studies examining the properties of the PAQ have consistently supported the intended 5-factor structure of the PAQ, its convergent and divergent validity, as well as good internal consistency reliability across all subscales and the total scale score. The PAQ has also shown good discriminant validity against measures of general psychological distress and good test-retest reliability [15]. The PAQ subscales were highly positively correlated with markers of stress, anxiety, and depressive symptoms [15]. Thus, we anticipated similar results in our study. As alexithymia is related to psychopathology symptoms [15], we predict that it may also be associated with decreased vitality levels. In view of a few studies supporting this link between alexithymia and vitality in clinical groups [5], our hypothesis on this negative link in a general community sample is exploratory. Studies have shown that people typically report higher levels of alexithymia for negative emotions compared to positive emotions, thus supporting the utility and relevance of measuring alexithymia across both negative and positive emotions [15].

Taken together, the PAQ, therefore, appears to so far have highly promising psychometric properties. There is presently no Russian version of the PAQ. **Our aim here** is therefore to introduce the Russian version and evaluate its psychometric properties. We examined the PAQ's factor structure, internal consistency reliability, convergent and divergent validity, and the predictive role of alexithymia in anxiety, depression, stress, and vitality levels.

Based on theory and previous studies, we anticipated (1) that the intended 5-factor subscale structure of the PAQ would be the best factor structure, (2) that the PAQ would correlate highly with the TAS-20, and correlate positively and moderately with markers of depression, anxiety, and stress symptoms as well as negative emotional reactivity, and (3) that the PAQ would correlate negatively and moderately with positive emotional reactivity and trait vitality. Moreover, we predicted that, across the PAQ subscales, people would tend to report higher levels of alexithymia for negative emotions compared to positive emotions.

Materials and Methods

Participants and procedure. The sample consisted of 229 Russian-speaking adults (196 females and 33 males) with ages ranging from 18 to 60 years ($M = 28.59$, $SD = 9.41$, Median = 25, Quartile 1 = 22, Quartile 3 = 35) recruited from the general population. Most respondents (73.36%) lived in a metropolis (above 1 million inhabitants), 17.90% – in large cities (from 100,000 to 1 million), 5.24% – in towns (from 20,000 to 100,000), 2.18% – in small towns (up to 20,000), and 1.31% – in villages. Individuals with higher education made up 63.32% of the respondents, and 36.68% had lower educational levels. Among the respondents, 31.00% were married.

The participants were recruited from June 2022 to December 2022 via social networks where there was a link to an online anonymous survey (the purposeful sampling method with maximum variation design was used). Inclusion criteria were (1) Russian-speaking people and (2) an age of 18 years or over. The study was conducted in accordance with the Declaration of Helsinki Ethical Principles. All respondents provided their informed consent digitally before they answered the questions. Not all respondents completed all the measures to avoid common method bias and fatigue during filling out the questionnaires. The number of participants who completed each questionnaire is shown in the parentheses near the measures in appropriate tables.

Translation of the questionnaire. The original English version of the PAQ was translated into Russian by three independent translators and the common Russian translation of the questionnaire was developed. Then we translated it back into English, and compared this back translation with the original version of the PAQ. Minor corrections were made, resulting in the final Russian version administered in this study (see Appendix 1).

Measures

1. *The PAQ* is a 24-item self-report measure of alexithymia [22]. The PAQ consists of five subscales: Negative-Difficulty identifying feelings (N-DIF; four items), Positive-Difficulty identifying feelings (P-DIF; four items), Negative-Difficulty describing feelings (N-DDF; four items), Positive-Difficulty describing feelings (P-DDF; four items), and General-Externally orientated thinking (G-EOT; eight items). These five subscales can be combined into several composite scores, including a total alexithymia scale score. Items are scored on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Higher scores indicate higher levels of alexithymia. Examples of the original English PAQ items are presented in Table 2, and the final Russian version with scoring instructions is presented in the Appendix 1 and 2.

2. *The Toronto Alexithymia Scale (TAS-20)*, developed by Bagby et al. [3], and in its Russian form by Starostina et al. [24], is a 20-item self-report measure of alexithymia. The TAS-20 consists of items assessing the DIF (seven items, e.g., *I am often confused about what emotion I am feeling*), DDF (five items, e.g., *I am able to describe my feelings easily*), and EOT (eight items, e.g., *I prefer to analyze problems rather than just describe them*) facets of alexithymia. The TAS-20 was originally designed to provide only a total scale score [4], however, subscale scores for each facet are also commonly calculated. There are five

reverse-scored items. Items are scored on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher scores indicate higher levels of alexithymia.

3. *The Patient Health Questionnaire-4 (PHQ-4)*, in its Russian version [20; 21], is a 4-item questionnaire for measuring anxiety and depressive symptoms in the previous two weeks. The PHQ-4 has two subscales, i.e., anxiety (two items, e.g., *Feeling nervous, anxious, or on edge*) and depression (two items, e.g., *Feeling down, depressed, or hopeless*). A total score can be also calculated. Items are scored on a 4-point Likert scale from 0 (*not at all*) to 3 (*nearly every day*). Higher scores indicate higher levels of symptoms.

4. *The Perceived Stress Scale-10 (PSS-10)*, in its Russian version by Ababkov et al. [1], was used for measuring the level of perceived stress during the previous month. The PSS-10 consists of ten statements (e.g., *In the last month, how often have you felt nervous and stressed?*). There are four reverse-scored items. The statements are evaluated on a 4-point Likert scale from 0 (*never*) to 4 (*very often*). Higher scores indicate a higher level of perceived stress.

5. *The Perth Emotional Reactivity Scale-Short Form (PERS-S)* in its Russian version by Larionov et al. [14], was used for measuring trait levels of emotional reactivity. The PERS-S is an 18-item self-report questionnaire designed to measure the ease of activation, intensity, and duration of positive and negative emotions. The PERS-S consists of six subscales (each containing three items), which can be combined into two valence-specific composite scores. Positive-activation (e.g., *I tend to get happy very easily*), positive-intensity (e.g., *When I'm joyful, I tend to feel it very deeply*), and positive-duration (e.g., *When I'm happy, the feeling stays with me for quite a while*) are the three subscales that form the general positive reactivity composite score. Negative-activation (e.g., *I tend to get upset very easily*), negative-intensity (e.g., *If I'm upset, I feel it more intensely than everyone else*), and negative-duration (e.g., *Once in a negative mood, it's hard to snap out of it*) are the three subscales that form the general negative reactivity composite score. Items are scored on a 5-point scale, ranging from 1 (*very unlike me*) to 5 (*very like me*). Higher scores indicate higher levels of emotional reactivity.

6. *The Subjective Vitality Scale (SVS)*, in its Russian version by Aleksandrova [2], was used for measuring the level of trait vitality. The SVS consists of seven items (e.g., *I feel alive and vital*), one of them being reverse-scored. The statements are rated on a 7-point Likert scale, ranging from 1 (*not at all true*) to 7 (*very true*). A higher score indicates a higher level of trait vitality.

Analytic strategy. Statistical analysis was carried out using Statistica v. 13.3 and R v. 4.2.2 with the lavaan and semTools (for confirmatory factor analysis), psych (for reliability analysis), and MVN (for testing multivariate normality) statistical packages. The data were screened for accuracy (minimum and maximum range of each variable). There were no missing data. Due to unbalanced sample sizes of female and male groups, we compared the PAQ subscale and the total scores between the gender groups using the non-parametric Mann–Whitney U test. For this test, we calculated effect sizes (eta-squared; interpretation: negligible < 0.01 < small < 0.06 < medium < 0.14 < large) using the Psychometrica calculator [17].

Factor structure. We tested the following theoretically informed factor models of the PAQ: (1) a 1-factor model (all 24 items were specified to load on a general alexithymia factor), (2) a 2-factor correlated model comprised of two factors (G-EOT and G-DAF) distinguishing between the attention (G-EOT) and appraisal (G-DAF) components of alexithymia, (3) a 3-factor correlated model comprised of three factors (G-DIF, G-DDF, and G-EOT) corresponding to the three facets of alexithymia but not accounting for valence, (4) a 3-factor correlated valence-specific model with three factors (N-DAF, P-DAF and G-EOT) where no distinction was made between the identifying and describing components of appraisal, but valence was accounted for, and (5) a 5-factor correlated valence-specific model comprised of five factors (N-DIF, P-DIF, N-DDF, P-DDF, and G-EOT) where a distinction was made between the identifying and describing components of appraisal and valence was accounted for. This 5-factor model reflected the intended subscale structure of the PAQ.

Due to the absence of multivariate normality of the PAQ items, confirmatory factor analysis with maximum likelihood estimation with robust standard errors and the Satorra–Bentler scaled test statistic was used. Fit was judged based on the following fit index values: root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), comparative fit index (CFI), and Tucker–Lewis index (TLI). RMSEA and SRMR values below 0.08 indicate acceptable fit and values below 0.06 excellent fit. CFI and TLI values greater than 0.90 indicate acceptable fit and values greater than 0.95 excellent fit [9].

Internal consistency reliability. McDonald’s omega values (ω) and Cronbach’s alpha coefficients (α) with 95% confidence intervals were calculated for all PAQ subscales and the total score. For these coefficients, values ≥ 0.70 are judged as acceptable, ≥ 0.80 as good, and ≥ 0.90 as excellent [8].

Convergent and divergent validity. For assessing convergent validity, we calculated Pearson correlations between PAQ scores and scores from the TAS-20 (alexithymia), PHQ-4 (anxiety and depressive symptoms), PSS-10 (stress symptoms), and PERS-S (negative reactivity traits). Pearson correlations between PAQ scores and PERS-S (positive reactivity traits) and SVS (vitality) scores were calculated to assess divergent validity.

Predictive role of alexithymia in anxiety, depression, stress and vitality levels. We conducted a set of multiple regression analyses using the forward entry method to examine whether PAQ scores could predict significant variance in anxiety, depression, stress, and vitality. The five PAQ subscales were used as predictors, and anxiety and depression scores (the two PHQ-4 subscales), stress (the PSS-10 score), and vitality (the SVS score) were the dependent variables across four separate multiple regression analyses.

Results

Appendix 3 presents descriptive statistics for all study variables. Skewness scores ranged from -0.58 to 1.03, whereas kurtosis scores ranged from -1.20 to 0.90, indicating that the variables were reasonably normally distributed. Age was also reasonably normally distributed (skewness = 1.12, kurtosis = 0.75). Pearson correlations between age and PAQ scores were statistically non-significant (r from -0.11 to 0.04, all $ps < 0.05$). The Mann–Whitney U test revealed no gender differences in four PAQ subscale scores (N-DIF, P-DIF,

N-DDF, P-DDF) and the total score (all $ps > 0.05$; eta-squared from 0 to 0.007, indicating negligible effect sizes). However, we found that males tended to have more externally orientated thinking traits (G-EOT) than females ($p = 0.002$; eta-squared = 0.044, indicating small effect size).

We conducted two paired t -tests to compare N-DIF and P-DIF scores, as well as N-DDF and P-DDF scores, in order to examine whether emotion valence influenced the extent of people's difficulties in identifying and describing their emotions, respectively. The participants reported significantly more difficulties in identifying ($t_{(228)} = 4.808$, $p < 0.001$, Cohen's $d = 0.318$) and describing ($t_{(228)} = 3.998$, $p < 0.001$, Cohen's $d = 0.264$) their negative emotions compared to their positive emotions, indicating utility of distinguishing emotional valence when assessing the DIF and DDF components of the alexithymia construct. The Cohen's d effect size of these differences was small.

Confirmatory factor analysis. The Henze–Zirkler's multivariate normality test indicated the absence of multivariate normality of the PAQ items ($HZ = 1.53$, $p < 0.001$). The 1-factor, 2-factor and 3-factor (no valence) models were a poor fit to the data (Table 1). The 3-factor (valence) model was an acceptable fit. The 5-factor model was a good fit with the best fit index values overall, but in this model the covariance matrix of latent variables was not positive definite, indicating a Heywood case [12]. To correct this Heywood issue, we analyzed the modification indices, which indicated the need to add 5 correlations between item residuals in the 5-factor model; between items 13 and 14, 10 and 11, 7 and 10, 1 and 4, and 7 and 8. We felt adding these correlated residuals was theoretically justifiable because of conceptual and wording similarities between those items, and their addition improved fit index values further.

Table 1

Goodness-of-fit indices for the PAQ models (N = 229)

Model	χ^2/df	CFI	TLI	RMSEA (90% confidence interval)	SRMR
1-factor	1039.051/252	0.690	0.661	0.141 (0.132; 0.150)	0.112
2-factor: G-DAF and G-EOT factors	721.459/251	0.815	0.797	0.109 (0.100; 0.118)	0.087
3-factor (no valence): G-DIF, G-DDF and G-EOT factors	699.066/249	0.822	0.803	0.107 (0.098; 0.117)	0.087
3-factor (valence): N-DAF, P-DAF and G-EOT factors	434.383/249	0.927	0.920	0.069 (0.058; 0.079)	0.062
* 5-factor model: N-DIF, P-DIF, N-DDF, P-DDF and G-EOT factors	373.486/242	0.948	0.941	0.059 (0.047; 0.070)	0.060
5-factor model with five error terms: N-DIF, P-DIF, N-DDF, P-DDF and G-EOT factors	316.405/237	0.969	0.964	0.046 (0.031; 0.058)	0.059

Note. * – Heywood case (covariance matrix of latent variables is not positive definite). CFI – comparative fit index; TLI – Tucker–Lewis index; RMSEA – root mean square error of approximation;

SRMR – standardized root mean square residual; N-DIF – Negative-Difficulty identifying feelings; P-DIF – Positive-Difficulty identifying feelings; N-DDF – Negative-Difficulty describing feelings; P-DDF – Positive-Difficulty describing feelings; G-EOT – General-Externally orientated thinking; G-DIF – General-Difficulty identifying feelings; G-DDF – General-Difficulty describing feelings; N-DAF – Negative-Difficulty appraising feelings; P-DAF – Positive-Difficulty appraising feelings; G-DAF – General-Difficulty appraising feelings.

Factor loadings were high for the 5-factor model with the five correlated residuals added (loadings ≥ 0.520 , all $ps < 0.001$; see Table 2). Thus, the confirmatory factor analysis results showed that 3-factor (valence) and 5-factor model with five correlated residuals were optimal solutions, with the 5-factor model being superior in fit statistics and reflecting the intended factor structure of the questionnaire. Thus, we selected the 5-factor model with five correlated residuals as the best and a theoretically congruent solution in our data-set.

Table 2

Descriptive statistics for the PAQ subscales and items, and standardized item factor loadings from confirmatory factor analysis for the 5-factor model with five correlated residuals (N = 229)

PAQ subscales and items	M	SD	Sk	Ku	Factor loadings (all $ps < 0.001$)
Negative-Difficulty identifying feelings	11.29	5.77	0.77	-0.15	–
2. When I'm feeling <i>bad</i> , I can't tell whether I'm sad, angry, or scared	2.59	1.68	1.19	0.59	0.653
8. When I'm feeling <i>bad</i> , I can't make sense of those feelings	3.03	1.80	0.67	-0.71	0.734
14. When I'm feeling <i>bad</i> , I get confused about what emotion it is	3.05	1.78	0.64	-0.67	0.836
20. When I'm feeling <i>bad</i> , I'm puzzled by those feelings	2.61	1.64	0.98	-0.07	0.899
Positive-Difficulty identifying feelings	9.84	5.58	1.03	0.39	–
5. When I'm feeling <i>good</i> , I can't tell whether I'm happy, excited, or amused	2.62	1.78	1.04	-0.07	0.718
11. When I'm feeling <i>good</i> , I can't make sense of those feelings	2.30	1.54	1.35	1.12	0.765
17. When I'm feeling <i>good</i> , I get confused about what emotion it is	2.53	1.56	1.09	0.42	0.932
23. When I'm feeling <i>good</i> , I'm puzzled by those feelings	2.40	1.55	1.22	0.62	0.890
Negative-Difficulty describing feelings	12.49	5.86	0.48	-0.70	–
1. When I'm feeling <i>bad</i> (feeling an unpleasant emotion), I can't find the right words to describe those feelings	3.08	1.71	0.72	-0.54	0.649
7. When I'm feeling <i>bad</i> , I can't talk about those feelings in much depth or detail	3.40	2.04	0.39	-1.24	0.539
13. When something <i>bad</i> happens, it's hard for me to put into words how I'm feeling	3.11	1.79	0.59	-0.82	0.833
19. When I'm feeling <i>bad</i> , if I try to describe how I'm feeling I don't know what to say	2.89	1.77	0.77	-0.51	0.865

PAQ subscales and items	M	SD	Sk	Ku	Factor loadings (all ps < 0.001)
Positive-Difficulty describing feelings	11.10	5.93	0.72	-0.43	-
4. When I'm feeling <i>good</i> (feeling a pleasant emotion), I can't find the right words to describe those feelings	2.69	1.75	1.03	0.05	0.729
10. When I'm feeling <i>good</i> , I can't talk about those feelings in much depth or detail	3.14	1.96	0.50	-1.15	0.670
16. When something <i>good</i> happens, it's hard for me to put into words how I'm feeling	2.66	1.65	0.86	-0.32	0.889
22. When I'm feeling <i>good</i> , if I try to describe how I'm feeling I don't know what to say	2.60	1.66	0.93	-0.22	0.874
General-Externally orientated thinking	19.98	10.11	0.94	0.01	-
3. I tend to ignore how I feel	3.09	1.84	0.57	-0.80	0.750
6. I prefer to just let my feelings happen in the background, rather than focus on them	3.19	1.70	0.58	-0.58	0.748
9. I don't pay attention to my emotions	2.16	1.49	1.35	1.10	0.766
12. Usually, I try to avoid thinking about what I'm feeling	2.44	1.71	1.14	0.18	0.797
15. I prefer to focus on things I can actually see or touch, rather than my emotions	2.83	1.76	0.79	-0.37	0.719
18. I don't try to be 'in touch' with my emotions	2.33	1.64	1.23	0.56	0.722
21. It's not important for me to know what I'm feeling	2.01	1.67	1.75	2.02	0.520
24. It's strange for me to think about my emotions	1.93	1.52	1.79	2.35	0.716

Note. PAQ – Perth Alexithymia Questionnaire. Sk – Skewness; Ku – Kurtosis.

Estimated correlations between the factors (subscales) of the 5-factor model with five correlated residuals are shown in Table 3.

Table 3

Estimated correlations between the factors (subscales) of the 5-factor PAQ model with five correlated residuals (all ps < 0.001; N = 229)

PAQ subscales (factors)	Negative-Difficulty identifying feelings	Positive-Difficulty identifying feelings	Negative-Difficulty describing feelings	Positive-Difficulty describing feelings
Negative-Difficulty identifying feelings	-			
Positive-Difficulty identifying feelings	0.761	-		
Negative-Difficulty describing feelings	0.905	0.651	-	
Positive-Difficulty describing feelings	0.660	0.931	0.697	-
General-Externally orientated thinking	0.599	0.523	0.616	0.479

Note. PAQ – Perth Alexithymia Questionnaire.

The estimated correlations between the subscales of N-DIF and N-DDF as well as between subscales of P-DIF and P-DDF were positive and very high (estimated $r > 0.90$, all $ps < 0.001$). High correlations were also reported between G-EOT and other PAQ subscales ($r > 0.48$, all $ps < 0.001$).

Internal consistency reliability. As displayed in Appendix 3, all PAQ subscales and the total score showed good to excellent internal consistency reliability (ω and $\alpha \geq 0.82$).

Convergent and divergent validity. The relationships between the PAQ scores and the other study variables were analyzed (see Table 4). The PAQ subscales and total score were highly positively correlated with the TAS-20 scores as the other established measure of alexithymia (r from 0.50 to 0.86). PAQ scores were highly negatively correlated with general positive reactivity (r from -0.41 to -0.62), whereas the P-DDF subscale and negative-valence PAQ subscales (i.e., N-DIF and N-DDF) were moderately positively correlated with general negative reactivity (r from 0.24 to 0.33). Positive-valence PAQ subscales (i.e., P-DIF and P-DDF) were slightly positively correlated with anxiety symptoms and PHQ-4 Total score (r from 0.25 to 0.26), and all PAQ scores were not correlated with depressive symptoms. In general, PAQ subscales (except G-EOT) and the total PAQ score were moderately positively correlated with stress (r from 0.32 to 0.44). The P-DIF subscale and the total PAQ score were significantly negatively correlated with vitality ($r = -0.25$ and -0.23 , respectively). Detailed results are presented in Table 4.

Table 4

Pearson correlations between the PAQ scores and TAS-20, PHQ-4, PSS-10, PERS-S and SVS

Variables	PAQ Negative-Difficulty identifying feelings	PAQ Positive-Difficulty identifying feelings	PAQ Negative-Difficulty describing feelings	PAQ Positive-Difficulty describing feelings	PAQ General-Externally orientated thinking	PAQ Total score
TAS-20 Difficulties identifying feelings (N = 77)	0.74***	0.70***	0.64***	0.57***	0.57***	0.72***
TAS-20 Difficulties describing feelings (N = 77)	0.67***	0.66***	0.72***	0.68***	0.60***	0.74***
TAS-20 Externally orientated thinking (N = 77)	0.54***	0.50***	0.62***	0.53***	0.67***	0.66***
TAS-20 Total score (N = 77)	0.80***	0.76***	0.80***	0.71***	0.73***	0.86***
PHQ-4 Anxiety symptoms (N = 81)	0.20	0.25*	0.15	0.25*	-0.12	0.14
PHQ-4 Depressive symptoms (N = 81)	0.15	0.19	0.16	0.21	0.12	0.20
PHQ-4 Total score (N = 81)	0.20	0.25*	0.18	0.26*	0.00	0.20
PSS-4 Stress symptoms (N = 81)	0.32**	0.39***	0.33**	0.44***	0.04	0.35**
PERS-S Positive-activation (N = 71)	-0.44***	-0.56***	-0.42***	-0.58***	-0.35**	-0.58***
PERS-S Positive-intensity (N = 71)	-0.30*	-0.31**	-0.26*	-0.33**	-0.39***	-0.42***
PERS-S Positive-duration (N = 71)	-0.39***	-0.44***	-0.42***	-0.47***	-0.23*	-0.48***
PERS-S Negative-activation (N = 71)	0.22	0.20	0.34**	0.24*	0.04	0.24*

Variables	PAQ Negative- Difficulty identifying feelings	PAQ Positive- Difficulty identifying feelings	PAQ Negative- Difficulty describing feelings	PAQ Positive- Difficulty describing feelings	PAQ General- Externally orientated thinking	PAQ Total score
PERS-S Negative-intensity (N = 71)	0.24*	0.13	0.27*	0.16	-0.19	0.12
PERS-S Negative-duration (N = 71)	0.30*	0.22	0.29*	0.26*	0.02	0.25*
PERS-S General positive reactivity (N = 71)	-0.48***	-0.55***	-0.47***	-0.58***	-0.41***	-0.62***
PERS-S General negative reactivity (N = 71)	0.28*	0.20	0.33**	0.24*	-0.05	0.22
SVS Vitality trait (N = 81)	-0.22	-0.25*	-0.19	-0.28*	-0.05	-0.23*

Note. PAQ – Perth Alexithymia Questionnaire; TAS-20 – Toronto Alexithymia Scale-20; PHQ-4 – Patient Health Questionnaire-4; PSS-10 – Perceived Stress Scale-10; PERS-S – The Perth Emotional Reactivity Scale-Short Form; SVS – Subjective Vitality Scale; * – $p < 0.05$; ** – $p < 0.01$; *** – $p < 0.001$. The number of the participants (N) who completed each questionnaire was shown in the parentheses near the measures.

Predictive role of alexithymia in anxiety, depression, stress and vitality levels. Our multiple regression analyses (forward entry method) reinforced that PAQ scores were significant predictors of anxiety, depression, and stress symptoms as well as vitality (see Table 5).

Table 5

Regression models for predicting psychopathology symptoms and vitality (N = 81)

Predictors	PHQ-4 Anxiety symptoms	PHQ-4 Depressive symptoms	PSS-10 Stress	SVS Vitality
	Beta coefficients			
PAQ Negative-Difficulty identifying feelings	ns	ns	ns	ns
PAQ Positive-Difficulty identifying feelings	0.33**	ns	ns	ns
PAQ Negative-Difficulty describing feelings	ns	ns	ns	ns
PAQ Positive-Difficulty describing feelings	ns	ns	0.44***	-0.28*
PAQ General-Externally orientated thinking	-0.23*	ns	ns	ns
Model parameters	$F_{(2, 78)} = 4.903$, $p = 0.010$	–	$F_{(1, 79)} = 18.585$, $p < 0.001$	$F_{(1, 79)} = 6.950$, $p = 0.010$
Proportion of variance explained (adjusted R^2 , %)	8.9	–	18.0	6.9
Durbin-Watson statistic	1.838	–	1.457*	1.475*

Note. PAQ – Perth Alexithymia Questionnaire; PHQ-4 – Patient Health Questionnaire-4; PSS-10 – Perceived Stress Scale-10; SVS – Subjective Vitality Scale; ns = non-significant predictor, which was considered, but not included; * – $p < 0.05$; ** – $p < 0.01$; *** – $p < 0.001$.

Three out of four regression models were statistically significant and explained 6.9 to 18% of the variance in anxiety symptoms, stress, and vitality. In particular, P-DIF was a positive significant predictor, whereas G-EOT was a negative significant predictor of anxiety symptoms. P-DDF was a positive and a negative significant predictor for stress and vitality, respectively. As such, there was good support in these data for the clinical relevance of distinguishing emotional valence in the DIF and DDF facets of the alexithymia construct.

Discussion

The aim of the study was to introduce the first Russian version of the PAQ and examine its psychometric properties. Overall, the validity and internal consistency reliability of the questionnaire were supported. The Russian PAQ was characterized by the intended and theoretically congruent 5-factor structure, and this is in line with the conclusions presented in other validation studies [6; 15; 16; 19; 22]. The internal consistency reliability of all five PAQ subscales and the total score were good.

The convergent and divergent validity of the PAQ were also supported. In general, the PAQ subscales and the total score were highly positively correlated with the TAS-20 [15]. Surprisingly, no correlations were noted between alexithymia and depressive symptoms, which is inconsistent with past work. It may be that with larger sample sizes some of these smaller correlations would become significant. Nevertheless, the P-DIF and P-DDF subscales were significantly positively associated with anxiety symptoms and the total PHQ-4 score, as well as being negatively associated with the trait vitality. All PAQ scores (except G-EOT) were positively associated with stress, supporting good convergent validity of the Russian PAQ.

The valence of the emotion when assessing alexithymia appeared to play an important role in our data-set. As expected, participants reported significantly more difficulties appraising their negative emotions (N-DIF and N-DDF) compared to their positive emotions (P-DIF and P-DDF), which is in line with previous reports [15]. However, it should be noted that, in our sample, the positive valence-specific subscales (i.e., P-DIF and P-DDF) showed stronger relationships with the studied correlates than the negative ones (i.e., N-DIF and N-DDF). This was also reflected in our regression models, where P-DIF and P-DDF had important roles as unique predictors of various symptoms. Thus, whilst problems in appraising positive emotions may be less prevalent than problems with negative emotions, when problems in the positive domain are present they appear to have particular relevance.

This clinical relevance of appraising positive emotions (P-DIF and P-DDF) will be important for future and more in-depth investigation in Russian samples and other cultural groups. Our data suggest that difficulties in appraising positive emotions might, in some instances, be a more significant risk factor for psychopathology development than difficulties in appraising negative emotions. Given that the PAQ is the only published alexithymia tool that currently allows assessment of the positive valence domain, these findings support the added utility of the PAQ. PAQ profiles might usefully inform the application of more targeted treatment modalities focused on improving emotional

awareness in either positive or negative valence domains. Nevertheless, these speculations are preliminary, and need to be examined empirically in larger samples and different settings.

Limitations and Future Directions

The study took place in sample of adults with a wide range of ages, however, it was predominantly females. We did not examine the PAQ in clinical samples and did not examine its test-retest reliability. This is a cross-sectional study; therefore, no conclusions can be drawn regarding the temporal order of alexithymia and its correlates. As such, future work will be needed to test the generalizability of our findings in a broader sample and in different settings, including clinical ones. Future measurement invariance analysis of the PAQ across age, gender, and cultural groups is recommended.

Conclusions

Our study supports the cross-cultural validity of the PAQ, aligning with findings from other language versions and reinforcing its strong psychometric properties [6; 15; 16; 19; 22]. Our data suggest the Russian version of the PAQ is a useful tool for comprehensively measuring the alexithymia construct, enabling robust facet-level and valence-specific assessments.

References

1. Ababkov V.A., Barisnikov K., Vorontzova-Wenger O.V. et al. Validizatsiya russkoyazychnoi versii oprosnika «Shkala vosprinimaemogo stressa–10» [Validation of the Russian version of the Questionnaire «Scale of Perceived Stress–10»]. *Vestnik Sankt-Peterburgskogo universiteta. Seriya 16. Psikhologiya. Pedagogika = Vestnik of St. Petersburg University. Series 16. Psychology. Education*, 2016, no. 2, pp. 6–15. URL: https://dspace.spbu.ru/bitstream/11701/2551/1/Ababkov_Barishnikov_et_al.pdf. (Accessed: 13.03.2023). (In Russ., abstr. in Engl.).
2. Aleksandrova L.A. Sub"ektivnaya vital'nost' kak predmet issledovaniya [Subjective vitality as a research object]. *Psikhologiya. Zhurnal Vysshei shkoly ekonomiki = Psychology. Journal of Higher School of Economics*, 2014, vol. 11, no. 1, pp. 133–163. URL: https://psyjournal.hse.ru/data/2014/10/31/1323618066/Aleksandrova_11-01pp133-163.pdf. (Accessed: 13.03.2023). (In Russ., abstr. in Engl.).
3. Bagby R.M., Taylor G.J., Parker J.D. The Twenty-item Toronto Alexithymia Scale—II. Convergent, discriminant, and concurrent validity. *Journal of Psychosomatic Research*, 1994, vol. 38, no. 1, pp. 33–40. DOI: 10.1016/0022-3999(94)90006-x
4. Bagby R.M., Taylor G.J., Quilty L.C. et al. Reexamining the factor structure of the 20-item Toronto alexithymia scale: Commentary on Gignac, Palmer, and Stough. *Journal of Personality Assessment*, 2007, vol. 89, no. 3, pp. 258–264. DOI: 10.1080/00223890701629771
5. Barbosa F., Freitas J., Barbosa A. Alexithymia in chronic urticaria patients. *Psychology, Health & Medicine*, 2011, vol. 16, no. 2, pp. 215–224. DOI: 10.1080/13548506.2010.525657

6. Bilge Y., Bilge Y. The measurement of Attention-Appraisal Model of Alexithymia: psychometric properties of the Perth Alexithymia Questionnaire in Turkish. *Anatolian Journal of Psychiatry*, 2020, vol. 21, no. 2, pp. 71–79. DOI: 10.5455/apd.133183
7. Demers L.A., Schreiner M.W., Hunt R.H. et al. Alexithymia is associated with neural reactivity to masked emotional faces in adolescents who self-harm. *Journal of Affective Disorders*, 2019, vol. 249, pp. 253–261. DOI: 10.1016/j.jad.2019.02.038
8. Groth-Marnat G. Handbook of Psychological Assessment. 5th ed. Hoboken, NJ: John Wiley & Sons Inc., 2009. 752 p.
9. Hu L.T., Bentler P.M. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 1999, vol. 6, no. 1, pp. 1–55. DOI: 10.1080/10705519909540118
10. Jørgensen M.M., Zachariae R., Skytthe A. et al. Genetic and environmental factors in alexithymia: A population-based study of 8,785 Danish twin pairs. *Psychotherapy and Psychosomatics*, 2007, vol. 76, no. 6, pp. 369–375. DOI: 10.1159/000107565.
11. Kajanoja J., Scheinin N.M., Karukivi M. et al. Alcohol and tobacco use in men: The role of alexithymia and externally oriented thinking style. *The American Journal of Drug and Alcohol Abuse*, 2019, vol. 45, no. 2, pp. 199–207. DOI: 10.1080/00952990.2018.1528267
12. Kolenikov S., Bollen K.A. Testing negative error variances: Is a Heywood case a symptom of misspecification? *Sociological Methods & Research*, 2012, vol. 41, no. 1, pp. 124–167. DOI: 10.1177/0049124112442138
13. Kooiman C.G., Spinhoven P., Trijsburg R.W. The assessment of alexithymia: A critical review of the literature and a psychometric study of the Toronto Alexithymia Scale-20. *Journal of Psychosomatic Research*, 2002, vol. 53, no. 6, pp. 1083–1090. DOI: 10.1016/S0022-3999(02)00348-3
14. Larionov P.M., Ageenkova E.K., Belashina T.V. Psikhometricheskie svoistva russkoyazychnoi versii kratkoi formy Pertskoi shkaly emotsional'noi reaktivnosti [Psychometric properties of the Russian version of the Perth Emotional Reactivity Scale-Short Form]. *Nevrologiya, neiropsikhiatriya, psikhosomatika = Neurology, Neuropsychiatry, Psychosomatics*, 2021, vol. 13, no. 2, pp. 26–33. DOI: 10.14412/2074-2711-2021-2-26-33 (In Russ., abstr. in Engl.).
15. Larionow P., Preece D.A., Mudło-Głagolska K. Assessing alexithymia across negative and positive emotions: Psychometric properties of the Polish version of the Perth Alexithymia Questionnaire. *Frontiers in Psychiatry*, 2022, vol. 13, article 1047191. DOI: 10.3389/fpsy.2022.1047191
16. Lashkari A., Dehghani M., Sadeghi-Firoozabadi V. et al. Further support for the psychometric properties of the Farsi version of Perth Alexithymia Questionnaire. *Frontiers in Psychology*, 2021, vol. 12, article 657660. DOI: 10.3389/fpsyg.2021.657660
17. Lenhard W., Lenhard A. Computation of effect sizes. 2016. URL: https://www.psychometrica.de/effect_size.html (Accessed: 13.03.2023).

18. Meganck R., Vanheule S., Desmet M. Factorial validity and measurement invariance of the 20-item Toronto Alexithymia Scale in clinical and nonclinical samples. *Assessment*, 2008, vol. 15, no. 1, pp. 36–47. DOI: 10.1177/1073191107306140
19. Mousavi Asl E., Mahaki B., Khanjani S. et al. The assessment of alexithymia across positive and negative emotions: The psychometric properties of the Iranian version of the Perth Alexithymia Questionnaire. *Iranian Journal of Psychiatry and Behavioral Sciences*, 2020, vol. 14, no. 4, e102317. DOI: 10.5812/ijpbs.102317
20. Patient Health Questionnaire Screeners. 2022. URL: <https://www.phqscreeners.com> (Accessed: 13.03.2023).
21. Pogosova N.V., Dovzhenko T.V., Babin A.G. et al. Russkoyazychnaya versiya oprosnikov PHQ-2 i 9: chuvstvitel'nost' i spetsifichnost' pri vyyavlenii depressii u patsientov obshchemeditsinskoi ambulatornoi praktiki [Russian version of PHQ-2 and 9 questionnaires: Sensitivity and specificity in detection of depression in outpatient general medical practice]. *Kardiovaskulyarnaya terapiya i profilaktika = Cardiovascular Therapy and Prevention*, 2014, vol. 13, no. 3, pp. 18–24. DOI: 10.15829/1728-8800-2014-3-18-24 (In Russ., abstr. in Engl.).
22. Preece D., Becerra R., Robinson K. et al. The psychometric assessment of alexithymia: Development and validation of the Perth Alexithymia Questionnaire. *Personality and Individual Differences*, 2018, vol. 132, pp. 32–44. DOI: 10.1016/j.paid.2018.05.011
23. Sifneos P.E. The prevalence of «alexithymic» characteristics in psychosomatic patients. *Psychotherapy and Psychosomatics*, 1973, vol. 22, no. 2–6, pp. 255–262. DOI: 10.1159/000286529
24. Starostina E.G., Taylor G.D., Quilty L. et al. Torontskaya shkala aleksitimii (20 punktov): validizatsiya russkoyazychnoi versii na vyborke terapevticheskikh bol'nykh [A new 20-item version of the Toronto Alexithymia Scale: Validation of the Russian language translation in a sample of medical patients]. *Sotsial'naya i klinicheskaya psikhatriya = Social and Clinical Psychiatry*, 2010, vol. 20 (4), pp. 31–38. (In Russ., abstr. in Engl.).
25. Veirman E., Van Ryckeghem D., Verleysen G. et al. What do alexithymia items measure? A discriminant content validity study of the Toronto-alexithymia-scale-20. *PeerJ*, 2021, vol. 9, e11639. DOI: 10.7717/peerj.11639

APPENDIX 1

**Пертский опросник алекситимии (русскоязычная версия: Ларионов и др., 2023)
 The Perth Alexithymia Questionnaire (Preece и др., 2018)**

Этот опросник позволяет исследовать то, как Вы воспринимаете и переживаете свои эмоции. Пожалуйста, оцените следующие утверждения в зависимости от того, **насколько Вы согласны или не согласны с тем, что данное утверждение верно по отношению к Вам**. Обведите кружком один ответ для каждого утверждения.

В одних утверждениях упоминаются негативные или неприятные эмоции, то есть такие эмоции, как печаль, гнев или страх. В других утверждениях упоминаются позитивные или приятные эмоции, то есть такие эмоции, как счастье, веселье или радостное возбуждение.

		Совершенно не согласен(на)	...	...	Ни согласен(на), ни не согласен(на)	...	...	Совершенно согласен(на)
1	Когда я чувствую себя <i>плохо</i> (испытываю неприятные эмоции), я не могу найти подходящие слова, чтобы описать эти чувства.	1	2	3	4	5	6	7
2	Когда я чувствую себя <i>плохо</i> , я не могу определить, грущу ли я, злюсь или боюсь.	1	2	3	4	5	6	7
3	Я склонен(на) игнорировать свои чувства.	1	2	3	4	5	6	7
4	Когда я чувствую себя <i>хорошо</i> (испытываю приятные эмоции), я не могу найти подходящие слова, чтобы описать эти чувства.	1	2	3	4	5	6	7
5	Когда я чувствую себя <i>хорошо</i> , я не могу определить, счастлив(а) ли я, взволнован(а) или весел(а).	1	2	3	4	5	6	7
6	Я предпочитаю просто позволить своим чувствам быть на заднем плане, а не сосредотачиваться на них.	1	2	3	4	5	6	7
7	Когда я чувствую себя <i>плохо</i> , я не могу говорить об этих чувствах очень глубоко и подробно.	1	2	3	4	5	6	7
8	Когда я чувствую себя <i>плохо</i> , я не могу понять смысл этих чувств.	1	2	3	4	5	6	7
9	Я не обращаю внимания на свои эмоции.	1	2	3	4	5	6	7
10	Когда я чувствую себя <i>хорошо</i> , я не могу говорить об этих чувствах очень глубоко и подробно.	1	2	3	4	5	6	7
11	Когда я чувствую себя <i>хорошо</i> , я не могу понять смысл этих чувств.	1	2	3	4	5	6	7

		Совершенно не согласен(на)	...	...	Ни согласен(на), ни не согласен(на)	...	...	Совершенно согласен(на)
12	Обычно я стараюсь не думать о том, что я чувствую.	1	2	3	4	5	6	7
13	Когда случается что-то <i>плохое</i> , мне трудно выразить словами, что я чувствую.	1	2	3	4	5	6	7
14	Когда я чувствую себя <i>плохо</i> , я сомневаюсь в том, какая это эмоция.	1	2	3	4	5	6	7
15	Я предпочитаю фокусироваться на вещах, которые я могу реально увидеть или потрогать, а не на своих эмоциях.	1	2	3	4	5	6	7
16	Когда случается что-то <i>хорошее</i> , мне трудно выразить словами, что я чувствую.	1	2	3	4	5	6	7
17	Когда я чувствую себя <i>хорошо</i> , я сомневаюсь в том, какая это эмоция.	1	2	3	4	5	6	7
18	Я не пытаюсь быть «в контакте» со своими эмоциями.	1	2	3	4	5	6	7
19	Когда я чувствую себя <i>плохо</i> , если я пытаюсь описать, что чувствую, я не знаю, что сказать.	1	2	3	4	5	6	7
20	Когда я чувствую себя <i>плохо</i> , я не могу понять, что это за чувства.	1	2	3	4	5	6	7
21	Мне не важно знать, что я чувствую.	1	2	3	4	5	6	7
22	Когда я чувствую себя <i>хорошо</i> , если я пытаюсь описать, что чувствую, я не знаю, что сказать.	1	2	3	4	5	6	7
23	Когда я чувствую себя <i>хорошо</i> , я не могу понять, что это за чувства.	1	2	3	4	5	6	7
24	Мне странно думать о своих эмоциях.	1	2	3	4	5	6	7

APPENDIX 2

Пертский опросник алекситимии (PAQ) — это самоотчетный опросник для взрослых и подростков, состоящий из 24 утверждений. PAQ предназначен для оценки всех компонентов алекситимии по отношению как к отрицательным, так и положительным эмоциям. PAQ состоит из 5 субшкал и 6 составных шкал (все они представлены в таблице ниже), причем более высокие оценки указывают на более высокий уровень алекситимии. На практике чаще всего используются и учитываются 5 субшкал и общий балл по шкале, так как это сочетание обеспечивает оптимальный баланс полноты и краткости, который подходит для большинства исследовательских и клинических целей.

Субшкалы/составные шкалы	Как производить подсчет?	Что оценивается?
Субшкалы		
Трудности с идентификацией <i>негативных</i> чувств (N-DIF)	Сумма пунктов 2, 8, 14, 20	Трудности с идентификацией, пониманием и дифференциацией собственных негативных чувств
Трудности с идентификацией <i>позитивных</i> чувств (P-DIF)	Сумма пунктов 5, 11, 17, 23	Трудности с идентификацией, пониманием и дифференциацией собственных положительных чувств
Трудности с описанием <i>негативных</i> чувств (N-DDF)	Сумма пунктов 1, 7, 13, 19	Трудности с описанием и передачей собственных негативных чувств.
Трудности с описанием <i>позитивных</i> чувств (P-DDF)	Сумма пунктов 4, 10, 16, 22	Трудности с описанием и передачей собственных положительных чувств
Внешне-ориентированный тип мышления (G-EOT)	Сумма пунктов 3, 6, 9, 12, 15, 18, 21, 24	Склонность не концентрировать внимание на собственных эмоциях (негативных и позитивных)
Составные шкалы		
Трудности с определением <i>негативных</i> и <i>позитивных</i> чувств (G-DIF)	Сумма значений по субшкалам N-DIF и P-DIF	Трудности с идентификацией, пониманием и дифференциацией собственных негативных и позитивных чувств
Трудности с описанием <i>негативных</i> и <i>позитивных</i> чувств (G-DDF)	Сумма значений по субшкалам N-DDF и P-DDF	Трудности с описанием и передачей собственных негативных и позитивных чувств

Ларионов П., Прис Д., Хохлова О. и др.
 Оценка алекситимии: психометрические
 свойства русскоязычной версии
 Пертского опросника алекситимии
 Клиническая и специальная психология
 2023. Том 12. № 1. С. 43–65.

Larionow P., Preece D.A., Khokhlova O. et al.
 Assessing Alexithymia:
 Psychometric Properties of the Russian Version
 of the Perth Alexithymia Questionnaire
 Clinical Psychology and Special Education
 2023, vol. 12, no. 1, pp. 43–65.

Субшкалы/составные шкалы	Как производить подсчет?	Что оценивается?
Трудности с оценкой <i>негативных</i> чувств (N-DAF)	Сумма значений по субшкалам N-DIF и N-DDF	Трудности с оценкой (т.е. идентификацией и описанием) собственных негативных чувств
Трудности с оценкой <i>позитивных</i> чувств (P-DAF)	Сумма значений по субшкалам P-DIF и P-DDF	Трудности с оценкой (т.е. идентификацией и описанием) собственных положительных чувств
Трудности с оценкой <i>негативных и позитивных</i> чувств (G-DAF)	Сумма значений по субшкалам N-DIF, P-DIF, N-DDF и P-DDF	Трудности с оценкой (т.е. идентификацией и описанием) собственных негативных и позитивных чувств
Общий уровень алекситимии	Сумма всех пунктов	Общий уровень алекситимии; трудности с концентрацией внимания на собственных негативных и позитивных чувствах, а также их оценкой

APPENDIX 3

**Descriptive statistics and McDonald's omega (ω) and Cronbach's alpha (α) values
 with 95% confidence intervals (CI) for the PAQ, TAS-20, PHQ-4,
 PSS-10, PERS-S and SVS**

Variables	Total sample (196 females and 33 males)								
	ω (95%CI)	α (95%CI)	N	M	SD	Min	Max	Sk	Ku
PAQ Negative-Difficulty identifying feelings	0.86 (0.83; 0.89)	0.86 (0.83; 0.89)	229	11.29	5.77	4	28	0.77	-0.15
PAQ Positive-Difficulty identifying feelings	0.89 (0.87; 0.91)	0.89 (0.87; 0.91)	229	9.84	5.58	4	27	1.03	0.39
PAQ Negative-Difficulty describing feelings	0.82 (0.78; 0.86)	0.82 (0.77; 0.85)	229	12.49	5.86	4	28	0.48	-0.70
PAQ Positive-Difficulty describing feelings	0.86 (0.84; 0.89)	0.87 (0.84; 0.90)	229	11.10	5.93	4	28	0.72	-0.43
PAQ General-Externally orientated thinking	0.90 (0.88; 0.92)	0.89 (0.87; 0.91)	229	19.98	10.11	8	49	0.94	0.01
PAQ Total score	0.94 (0.93; 0.95)	0.95 (0.93; 0.96)	229	64.70	27.23	24	149	0.67	-0.09
TAS-20 Difficulties identifying feelings	0.85 (0.80; 0.90)	0.85 (0.80; 0.90)	77	17.27	6.66	7	31	0.25	-0.71
TAS-20 Difficulties describing feelings	0.78 (0.70; 0.86)	0.77 (0.67; 0.84)	77	11.53	4.68	5	23	0.29	-0.97
TAS-20 Externally orientated thinking	0.64 (0.52; 0.76)	0.66 (0.53; 0.76)	77	14.81	4.51	8	30	0.82	0.90
TAS-20 Total score	0.88 (0.84; 0.92)	0.87 (0.82; 0.91)	77	43.61	13.13	21	75	0.22	-0.58
PHQ-4 Anxiety symptoms	0.74 (0.58; 0.83)	0.74 (0.60; 0.84)	81	2.75	1.57	0	6	0.22	-0.44
PHQ-4 Depressive symptoms	0.80 (0.68; 0.87)	0.80 (0.69; 0.87)	81	3.20	1.63	0	6	0.26	-0.81
PHQ-4 Total score	0.81 (0.74; 0.87)	0.81 (0.73; 0.87)	81	5.95	2.83	1	12	0.31	-0.78
PSS-10 Stress symptoms	0.89 (0.86; 0.93)	0.89 (0.85; 0.92)	81	31.10	7.25	13	44	-0.19	-0.55
PERS-S Positive-activation	0.77 (0.67; 0.86)	0.77 (0.66; 0.85)	71	11.97	2.22	6	15	-0.58	0.01
PERS-S Positive-intensity	0.80 (0.73; 0.88)	0.74 (0.60; 0.83)	71	10.97	2.40	4	15	-0.51	-0.01
PERS-S Positive-duration	0.80 (0.73; 0.88)	0.81 (0.71; 0.87)	71	9.97	2.92	3	15	-0.35	-0.66
PERS-S Negative-activation	0.84 (0.77; 0.90)	0.83 (0.75; 0.89)	71	10.28	3.21	3	15	-0.47	-0.49
PERS-S Negative-intensity	0.86 (0.80; 0.92)	0.86 (0.78; 0.91)	71	10.77	3.27	3	15	-0.56	-0.43

Ларионов П., Прис Д., Хохлова О. и др.
 Оценка алекситимии: психометрические
 свойства русскоязычной версии
 Пертского опросника алекситимии
 Клиническая и специальная психология
 2023. Том 12. № 1. С. 43–65.

Larionow P., Preece D.A., Khokhlova O. et al.
 Assessing Alexithymia:
 Psychometric Properties of the Russian Version
 of the Perth Alexithymia Questionnaire
 Clinical Psychology and Special Education
 2023, vol. 12, no. 1, pp. 43–65.

Variables	Total sample (196 females and 33 males)								
	ω (95%CI)	α (95%CI)	N	M	SD	Min	Max	Sk	Ku
PERS-S Negative-duration	0.87 (0.82; 0.92)	0.86 (0.79; 0.91)	71	9.80	3.30	3	15	-0.16	-1.20
PERS-S General positive reactivity	0.83 (0.77; 0.89)	0.83 (0.76; 0.88)	71	32.92	5.91	13	45	-0.49	0.84
PERS-S General negative reactivity	0.93 (0.90; 0.95)	0.93 (0.90; 0.95)	71	30.86	8.87	9	44	-0.48	-0.58
SVS Vitality trait	0.94 (0.92; 0.96)	0.94 (0.91; 0.96)	81	24.79	10.78	7	48	0.37	-0.83

Notes. PAQ – Perth Alexithymia Questionnaire; TAS-20 – Toronto Alexithymia Scale-20; PHQ-4 – Patient Health Questionnaire-4; PSS-10 – Perceived Stress Scale-10; PERS-S – The Perth Emotional Reactivity Scale-Short Form; SVS – Subjective Vitality Scale. Sk – Skewness; Ku – Kurtosis.

Information about the authors

Paweł Larionow, Specialist of Psychological Tests Lab, Faculty of Psychology, Kazimierz Wielki University, Bydgoszcz, Poland, ORCID: <https://orcid.org/0000-0002-4911-3984>, e-mail: pavel@ukw.edu.pl

David A. Preece, PhD in Psychology, Lecturer, Faculty of Health Sciences, School of Population Health, Curtin University, Perth, Australia; Adjunct Research Fellow, School of Psychological Science, The University of Western Australia, Perth, Australia, ORCID: <https://orcid.org/0000-0003-1060-2024>, e-mail: david.preece@curtin.edu.au

Olga Khokhlova, Lecturer, Research Associate, Department of Psychology, Middlesex University Dubai, Dubai, United Arab Emirates, ORCID: <https://orcid.org/0000-0002-7997-9949>, e-mail: o.khokhlova@mdx.ac.ae

Maria V. Iakovleva, PhD in Psychology, Associate Professor, Department of Medical Psychology and Psychophysiology, Saint-Petersburg State University, Saint-Petersburg, Russia, ORCID: <https://orcid.org/0000-0001-5035-4382>, e-mail: m.v.yakovleva@spbu.ru

Информация об авторах

Ларионов Павел, специалист лаборатории психологических тестов факультета психологии, Университет Казимира Великого, г. Быдгощ, Польша, ORCID: <https://orcid.org/0000-0002-4911-3984>, e-mail: pavel@ukw.edu.pl

Прис Дэвид, кандидат психологических наук, преподаватель факультета медицинских наук Школы здоровья населения, Университет Керттина, г. Перт, Австралия; адъюнкт-исследователь Школы психологических наук, Университет Западной Австралии, г. Перт, Австралия, ORCID: <https://orcid.org/0000-0003-1060-2024>, e-mail: david.preece@curtin.edu.au

Хохлова Ольга, преподаватель, научный сотрудник кафедры психологии, Мидлсекский университет Дубая, г. Дубай, Объединенные Арабские Эмираты, ORCID: <https://orcid.org/0000-0002-7997-9949>, e-mail: o.khokhlova@mdx.ac.ae

Яковлева Мария Викторовна, кандидат психологических наук, доцент кафедры медицинской психологии и психофизиологии, Санкт-Петербургский государственный университет, г. Санкт-

Ларионов П., Прис Д., Хохлова О. и др.
Оценка алекситимии: психометрические
свойства русскоязычной версии
Пертского опросника алекситимии
Клиническая и специальная психология
2023. Том 12. № 1. С. 43–65.

Larionov P., Preece D.A., Khokhlova O. et al.
Assessing Alexithymia:
Psychometric Properties of the Russian Version
of the Perth Alexithymia Questionnaire
Clinical Psychology and Special Education
2023, vol. 12, no. 1, pp. 43–65.

Петербург, Российская Федерация, ORCID: <https://orcid.org/0000-0001-5035-4382>, e-mail: m.v.yakovleva@spbu.ru

Получена: 09.01.2023

Received: 09.01.2023

Принята в печать: 13.03.2023

Accepted: 13.03.2023