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Russian Psychological Journal

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All manuscripts submitted to the journal undergo a double-blind peer review process involving at least two experts.

The journal adheres to international standards of publishing ethics in accordance with the recommendations of the Committee on Publication Ethics (COPE).

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The journal aims to promote international scientific collaboration and exchange of new knowledge and recent developments in areas related to psychology. It seeks to familiarize specialists and all interested readers with the latest achievements of Russian scholars in resolving issues in present-day psychology.

The ultimate objective is to create a novel forum for: (a) providing novice and experienced scholars with high quality scientific information; (b) rapid communication of new findings, ideas, or perspectives; (c) facilitating international collaboration between researchers and practitioners in the field of psychology and education; and (d) increasing citations, visibility, credibility, and authority of Russian scholarly researches through indexing in international databases.

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The scope of the journal covers all areas of experimental, applied, fundamental, and interdisciplinary psychological sciences and includes (but is not limited to): general psychology; personality psychology; history of psychology; psychophysiology; medical psychology; correctional psychology; legal psychology; social psychology; educational psychology; developmental psychology; acmeology; labor psychology.

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The journal is intended not only for researches, scholars, students, and practitioners, but also for general readers with an interest in the state-of-the-art and most recent developments in psychology.

Russian Psychological Journal welcomes submissions from established researchers, young scholars, educators, and practitioners making significant contributions to thematic fields of the journal.

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Some Applications of the Dembo-Rubinstein Self-Esteem Scale in Anthropological Research

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Abstract

Introduction. The relationship between body image perception and self-esteem is an urgent factor in the formation of the physical and psychological status of modern young people. A new approach to studying this issue is to apply the Dembo-Rubinstein Self-Esteem Scale in complex anthropological studies and to analyze the relationship between bodily characteristics and self-esteem, which makes it possible to identify the implicit component of specific self-evaluations and to understand more about the structure and age- and gender-related characteristics of self-esteem in school and university students.

Methods. The study included five consecutive samples of school and university students aged 11 to 12 and 22 to 30. The Dembo-Rubinstein Self-Esteem Scale and specific self-evaluation tests (appearance, intelligence, etc.) were used in all samples. The relationship between appearance and self-esteem was studied by analyzing the correlation between bodily characteristics and self-esteem using the Pearson correlation coefficient. **Results.** The analysis showed a direct correlation between a reduction in self-esteem and an increase in negative relationships between self-esteem and bodily characteristics, and, on the contrary, between the stabilization of self-esteem and the absence of a correlation between bodily and psychological characteristics. The patterns revealed are related not only to body image perception, but also to other specific self-evaluations. The level of self-esteem and the correlation vector for self-reported happiness in almost all age samples differ from those observed for other specific self-evaluations. **Discussion.** The level and vector of the relationship between bodily characteristics and self-esteem can be considered as indicators of psychological well-being in a particular age- or gender-related sample. The results of the study allow us to speak about the different significance of individual self-assessments and about the special nature of self-assessment of happiness.

Keywords

body image perception, self-esteem, Dembo-Rubinstein Scale, bodily characteristics, psychological well-being, associations with physical appearance characteristics, gender-related characteristics, correlation analysis, self-assessment of happiness, anthropological research

Funding

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Introduction

Over the past 15 years, the Department of Anthropology at the MSU Faculty of Biology has been conducting research into the associations between bodily characteristics, appearance characteristics, and self-esteem in school and university students (Bakholdina, Stupina, & Kovylin, 2010; Bakholdina & Stupina, 2013; Bakholdina, Blagova, & Samorodova, 2017; Bakholdina & Blagova, 2020a, 2020b). The relationship between body image perception and self-esteem plays an important role in the formation of the physical and psychological status of modern young people who are constantly exposed to a wide range of social stereotypes of “ideal” appearance (Khafizova, 2021; Khafizova & Negasheva, 2019). As many studies in this field show, the degree of self-acceptance of individual appearance, the so-called “body image”, affects many aspects of young people’s lives through self-esteem. Research shows that low self-esteem can lead to serious eating disorders such as bulimia (Al-Musharaf et al., 2022; Mallaram et al., 2023) and general social anxiety (Tsartsapakis et al., 2003), which requires the development of special strategies for the treatment of adolescents and young adults (Braun et al., 2016; Linardon et al., 2021; Meland et al., 2021). These strategies include methods for overcoming certain social stereotypes affecting adolescents’ and young people’s self-esteem. Such stereotypes include gender differences in family parenting traditions (Alikin & Lukyanchenko, 2012; Himaz & Aturupane, 2021) or a widespread belief about male intellectual superiority (Galvez et al., 2019; Starr, 2018; Storage et al., 2020).

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Approaches to studying the relationship between physical appearance and self-esteem vary considerably depending on methods and results obtained by researchers (Birndorf et al., 2005; Harter, 2006; Lacroix et al., 2023; Supervia et al., 2023). The questionnaires used for this purpose aim to identify the interdependence between real bodily characteristics and self-assessment of physical appearance (Stunkard, 2000; Tylka, & Wood-Barcalow, 2015), to determine the role of physical appearance in various situations (Cash, 2002) and the influence of self-assessment of physical appearance on certain areas of human life (Cash, Jakatdar & Williams, 2004). Researches by Russian psychologists also explore the relationship between self-assessment of physical appearance and subjective psychological well-being, and the problems of the importance of body image, analyzing the complexity, lability, and ambiguity of identified relationships (Kohn, 1980; 2009; Kochetkova, 2022; Labunskaya, 2022, 2023).

The results of psychological research can be used to evaluate the explicit component of an individual's body image – a conscious attitude towards his/her bodily characteristics. At the same time, an implicit component of body image and self-esteem in general remains poorly understood. Parallel applications of the scale of self-esteem and anthropometry enable research in this direction, followed by the use of statistical methods to determine the level and direction of the relationship between self-esteem and bodily characteristics. In this case, the associations between physical appearance and self-esteem assessed by statistical correlation analysis allow to identify implicit and clearly unconscious connections between them. In our studies (Bakholdina & Blagova, 2020a, 2020b; Bakholdina, Blagova, & Samorodova, 2017; Bakholdina & Stupina, 2013), we used the self-esteem scale developed by T. V. Dembo and supplemented by S. Ya. Rubinstein, which allowed us to quantify several specific self-evaluations and a relatively independent indicator – the feeling of being happy.

As is well known, trends in the relationship between physical and psychological characteristics are most evident in the period of growth and development (Khrisanfova, 1990; 2003). In the course of the work conducted under the supervision of the author (Bakholdina & Blagova, 2020a, 2020b; Bakholdina, Blagova, & Samorodova, 2017; Bakholdina & Stupina, 2013; Bakholdina, Stupina, & Kovylin, 2010), several samples of modern Moscow young people of different ages were studied – secondary and high school students, as well as younger and older university students at the University of Moscow. In the research conducted, the emphasis was primarily placed on the morphological and body constitution characteristics of school children and students. In addition, studies of school students have examined the relationship between physical appearance and average self-esteem, which, according to research, has less informational significance than the total number of specific self-evaluations (Molchanova, 2021). Comparative analysis of youth self-assessment data from the studied samples remains in the shadows and largely outside the scope of the reports. Meanwhile, materials collected on self-esteem in the course of research are undoubtedly of independent importance and merit an independent study. Of particular interest is the opportunity to conduct a parallel

comparison of the level and differences in self-esteem and the structure of identified associations with bodily characteristics. The data are provided in the text to avoid a large number of additional tables overloading the article.

This paper aimed to study age- and gender-related variability of self-esteem in the context of the dynamics of the structure of psychosomatic associations.

Methods

The comparison included data on Moscow school students (112 males and 109 females aged 11-12; 99 males and 95 females aged 13-15; 51 males and 50 females aged 16-17) and students of Lomonosov Moscow State University (51 males and 106 females aged 18-21 and 70 males and 64 females aged 22-30 years).

The anthropometric research program included body length, body weight, shoulder and pelvic diameters, transverse and sagittal chest diameter, circumference measurements of the chest, waist, shoulder, forearm, thigh, and shin, and fat-fold thickness on the body and limbs. Ecto-, endo-, and mesomorphy indices were also calculated using the Heath-Carter anthropometric somatotype (Heath & Carter, 1967).

The Dembo-Rubinstein Self-Esteem Scale (Rubinstein, 2007) was used in all samples. The advantage of this method is the possibility of introducing different self-evaluations of individual characteristics into the study. In the process of examining school student samples, a number of specific self-evaluations included self-evaluations of health, self-confidence, others' attitudes, appearance, intelligence, and happiness. We should note that happiness is now regarded as an independent phenomenon (Gardiner et al., 2022; Rivera et al., 2024), and its inclusion in the general self-esteem scale, as indicated below, only confirms the validity of this approach. The self-evaluation of health was used as an initial feature to guide participants in the diagnostic tool and was not considered further. In the university student samples, the range of specific self-evaluations was broader. In general comparison analyses, the results of which are presented in this paper, however, the criteria were the same as those of school student samples. According to the Dembo-Rubinstein Scale, the level of specific self-evaluations was determined in scores that were quantifiably proportional to the distance in millimeters from the lower point of a 100 mm vertical segment to the point where the marking was made by participants in the study (Rubinstein, 2007). The control of the distributions of self-evaluation scores for normality showed that the corresponding graphs approximate the normal distribution, allowing the use of parametric statistical methods, including Pearson correlation analysis and Student's T-test, in the processing of statistical data. For all samples examined, the Cronbach alpha coefficient exceeded 0.8, showing a high degree of internal consistency between the indicators.

All studies were conducted in accordance with the rules of bioethics and approved by the MSU Committee on Bioethics. The collected materials were depersonalized during the subsequent processing.

Results

Tables 1-5 show data on the scores of specific self-evaluations on the Dembo-Rubinstein Scale for school students aged 11–12, 13–15 and 16–17, as well as university students aged 18–21 and 22–30. Figures 1–5 show graphs illustrating age dynamics and gender differences in specific self-evaluations.

In all indicators, schoolboys aged 11 to 12 have lower self-esteem scores than schoolgirls of the same age (Table 1, Fig. 1).

Table 1

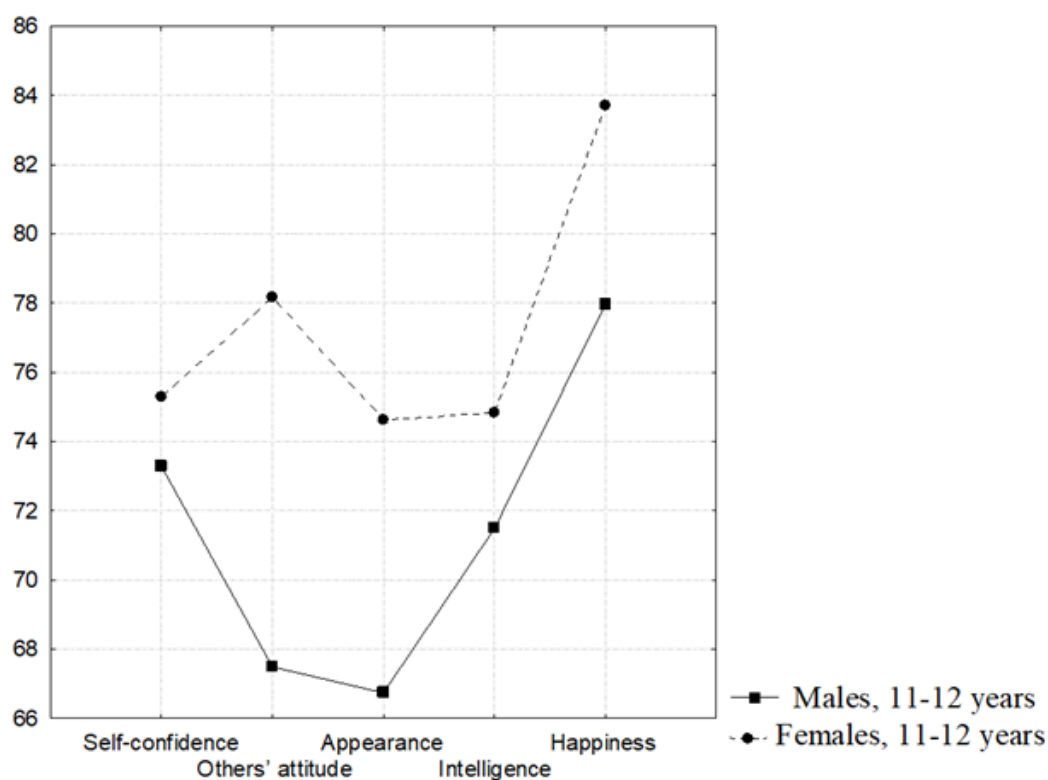
Descriptive statistics for specific self-evaluations, school students aged 11-12

Specific self-evaluations	Males, 11–12 years (M = 11.44)					Females, 11–12 years (M = 11.48)				
	N	M	Min	Max	SD	N	M	Min	Max	SD
Self-confidence	112	73.29	20.00	100.00	21.48	109	75.28	0.00	100.00	24.04
Others' attitude*	112	67.49	9.00	100.00	23.90	109	78.16	17.00	100.00	19.08
Appearance*	112	66.74	3.00	100.00	22.82	109	74.63	8.00	100.00	23.07
Intelligence	112	71.49	25.00	100.00	18.37	109	74.83	25.00	100.00	18.82
Happiness*	112	77.96	17.00	100.00	20.67	109	83.72	24.00	100.00	18.70

Notes. *N* - sample size; *M* - means; *Min* – minimum scores; *Max* – maximum scores; *SD* – mean square deviation; * – differences between the genders are statistically significant according to the Student's *t*-test at $p < 0.05$

Significant differences were observed in specific self-evaluations of appearance and attitudes of others, whose levels were significantly lower among schoolboys. There was a particularly notable difference between schoolboys and schoolgirls aged 11-12 in self-evaluations of other people's attitudes towards them. Despite differences in specific self-evaluations, however, the level of happiness for this age is the highest, both for schoolboys and especially for schoolgirls.

Figure 1
Specific self-evaluations of school students aged 11-12



The structure of correlations between physical characteristics and self-esteem at this age was neutral, i.e. it showed the absence of significant correlations, or, according to some indicators, it is positive (correlations were positive). In both male and female samples, statistically significant positive correlations of a low level (r of 0.20 to 0.30) between self-reported happiness, body circumference measurements, and degree of fat deposition (average fat thickness and endomorphy index) were found. In other words, adolescents with endomorphic characteristics of the body are psychologically more comfortable in this age group.

In the next age range, from 13 to 15, the overall proportion of the level of self-esteem of males and females remains (Table 2). The general configuration of the curves in the diagram is maintained (Fig. 2).

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Table 2

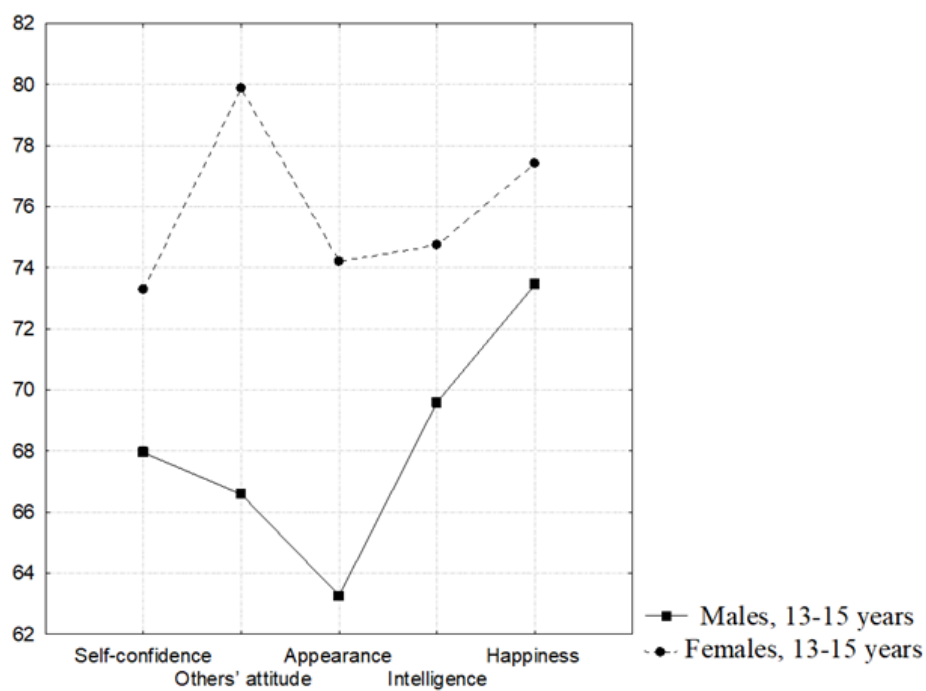
Descriptive statistics for specific self-evaluations, school students aged 13-15

Specific self-evaluations	Males, 13-15 years (M=13.67)					Females, 13-15 years (M=13.66)				
	N	M	Min	Max	SD	N	M	Min	Max	SD
Self-confidence	99	67.95	0.00	100.00	21.23	95	73.29	17.00	100.00	19.37
Others' attitude*	99	66.59	15.00	100.00	19.54	95	79.87	25.00	100.00	16.83
Appearance*	99	63.27	18.00	100.00	19.75	95	74.21	0.00	100.00	20.23
Intelligence*	99	69.60	11.00	100.00	19.97	95	74.74	33.00	100.00	14.98
Happiness	99	73.45	14.00	100.00	23.63	95	77.44	10.00	100.00	22.00

Notes. *N* - sample size; *M* - means; *Min* – minimum scores; *Max* – maximum scores; *SD* – mean square deviation; * – differences between the genders are statistically significant according to the Student's *t*-test at $p < 0.05$

Figure 2

Specific self-evaluations of school students aged 13-15



The self-esteem level at the age of 13–15 is slightly lower than in the previous age group, and schoolboys have lower self-esteem than schoolgirls. Significant gender-related differences persist in self-evaluations of appearance and other people's attitudes. In addition, differences in intelligence self-evaluations are significant, and schoolboys of this age still have lower scores compared to schoolgirls, as in the previous age stage. Adolescents of both genders also experience a decline in their feelings of happiness.

For schoolboys of this age, there are significant positive correlations between intelligence self-evaluations and happiness self-reports with endomorphy and mesomorphy indices and body circumference measurements (correlation coefficients r range from 0.20 to 0.41 for endomorphy and mesomorphy indices, at a significance level of $p < 0.05$, and from 0.21 to 0.29 for body circumference measurements, at a significance level of $p < 0.05$).

In the sample of schoolgirls aged 13–15, the relationships between morphological characteristics and self-esteem lose their neutral characteristics of previous age, and individual correlation coefficients reach the statistical significance level. Compared to the previous age range, the vector of morphological and psychological relationships changes. Body weight, chest circumference, waist circumference, and hip circumference are associated with negative reliable correlations (0.20–0.30) with self-evaluations of appearance and other people's attitudes. At the same time, the circumference measurements of shoulders and hips remain positively related to self-reported happiness.

In late adolescence, there is a significant change in the ratio of self-esteem levels between males and females (Table 3, Fig. 3).

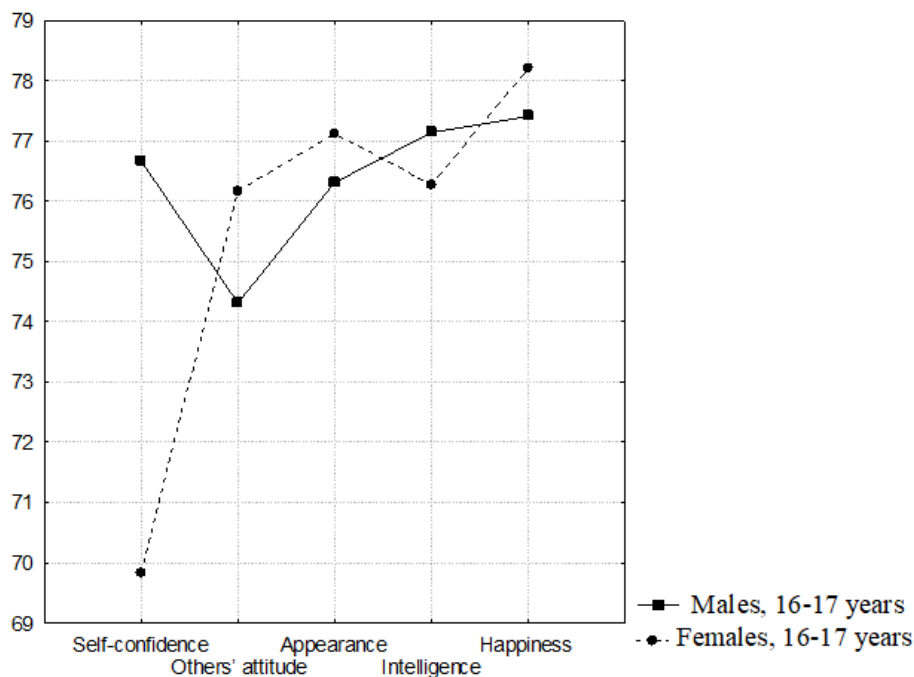
Table 3

Descriptive statistics for specific self-evaluations, school students aged 16–17

Specific self-evaluations	Males, 16–17 years (M=16.46)				Females, 16–17 years (M=16.54)				
	N	M	Min	Max	N	M	Min	Max	SD
Self-confidence	51	76,67	22,00	100,00	50	69,84	6,00	100,00	21,19
Others' attitude	51	74,31	0,00	100,00	50	76,16	32,00	100,00	17,35
Appearance	51	76,31	0,00	100,00	50	77,12	35,00	100,00	16,97
Intelligence	51	77,14	15,00	100,00	50	76,28	48,00	100,00	12,51
Happiness	51	77,41	9,00	100,00	50	78,22	7,00	100,00	20,27

Notes. *N* - sample size; *M* - means; *Min* – minimum scores; *Max* – maximum scores; *SD* – mean square deviation

Figure 3
Specific self-evaluations of school students aged 16-1



Schoolgirls aged 16 to 17 have a lower level of self-confidence compared to schoolboys, but higher levels of self-evaluations of appearance and other people's attitudes. Schoolboys have a higher level of intelligence self-evaluation compared to schoolgirls; the difference in this indicator persists even at an older age. At the same time, the feeling of happiness of both genders remains quite high.

The correlation between physical characteristics and self-esteem in schoolboys aged 16 to 17 is low, and the correlation coefficients do not reach the reliability level.

The structure and direction of the relationship between physical characteristics and self-esteem in schoolgirls aged 16-17 are different. The degree of fat deposition, the severity of endo- and mesomorphy are negatively correlated with self-confidence. The correlation coefficients are as follows: for the degree of fat deposition, $r = -0.33$; for endomorphy, $r = -0.29$; for mesomorphy, $r = -0.31$ at a significance level of $p < 0.05$. In other words, at this age, schoolgirls with developed fat and muscle components, with a tendency to corpulence, are most unconfident. The correlations between physical characteristics and self-evaluations of appearance are numerous, negative and reach high scores. The coefficients of correlations between self-evaluations of appearance and body weight, sagittal diameter of the chest, chest circumference, circumferences of waist, shoulder, forearm, thigh, shin, fat-fold thickness, mean epiphyseal width, endomorphy and mesomorphy indices are equal, respectively, -0.44 ; -0.55 ; -0.41 ; -0.41 ; -0.44 ; -0.34 ; -0.31 ; -0.40 ; -0.46 ; -0.36 ; -0.32 ; -0.29 and -0.39 at a significance level of $p < 0.05$.

The physical status of schoolgirls of this age impacts their intelligence self-evaluations. A significant negative relationship was found between intelligence self-evaluation and the endomorphy index ($r = -0.36$ at $p < 0.05$); there was a positive relationship between intelligence self-evaluation and the general index of ectomorphy ($r = 0.28$ at $p < 0.05$), i.e., gracefulness and a thin body shape. There was no significant correlation between physical characteristics and self-reported happiness in schoolgirls of this age group.

The level of self-esteem of younger students is similar for both genders (Table 4); the shape of the corresponding curves is similar (Fig. 4).

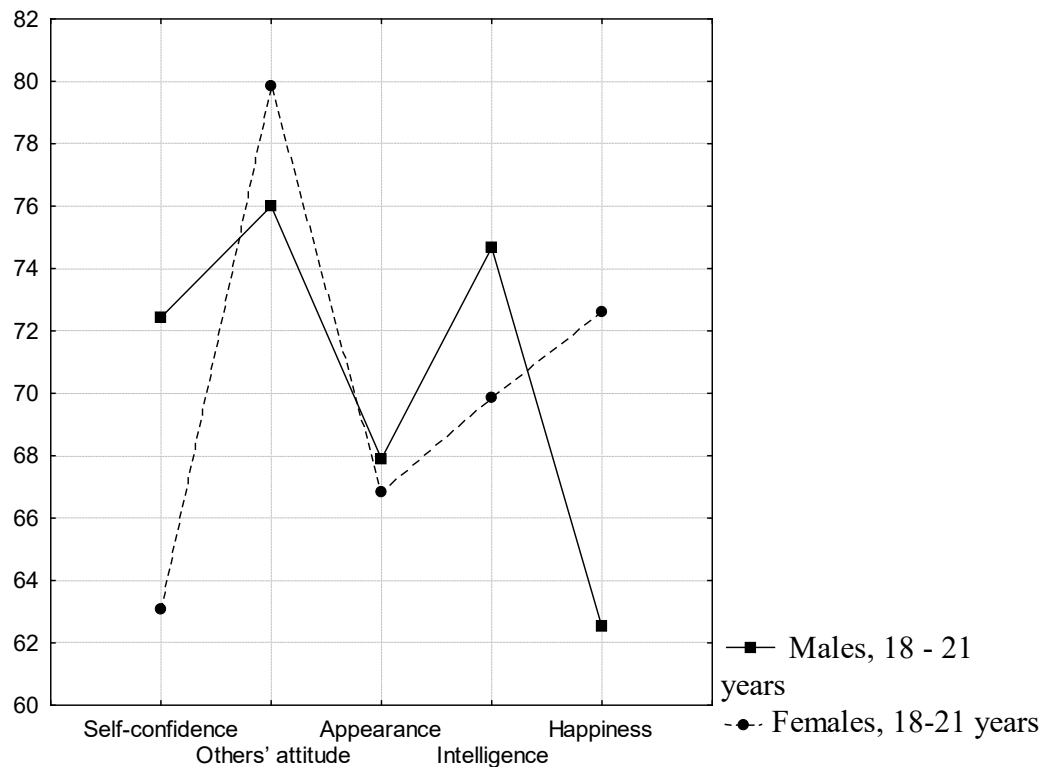
Таблица 4

Описательные статистики для частных самооценок студентов 18 – 21 года

Specific self-evaluations	Males, 18 – 21 years (M=19.75)					Females, 18-21 years (M=19.44)				
	N	M	Min	Max	SD	N	M	Min	Max	SD
Self-confidence*	51	72,43	27,00	100,00	21,66	106	63,07	5,00	100,00	21,52
Others' attitude	51	76,00	26,50	100,00	14,25	106	79,83	24,00	100,00	15,29
Appearance	51	67,90	37,00	100,00	17,81	106	66,82	4,00	100,00	18,65
Intelligence	51	74,67	22,00	100,00	18,03	106	69,88	3,00	100,00	18,21
Happiness*	51	62,51	0,00	100,00	29,81	106	72,63	2,00	100,00	21,91

Notes. *N* - sample size; *M* - means; *Min* – minimum scores; *Max* – maximum scores; *SD* – mean square deviation; * – differences between the genders are statistically significant according to the Student's *t*-test at $p < 0.05$

Figure 4
Specific self-evaluations of university students aged 18–21



Self-evaluations of self-confidence in female students of this age are significantly lower than those of male students. However, girls maintain a high level of self-evaluation of other people's attitudes towards them. Male and female students have a relatively low level of self-evaluation of their appearance, which is even lower in females than in males. Female students still have a lower level of self-evaluation of their own intelligence.

In the 18-21-year-old female sample, negative correlations between physical appearance and self-esteem persist. The correlation coefficients for self-confidence and **transverse chest diameter**, self-evaluations of other people's attitudes and **pelvic diameter** are equal to -0.23 and -0.19, respectively, at a significance level of $p < 0.05$. However, the correlation coefficient of the forearm circumference with self-reported happiness is positive ($r = 0.25$, at $p < 0.05$), and the ectomorphy index is negative ($r = -0.19$, at $p < 0.05$), which indicates a different vector of morphological and psychological correlations in the "happiness" indicator compared to other specific self-evaluations. In male students of the same age, a correlation structure is formed that reflects the importance of masculine body characteristics, including negative correlations with the level of fat deposition, as well as with the main body circumference measurements, and positive correlations with mesomorphy characteristics that reveal reliable positive correlations

with the level of happiness. The correlation coefficients between self-evaluations of other people's attitudes and the average fat-fold thickness, hip circumference, and endomorphy index in the male sample are -0.43, -0.39, and -0.49, respectively, at a significance level of $p < 0.05$. At the same time, the correlation coefficients between self-evaluations of intelligence and the width of the distal radial epiphysis and self-reported happiness with the width of the distal tibial epiphysis are positive and equal to 0.47 and 0.33, at a significance level of $p < 0.05$.

Data for older students (Table 5) and the corresponding graph (Fig. 5) are characterized by a convergence of the levels of specific self-evaluations for both genders. The differences between males and females are small and statistically not significant. The shapes of the curves in the graph are virtually identical.

Table 5

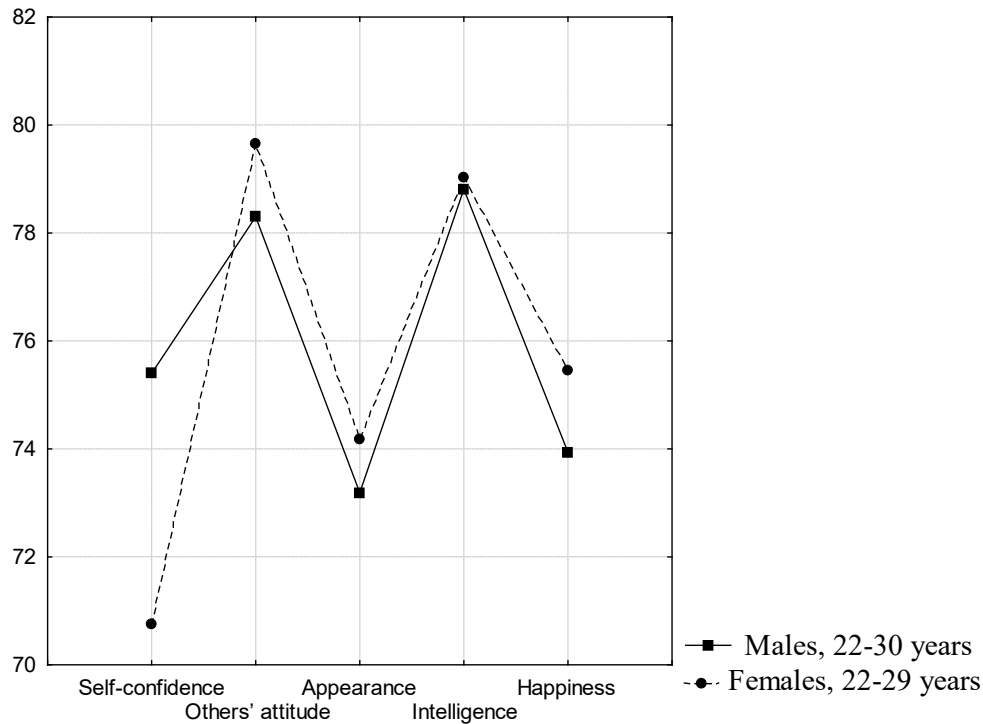
Descriptive statistics for specific self-evaluations, university students aged 22–30

Specific self-evaluations	Males, 22–30 years (M=23.68)					Females, 22–29 years (M=23.44)				
	N	M	Min	Max	SD	N	M	Min	Max	SD
Self-confidence	70	75,40	18,00	100,00	19,52	64	70,75	11,00	100,00	22,68
Others' attitude	70	78,30	0,50	100,00	20,07	64	79,66	28,00	100,00	17,26
Appearance	70	73,19	25,00	100,00	18,55	64	74,19	17,00	100,00	19,39
Intelligence	70	78,81	30,00	100,00	15,15	64	79,03	27,00	100,00	16,14
Happiness	69	73,94	0,00	100,00	23,31	63	75,46	8,00	100,00	22,44

Notes. *N* - sample size; *M* - means; *Min* – minimum scores; *Max* – maximum scores; *SD* – mean square deviation

Figure 5

Specific self-evaluations of university students aged 22–30



Females also have less self-confidence at this age. However, other indicators, including intelligence and self-reported happiness, are slightly higher than those of males. According to Tables 4 and 5, female older university students have higher intelligence scores compared to younger ones (79.03 and 69.88, respectively). In the sample of older students, self-evaluation of appearance is also higher. For younger students it scores 67.9 (males) and 66.82 (females), and for older ones – 73.19 (males) and 74.19 (females).

Morpho-psychological associations in the sample of older students also show a general stabilization in perception of their own physical characteristics and a reduction in their influence on young people's self-esteem. In males, negative correlations between self-esteem and fat accumulation indicators persist and positive relationships with masculine characteristics increase. In females, all negative correlations between physical attributes and self-esteem become positive.

Discussion

The lower self-esteem of schoolboys aged 11 to 12 compared to schoolgirls of the same age probably reflects more critical attitude of adults, especially parents, towards boys and, as many researchers have pointed out, and a more tolerant attitude towards

girls, which also forms a different level of psychological comfort for young adolescents of both genders (Alikin & Lukyanchenko, 2012; Himaz & Aturupane, 2021). An indirect confirmation of this assumption can be significant gender differences at this age in self-evaluations of other people's attitudes, which are higher among schoolgirls. At the same time, the scores for self-reported happiness for both schoolboys and schoolgirls are high. These results are in line with data on the existence of a certain period of psychological well-being, a kind of "calm" on the eve of puberty shocks. According to some researchers, "from the fourth grade there is an increase in self-confidence, which remains high in most adolescents, and there is a bright, extensive emotion that shows a good mood, a feeling of joy in existence, feelings of pride and self-confidence" (Molchanova, 2021, p. 225). According to our results, the highest levels of self-esteem are in schoolgirls aged 11-12 years in contrast to the lowest levels of self-esteem in schoolboys, which differs from the data of some authors concerning the highest levels of self-esteem in boys in young adolescence (Birndorf et al., 2005; Harter, 2006). However, these results are consistent with other data from recent extensive research (Supervía et al., 2023). Our results can also be considered as a manifestation of the general pattern of puberty when age-related changes in girls are slightly ahead of the age dynamics in boys, and this progress manifests itself, among other things, in the formation of complex forms of self-awareness (Kohn, 2009).

Data on the presence of a positive relationship between self-reported happiness and the endomorph body type identified between 11 and 12 years of age are in some contradiction with the works of other authors. Thus, male endomorphs have more problems in relationships with their peers, are often ridiculed and have fewer friends (Cohn, 1980). However, the relationships among boys can depend on the type of community they live in. Thus, contacts with peers "in the playground" can be significantly different from school, where a different value system dominates. Another possible explanation is the complex nature of such a phenomenon as the feeling of happiness, which, as our research shows (Bakholdina & Blagova, 2020a, 2020b), does not always reflect the vector and level of self-esteem. Furthermore, such a correlation vector can be associated with the influence of certain social factors, especially the financial well-being of parents.

The next age group, 13-15-years-olds, is characterized by a slight decrease in self-esteem and feelings of happiness in both gender samples, while maintaining a lower level in schoolboys. However, if positive associations of self-esteem and feelings of happiness with endomorphic and mesomorphic indicators persist in the male samples, the vector of connections becomes negative in the female samples, and the degree of development of individual physical characteristics is inversely related to self-evaluations of appearance and other people's attitudes. At the same time, some physical characteristics in the sample of 13-15-year-old schoolgirls maintain positive correlations with self-reported happiness. This may also indicate some autonomy in self-reported happiness compared to other individual self-assessments.

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There are significant changes in gender differences in self-esteem in older adolescents, reflected in a decline in self-esteem of schoolgirls aged 16-17 and an increase in self-esteem of males of this age. According to the results obtained, the high self-esteem of schoolboys is not directly related to their bodily state, and the correlation coefficients between physical characteristics and self-esteem do not reach statistical reliability. The validity of this conclusion is confirmed by data from other researchers, according to which apparently important features such as body height or length do not play an important role in the formation of self-esteem in older adolescents (Kohn, 2009).

In the sample of schoolgirls aged 16-17, the correlations between self-evaluations of appearance and intelligence with physical characteristics are negative and high in absolute terms. This shows the critical perception of schoolgirls of their own physical characteristics.

The levels of self-esteem of female and male students aged 18-21 are similar. We should note that female students maintain a lower self-evaluation of their own intelligence. Perhaps this is due to the influence of social gender stereotypes relating to the idea of intellectual superiority of men. The reason for the effectiveness of these stereotypes is that they are widely spread in society and tend to be internalized, i.e. they are perceived by girls and women themselves, which affects their self-esteem and self-confidence (Gálvez et al., 2019; Starr, 2018; Storage et al., 2020).

The formation of the structure and vectors of self-esteem of young people of this age, younger students, is affected by a number of social factors, including adaptation to university studies, unusual life in a dormitory, and a change in the normal kind of nutrition. It is not a coincidence that the feeling of happiness at this age is not very high for both genders and is significantly lower for males than for females (the differences reach the statistical significance level). The stress factors listed may also affect the structure of the correlations between self-esteem and physical characteristics, which remain negative in female students aged 18 to 21. An exception is self-reported happiness, for which positive correlations are found with some circumference measurements, indicating a different nature of this indicator.

The level of self-esteem of females and males is almost the same, but in several indicators, including self-evaluations of intelligence and self-reported happiness, females show a higher level of psychological well-being. An increase in self-evaluations of intelligence in female older students compared to younger ones can be a result of the influence of the social university environment, which helps them overcome negative social stereotypes about intellectual differences between genders. The results obtained also show that both male and female older students have higher levels of appearance self-evaluation than the younger ones, which is consistent with the data from psychologists' studies on higher levels of appearance self-evaluation in the age group of 26-36-years-olds, close to the age of the older student sample (Labunskaya, 2023).

The correlations of appearance characteristics and self-esteem in the sample of older students also show a general stabilization in the perception of their own physical characteristics and a decrease in their influence on the self-esteem of young people.

The results of the study also provide grounds for reflection on the possible "implicit" or "explicit" nature of specific self-evaluations. Therefore, self-evaluation of the attitude of others towards an individual has an important explicit component that reflects real social relationships with others. Age- and gender-related dynamics in self-evaluations of other people's attitudes, revealed in the study, can indicate their dependence on changes in the social context at different stages of ontogenesis. Self-confidence is also complex in nature, subject to significant age-related dynamics, varies between the two genders, and may also depend on biological and social factors.

Conclusion

The analysis concludes that a decline in self-esteem leads to an increase in frequency and strengthening of negative relationships between self-esteem and appearance characteristics, leading to young people's negative perception of their physical status. We should note that this process affects not only appearance self-evaluation, but also other specific self-evaluations. On the contrary, stabilizing self-esteem leads to an increase in "self-acceptance" at the physical level.

Another result of the study is that new data are collected on the heterogeneity of the structure of self-esteem and the different importance of self-reported happiness compared to other specific self-evaluations. The level of other specific self-evaluations and self-reported happiness, as well as the vector of correlations with physical characteristics, can vary significantly, which is observed in all studied age groups, except the older ones. Thus, in the sample of young adolescents, schoolboys have a fairly high level of happiness despite their low self-esteem. In schoolgirls between the ages of 13 and 15 years, statistically significant negative correlations of self-evaluations of appearance and other people's attitudes with the main circumference measurements are combined with positive correlations of circumference measurements with the happiness score. With a high degree of negative correlation in general, no reliable correlation with happiness was found in schoolgirls aged 16–17 years. In female students aged 18–21 years, the correlations of physical characteristics with specific self-evaluations and happiness are negative.

Therefore, the results of the study show that self-reported happiness is not directly related to self-esteem. It is an independent category that requires separate research.

The data obtained using the Dembo-Rubinstein Self-Esteem Scale to complex anthropological studies complement the existing ideas on the nature and structure of self-esteem and its relationship to the physical status of young people and can be used by various specialists, including psychologists, sociologists, and teachers.

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The Existential Quest Scale by Van Pachterbeke et al.: Russian Adaptation and Psychometric Properties

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Abstract

Introduction. Phenomena such as openness to the world, flexibility in changing one's existential beliefs and worldview, and the ability to ask oneself complex questions are of both epistemological and psychological interest. Van Pachterbeke et al. refer to this readiness to engage in questioning as existential quest. Their proposed construct allows for assessing an individual's readiness to change their fundamental beliefs related to existential questions and worldview. The Scale of Existential Quest is a reliable tool for research abroad but has not been used in Russian psychology. The aim of this study is to test and validate the Scale of Existential Quest on a Russian-speaking sample as a tool for determining openness to changing one's existential beliefs. **Methods.** The adaptation of the scale was carried out in several stages. At the first stage, the scale was translated, and its content validity was assessed through expert evaluation (16 experts). At the second stage, the internal reliability and convergent validity of the adapted scale were examined (177 participants). At the third stage (500 respondents), external and construct validity were evaluated. The following methods were used: NEO-FFI Questionnaire; UCLA Loneliness Scale; DASS-21 Depression Scale; The Death Attitude Profile Revised; Existential Concerns Questionnaire; Meaning in Life Questionnaire; Existential Isolation Scale. **Results.** The basic psychometric indicators of reliability and validity of the scale generally met expectations (content validity of all items was confirmed). Most of the expected correlations were highly significant, except for a significant correlation with «search for meaning in life» at the second stage, which can be explained by sample

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characteristics. The results of exploratory factor analysis at the second and third stages of the study revealed several factors in the scale, which, based on theoretical justification, is not plausible. The Appendix provides the finalized questionnaire ready for use.

Discussion. The obtained data confirmed the validity of using the concept of existential quest as a measurable psychological construct.

Keywords

Existential quest, beliefs, openness, worldview, existential questions, changes, worldview

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Introduction

Through out human history, people have engaged in spiritual quests, striving to understand the deepest questions about the nature of reality, the meaning of life, morality, justice, and other fundamental aspects of existence. Spiritual quests are often accompanied by profound introspection, questions posed to oneself and others, and the search for answers to these questions (Asmus, 1999). From a psychological perspective, this quest is connected to human motivation and psychological needs. It can be driven by curiosity, a desire for knowledge, and a need to understand the world. This drive can stem from intellectual, emotional, or ethical sources (Reischer et al., 2020). It is a unique personal journey—from questions about the nature of reality and the limits of human knowledge to the search for comfort and the fulfillment of a higher purpose, and further to the question of one's true purpose, freedom, and responsibility. The spiritual quest can be represented as stages and culturally related components of philosophical, religious, and existential search. These higher spiritual and personal aspects represent a relevant scientific interest for psychological science.

According to A. Maslow's concept of self-actualization (Maslow, 1962), philosophical quest is defined by the striving to achieve one's potential and to become aware of one's values and goals. Maslow argued that individuals experiencing the need for self-actualization may be more inclined to ask existential questions and explore profound ideas. McAdams et al. (1997) found that philosophical quest can also be driven by the need for meaning and connection with others. People with a philosophical orientation typically value deep and intellectual conversations, strive for meaningful social connections, and seek a deeper understanding of others. In any case, philosophical quest is an individual

process that involves reflection, a desire for knowledge, and is linked to the need for understanding oneself, the world, and finding meaning in life (Leontiev, 2007). In this regard, philosophical quest is often considered in the context of religion as a carrier of value systems that define the meaning of existence. This is evident in the works of J. Habermas, T. Luckmann and P. Berger, A. Giddens, A. Ellis, E. Fromm, and others (Titov, 2013).

G. Allport (Allport, 1950) problematized the influence of religiosity on personality and human behavior through the stages of religious sentiment. By introducing the concepts of extrinsic and intrinsic religiosity, he linked them to personality maturity. A «mature religious personality» is holistic, reflective, possesses a structured life philosophy integrated into their worldview, and mediates a hierarchy of values; it is not associated with prejudice or demonstrativeness in expression (Allport, 1966). Allport's psychological research allowed for the operationalization of the concepts of intrinsic and extrinsic religious orientation, the formulation of several hypotheses, and the creation of a scale to measure religious orientation (Allport & Ross, 1967).

Further work within this construct revealed contradictory data: some studies found opposing correlations between intrinsic and extrinsic religiosity (Trimble, 1997), which drew the attention of C. D. Batson (Batson, 1976). He proposed taking a step back and returning to the original formulation of the concept of a mature, spiritually oriented individual, adding the value of self-criticism, doubt, complexity, and incompleteness. According to Batson, to the existing dimensions of «religion as an end» and «religion as a means», a third dimension should be added—«religion as a quest». By introducing this new aspect of intrinsic religiosity, he implied a continuous process of seeking and doubting, related to life's contradictions, reflections on the higher meaning of society and life itself, and an eternal quest where questions are more important than answers (Batson, 1976, p. 32). The justification for this construct was provided by him and other researchers through a series of original experiments (Darley & Batson, 1973; Batson et al., 1986) and within correlational designs focused on studying existential givens (Batson & Raynor-Prince, 1983) and moral judgments (Sapp & Jones, 1986). However, the concept of «quest» as a new religious variable faced criticism regarding its construct validity (Hood, Morris & Watson, 1990) and other psychometric properties (Beck & Jessup, 2004). Subsequently, the scale was refined by the author himself, although the debate over what exactly the scale measures—agnosticism, religious conflict, or anti-traditionalist views—remained unresolved (Batson & Schoenrade, 1991).

The Scale of Religious Quest has several significant limitations. First, due to the specific nature of its original purpose, measurements can only be conducted on religious individuals. Second, as noted by Van Pachterbeke et al. (Van Pachterbeke, Keller & Saroglou, 2012), existential beliefs are often significantly broader and more universal than religious ones. In this regard, the development of a new scale that measures aspects of philosophical quest without being confined to the religious domain represents an important task.

The Scale of Existential Quest: Development and Testing in Research

The diversity of people, religions, ideologies, countries, and historical eras determines the existence of various perspectives, opinions, and beliefs regarding existential questions. These questions are associated with issues of time, life, and death; freedom, responsibility, and choice; communication, love, and loneliness; and the meaning or meaninglessness of existence (Yalom, 1999). Regardless of an individual's specific beliefs, everyone has their own understanding of the essence of these questions (Grishina, 2018).

However, beyond commonly accepted views on existential questions, there are significant differences among individuals in how categorically, intensely, and consistently they adhere to their beliefs or how open they are to revising and transforming them. Van Pachterbeke et al. (Van Pachterbeke, Keller & Saroglou, 2012) refer to this readiness for self-reflection and inner exploration as existential quest. Unlike philosophical and religious quests, which are driven by the pursuit of abstract universal answers, existential quest focuses on the concrete experience of human existence and individual responses tied to personal experiences and self-awareness. The authors define it as openness to doubt and re-evaluating one's views on existential questions.

This readiness exists independently of the specific content of beliefs and is applicable to individuals with various foundational attitudes. Thus, the authors introduced into the scientific field a construct that assesses an individual's readiness to change their core beliefs related to existential questions and their worldview.

To measure this construct, the Existential Quest Scale was developed, consisting of nine items. Unlike the religious focus of previous works (Allport, 1966; Allport & Ross, 1967; Batson, 1976; Batson & Schoenrade, 1991), the research by Van Pachterbeke et al. focuses on existential questions in general, without tying them to religiosity. This is because, in their view, adopting religious beliefs is merely one specific way of addressing existential issues (Van Pachterbeke, Keller & Saroglou, 2012, p. 3).

The construct validity of the instrument was tested by analyzing correlations with scales such as authoritarianism (Altemeyer, 1996; Funke, 2005), the need for closure (Webster & Kruglanski, 1994), intolerance of ambiguity (Batson & Schoenrade, 1991), and others. Hypotheses were formulated suggesting a negative correlation between existential quest (EQ) and these scales, given the fundamental differences between openness to existential questions (EQ) and the desire for certainty (the other scales). Additionally, one hypothesis posited that there should be a negative correlation between religiosity and EQ levels based on the research findings.

To test the construct validity, five studies were conducted. The first study, involving a sample of 323 students, aimed to validate the hypotheses regarding the absence of correlations with the aforementioned scales. The second study (N = 206) sought not only to replicate the results but also to examine the influence of age. The third study tested the validity of the EQ scale for myside bias—the tendency to see confirmation of one's own

opinions. The fourth study repeated the objectives of the first three but with a sample from a different country. The fifth study examined incremental validity in the context of religious quest and the search for meaning. The hypotheses proposed by the authors were confirmed through experiments conducted in Belgium and Germany with a total sample of 861 participants (Van Pachterbeke, Keller, & Saroglou, 2012).

M. Rizzo et al. (2019) adapted the EQ scale for Italy. In 2018, the authors conducted a study (N = 291, aged 19 to 82, M = 37.0, σ = 14.6, 64.3% were women), surveying participants using the EQ scale (van Bruggen et al., 2015), RWA (Funke, 2005), the short form of the Need for Cognitive Closure Scale (Roets & Van Hiel, 2011), and the short form of the Mental Health Continuum (Keyes, 2002; Petrillo et al., 2015). Overall, the results confirmed the validity of the original scale. The only significant difference was that the seventh item was excluded following factor analysis. The authors of the study recommend omitting this item in the final questionnaire for the Italian sample (Rizzo et al., 2019).

Thus, based on its testing on a European sample, it has been confirmed that the EQ scale is an effective tool and can be used to assess openness to changing one's existential beliefs.

Research Objective

The aim of our study was to adapt and validate the Scale of Existential Quest on a Russian-speaking sample.

Methods

The adaptation of the scale was carried out in several stages. At the first stage, the original scale was translated into Russian, and its content validity was assessed through expert evaluation. At the second stage, the internal reliability and convergent validity of the adapted scale were examined. At the third stage, external and construct validity were evaluated. The design of this study was approved by the Ethics Committee of the St. Petersburg Psychological Society (Resolution No. 10 dated October 15, 2021, and No. 20 dated March 9, 2023). All respondents provided informed consent to participate. The study design, hypotheses, and necessary documents were preregistered in the Open Science Framework system (Smirnov & Makarova, 2023a).

Sample

In the first stage of the study, 16 individuals participated, each holding a master's degree or higher in psychology and having experience in the field of existential psychology. Respondents were recruited through invitation emails. Participation was voluntary, anonymous, confidential, conducted online, and did not involve monetary compensation.

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In the second stage, 177 individuals participated (155 women, 20 men, 6 chose not to specify their gender, with an average age of 21). All respondents were students of the Faculty of Psychology at St. Petersburg State University. Participation was voluntary and confidential, conducted online. Anonymity was limited in the first phase of the study due to the need for retesting. After this phase, participants' personal data were anonymized.

In the third stage, 500 individuals participated (412 women, 74 men, 14 chose not to specify their gender, with an average age of 36). Respondents were recruited through social media announcements. Participation was anonymous and confidential. The study was conducted online.

Data Collection

Data were collected in accordance with modern recommendations for ethical and ecological considerations (Hughes, Camden, & Yangchen, 2016) and included the following demographic information: age, gender, country and city of residence, education level, income level, and religious or spiritual preferences.

To assess construct validity, seven methods were used:

1. NEO Five-Factor Inventory (NEO-FFI) (Costa & McCrae, 2008; adapted by Orel & Senin, 2008): A shortened version of the NEO PI-R questionnaire, it measures factors of neuroticism and extraversion and assesses the relationship between variables and the «Big Five» personality traits. The questionnaire consists of statements (e.g., «I enjoy being around people») rated on a Likert scale from 1 («strongly disagree») to 5 («strongly agree»).
2. UCLA Loneliness Scale, Version 3 (Russell, 1996; adapted by I. N. Ishmukhametov, 2006): This scale diagnoses subjective feelings of loneliness and social isolation based on common experiences. It includes 20 questions (e.g., «How often do you feel that people are around you but not with you?») rated on a Likert scale from 1 («never») to 4 («always»).
3. Depression Anxiety Stress Scale (DASS-21) (Lovibond & Lovibond, 1995; adapted by A. A. Zolotareva, 2020): A shortened version of the questionnaire measuring psychological distress in the modern world, it assesses depression, anxiety, and stress through self-report. Respondents rate statements (e.g., «I felt that I had nothing to look forward to») based on how often they experienced such states in the past week, from 0 («never») to 3 («almost always»).
4. Death Attitude Profile-Revised (DAP-R) (Wong, Reker, & Gesser, 1994; adapted by T. A. Gavrilova, 2011): This questionnaire measures attitudes toward death across five scales: fear of death, death avoidance, neutral acceptance, approach acceptance, and escape acceptance. Statements (e.g., «The thought of death causes me anxiety») are rated on a Likert scale from 1 («strongly disagree») to 7 («strongly agree»).

5. Existential Concerns Questionnaire (ECQ) (van Bruggen et al., 2017; adapted by Smirnov & Makarova, 2023b): This questionnaire assesses anxiety triggered by existential threats such as death, meaninglessness, and loneliness. It consists of 22 statements (e.g., «I worry that I am not living the life I could be living») rated on a Likert scale from 1 («not at all») to 7 («absolutely»).
6. Meaning in Life Questionnaire (MLQ) (Steger et al., 2006; adapted by Smirnov & Makarova, 2023c): This 10-item questionnaire evaluates the presence of and search for meaning in life (e.g., «I understand what makes my life meaningful») using a Likert scale from 1 («not at all») to 7 («absolutely»).
7. Existential Isolation Scale (Pinel et al., 2017; adapted by Smirnov & Makarova, 2023d): This scale consists of six questions (e.g., «Other people usually do not understand my experiences») rated on a sten scale with a leftward shift (values range from 0 to 9), where lower values indicate disagreement and higher values indicate agreement.

Research Hypotheses

We assume that the EQ scale will demonstrate content validity and internal reliability, positively correlate with the search for meaning factor in the life meaning questionnaire, general existential anxiety, and neuroticism, while negatively correlating with the presence of meaning in life at the present moment. We do not expect to find significant correlations with extraversion or existential isolation.

Our hypotheses are based on the description of the construct in the original article by Van Pachterbeke, Keller, and Saroglou (2012). The authors argue that openness to change (reflecting the recognition that individuals can revise their positions and views over time) does not imply that people hold no beliefs at all. They also posit that a strong orientation toward EQ is not equivalent to a tendency to avoid certainty, as the flexibility of existential attitudes stems from the human need to maintain consistency, meaning, and order. At the same time, individuals capable of questioning and revising their existential attitudes possess a certain curiosity and interest in exploring alternative ways of creating meaning.

Existential anxiety refers to the fear triggered by one of the threats to human existence—death, meaninglessness, and fundamental isolation (van Bruggen et al., 2017). Existential anxiety may encourage EQ, which does not necessarily entail existential loneliness (isolation) or extraversion. EQ can lead to a sense of connection with others, as individuals discover that they share common existential concerns. This sense of connection may counteract existential isolation.

Data Analysis

The data analysis was conducted using a Jupyter Notebook written in Python, utilizing the following packages: NumPy (Harris et al., 2020), SciPy (Virtanen et al., 2020), pandas (The pandas development team, 2023), pingouin (Vallat, 2018), reliability (Fernández, 2022), and factor_analyzer. The notebook is available under the MIT open-source license on the GitHub web service.

The analysis was carried out in several stages. First, we excluded all responses that met any of the following criteria: (a) at least one mandatory question was left unanswered, (b) the time taken to complete the survey was less than five minutes, or (c) the absolute difference between responses to repeated questions and their originals exceeded the number of such duplicates. To assess internal consistency, we calculated Pearson's correlation coefficient r for each item, Cronbach's alpha (α), and McDonald's omega (ω). For the correlation coefficients, we expected high but not excessively high values: $0.3 \leq r \leq 0.7$ (Kline, 1986; Streiner, Norman & Cairney, 2015). The following thresholds were adopted for interpreting the correlation coefficients: 0.2 (weak correlation), 0.4 (moderate correlation), and 0.7 (strong correlation) (Dancey & Reidy, 2011). For test-retest reliability, a value of 0.7 was considered sufficient (Akoglu, 2018).

Results

First Stage

Initially, the scale was translated into Russian. Three experts, including two authors of this article who possess either a certificate confirming their proficiency in English or relevant academic qualifications, independently translated the original items. After discussing the differences in their translations, the experts agreed on a single version. The Russian text was then sent to a translator who is a certified member of the Institute of Translation and Interpreting (ITI, membership number 11982). The translator performed a back-translation from Russian into English. Discrepancies between the original items and their translations were discussed by the experts and the translator, after which necessary adjustments were made to the Russian version. A total of three iterations of revisions were conducted.

The next step was to assess the content validity of the translated items. Sixteen experts in personality psychology with knowledge of existential psychology and a master's degree or higher in psychology were surveyed. The sample was not random: respondents were selected by sending email invitations to staff members of Saint Petersburg State University. Following the method proposed by B. Nevo (1985), we asked participants to rate how well each item corresponded to the measured construct on a scale from 1 to 5, where: 1 – «not related at all», 2 – «weakly related», 3 – «adequately related», 4 – «well related», and 5 – «perfectly related». The ratings were then averaged for each item. An item was considered valid if the average expert rating was equal to or exceeded 3.0 (Nevo, 1985).

The results are presented in Table 1.

Table 1

Mean Content Validity Ratings of the Existential Quest Scale by Experts (on a scale from 1 to 5)

Question Number	Mean Content Validity Ratings
1	3,9
2	3,7
3	3,7
4	3,8
5	3,3
6	2,5
7	3
8	3,2
9	3,7

Note. *Values in bold indicate low levels of content validity.*

From Table 1, it follows that all items except for the sixth one demonstrated sufficient levels of content validity. The sixth item («My opinion varies on a lot of subjects», English version – «My opinion varies on a lot of subjects») received an average score of 2.5. Indeed, such a formulation is rather vague, as it does not explicitly specify which subjects are being referred to. While respondents completing the questionnaire in the context of existential quest might correctly interpret the item, the experts' concerns were justified. Therefore, in the subsequent analysis, it was necessary to evaluate the contribution of this item to the overall scale score and, if needed, either rephrase or exclude it.

Second Stage

Out of the 177 responses received, eight were excluded based on the predefined exclusion criteria. The mean score was 43 ± 1 . Cronbach's alpha (α) was 0.81, and McDonald's omega coefficients were $\omega_t = 0.85$ and $\omega_h = 0.65$. The significant difference between the latter coefficients suggests that the scale may contain multiple factors, necessitating exploratory factor analysis (Dunn, Baguley & Brunsden, 2014; Trizano-Hermosilla et al., 2021).

For the retest, responses from 71 respondents were considered, meeting the requirements outlined in the «Procedures and Tools» section. Respondents' answers could be uniquely identified using voluntarily provided unique identifiers. On average, the interval between the test and retest was three weeks. The results indicate high test-retest reliability for the scale ($r = 0.83$, $p \ll 0.001$).

The item-total correlation coefficients for each item are presented in Table 2 (second row). Analysis of the table reveals that all items contribute as expected to the total scale score. Item 5 has an excessively high correlation with the total score, which may indicate its redundancy, necessitating further verification at the next stage. Surprisingly, Item 6, which had low content validity, demonstrated a high correlation coefficient ($r = 0.63$, $p < 0.05$). Thus, its inclusion in the scale at this stage is not redundant. The scale showed high test-retest reliability ($r = 0.83$, $p \ll 0.001$).

Given these results, it was decided to examine the factor structure. The exploratory factor analysis demonstrated sufficient reliability: Bartlett's test yielded a value of 325.41 ($p < 0.001$), and the KMO coefficient was 0.73. Since the scale authors did not provide theoretical assumptions for the factors, and due to the characteristics of the sample and distribution, the minimum residual method with varimax rotation was used to identify orthogonal factors. However, it should be noted that the results obtained using other parameters (maximum likelihood and principal component methods, oblimin rotation) did not differ significantly. The scale has three factors with eigenvalues greater than one ($p < 0.05$). The cumulative contribution of the factors is 0.44. The factor analysis revealed the following structure:

- Factor 1: Items 3, 4, 5
- Factor 2: Items 2, 9
- Factor 3: Items 1, 6, 7, 8

Due to the limited sample size at this stage, a detailed analysis will be conducted in the next phase. As expected, the Existential Quest scale positively correlates ($p < 0.05$) with the existential anxiety scale ($r = 0.29$) and neuroticism ($r = 0.30$), negatively correlates with the presence of meaning in life factor ($r = -0.29$), and shows no significant correlation ($p > 0.05$) with extraversion ($r = -0.16$) or anxiety ($r = 0.19$). However, the presence of a weak correlation ($p < 0.05$) between EQ and existential isolation ($r = 0.21$) was unexpected, as was the lack of a significant correlation ($p < 0.05$) with the search for meaning in life factor ($r = 0.17$).

Third Stage

After applying the exclusion criteria, 35 responses were removed. The mean score was 41 ± 1 . Cronbach's alpha (α) was 0.80, and McDonald's omega coefficients were $\omega_t = 0.83$ and $\omega_h = 0.63$. These results align with those obtained in the previous stage, further suggesting the presence of multiple factors in the scale.

The item-total correlation coefficients are presented in Table 2 (third row). In this case, all items fall within the required range. Item 5 still has a high item-total correlation ($r = 0.67$), but it does not exceed the maximum acceptable threshold. Item 6, whose content validity was questioned in the first stage of the study, shows a moderate correlation with the total score ($r = 0.49$), indicating that the decision to retain it in the scale was justified. Excluding this item from the sample results in a Cronbach's alpha of $\alpha = 0.79$.

Table 2

Correlations Between Items of the Existential Quest Scale and the Total Scale Score

Nº	1	2	3	4	5	6	7	8	9
2	0,53	0,64	0,63	0,55	0,71	0,63	0,44	0,35	0,62
3	0,54	0,64	0,51	0,57	0,67	0,49	0,33	0,53	0,65

Note. The first row (Nº) indicates the item number of the scale. The second row (2) shows the results from the second stage of the study, and the third row (3) presents the results from the third stage. Values in bold indicate strong correlations.

The exploratory factor analysis (Bartlett's test = 720.94, $p = 0.001$, KMO = 0.77), as in the previous stage, revealed the presence of three factors ($p = 0.001$). However, their cumulative contribution was lower (0.37), and the factor structure differed:

- Factor 1: Items 3, 4, 5, 6, 8
- Factor 2: Items 2, 9
- Factor 3: Items 1, 7

A comparison of the factor structure at this stage with the results from the second stage shows that Factor 2 remained unchanged, while Items 6 and 8 shifted from Factor 3 to Factor 1. This may indicate similarities between these items.

The correlation matrix is presented in Table 3. As in the previous stage, the Existential Quest scale positively correlates ($p < 0.05$) with the existential anxiety scale ($r = 0.31$) and

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negatively correlates with the presence of meaning in life factor ($r = -0.26$). No significant correlation ($p > 0.05$) was found with the overall meaning in life ($r = 0.04$). However, as expected, this study found no significant correlation ($p > 0.05$) with existential isolation ($r = -0.01$) and a positive correlation ($p < 0.05$) with the search for meaning in life factor ($r = 0.37$). It is worth noting that the greatest contribution to the correlation with existential anxiety comes from the general existential anxiety factor in the ECQ ($r = 0.36$), while the remaining two factors, avoidance and fear of death, have a weaker impact.

Table 3

Correlation Matrix Between the Existential Quest Scale and Other Scales at the Third Stage

	EQ	MLQ	MLQ P	MLQ S	EIS	ECQ	ECQ GA
EQ		0,04	-0,26*	0,32*	-0,01	0,31*	0,36*
MLQ	0,04		0,74***	0,73***	-0,21*	-0,14	-0,06
MLQ P	-0,26*	0,74***		0,08	-0,21*	-0,46**	-0,45**
MLQ S	0,32*	0,73***	0,08		-0,10	0,26*	0,36*
EIS	-0,01	-0,21*	-0,21*	-0,10		0,15	0,14
ECQ	0,31*	-0,14	-0,46**	0,26*	0,15		0,94***
ECQ GA	0,36*	-0,06	-0,45**	0,36*	0,14	0,94***	

Note. * $p \leq 0,05$; ** $p < 0,01$; *** $p < 0,001$. EQ – Existential Quest, MLQ – Meaning in Life Questionnaire, MLQ P – MLQ Presence, MLQ S – MLQ Search, EIS – Existential Isolation Scale, ECQ – Existential Concerns Questionnaire, ECQ GA – ECQ General Anxiety

Discussion

The results of the adaptation of the Existential Quest scale appear somewhat contradictory. On the one hand, the basic psychometric indicators of reliability and validity generally meet expectations. The contribution of the sixth item, whose content validity was questioned in the first stage of the study, to the total scale score is normal and moderate in value. Most of the expected correlations were obtained with high significance. The absence of a significant correlation with the search for meaning in life at the second stage may be explained by the characteristics of the sample: participants were students with an average age of 21. For such a sample, it is not particularly common to grapple with existential questions (Grishina, 2018). Additionally, the sample at the second and third stages of the study is characterized by a significant gender imbalance, with women making up more than 80% of the participants, although no statistically significant differences in correlations were found between male and female subgroups.

On the other hand, exploratory factor analysis at the second and third stages of the study revealed the presence of multiple factors within the scale. This may be due to the fact that the scale contains conceptually distinct constructs. This is indirectly supported by the values of McDonald's omega coefficients.

From Table 3, it follows that the first and seventh items contribute the most to the third factor: «Today, I still wonder about the meaning of life» and «I know my purpose in life very well». Both items are related to the meaning of life and essentially duplicate similar items from the Meaning in Life Questionnaire. Thus, the third factor could be labeled "awareness of one's own meaning in life." However, if these items are separated into a distinct factor and its correlation with the MLQ is assessed, it would not be high ($r = -0.20$ and $r = 0.39$ for the MLQ and the search for meaning in life factor, respectively).

Table 4

Contribution of Each Item to Factors F1–F3 for the Existential Quest Scale

Nº	Question	F1	F2	F3
1	Today, I still wonder about the meaning and goal of my life	0,15	0,23	0,45
2	My attitude toward religion/spirituality is likely to change according to my life experiences	0,15	0,76	0,10
3	Being able to doubt about one's convictions and to reap- praise them is a good quality	0,76	0,03	0,01

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Nº	Question	F1	F2	F3
4	In my opinion, doubt is important in existential questions	0,54	0,20	0,18
5	My way of seeing the world is certainly going to change again	0,51	0,42	0,06
6	My opinion varies on a lot of subjects	0,31	0,16	0,24
7	I know perfectly well what the goal of my life is	–0,02	–0,00	0,39
8	Years go by but my way of seeing the world doesn't change	0,42	0,31	–0,10
9	I often reappraise my opinion on religious/spiritual beliefs	0,22	0,60	0,21

Note. All values exceeding the threshold (0.3) are highlighted in bold.

The second factor consists of items 2, 9, and possibly 5 and 8. The first group of items explicitly relates to the theme of religion and spirituality, so if limited to these, the second factor could be labeled «attitude toward spirituality». Items 5 and 8 share a common theme of change (or lack thereof) in one's worldview. Moreover, items 3 and 6 are similar in theme, as they also relate to beliefs about general questions and the world as a whole. However, attitudes toward the world, change, and spirituality are still distinct constructs.

Thus, dividing the scale into separate factors is possible, but they would contain only a few items each. Furthermore, the wording of the items focuses not on specific constructs but on their search and (presumed) changes in personality, which constitutes the foundation of existential quest. This construct has multiple facets, including attitudes toward religion or spirituality, meaning in life, and openness to change. Therefore, we believe that a single-factor structure of the Existential Quest scale is more plausible than a multidimensional one, based on the following results and arguments:

(1) the differences between the total and hierarchical McDonald's omega values are present but not sufficiently high to clearly indicate the existence of a factor other than the primary one;

(2) there is no clearly defined factor structure across different samples—items «shift» from one factor to another between the second and third stages of the study;

(3) content and critical analyses suggest that a more plausible explanation for the statistically significant grouping of items is the existence of common contexts, such as spirituality and meaning in life, which are directly related to existential quest.

For the same reason, we do not consider it necessary to exclude the seventh item from the questionnaire, as was done in the Italian sample (Rizzo et al., 2019). The statistical indicators fall within the specified limits. A substantive analysis of this item indicates its connection to the construct of meaning in life, which, in turn, is related to existential quest. Therefore (and based on the results of the first stage), this item possesses content validity.

The development and validation of the Existential Quest scale confirm the concept of existential quest as a measurable psychological construct (Van Pachterbeke, Keller & Saroglou, 2012). The use of this scale in further research will provide insights into factors influencing existential quest, such as age, gender, life events, beliefs, and personality traits (e.g., as in the study by Saroglou et al., 2020). The scale can be used to explore the role of existential quest in overall psychological well-being, mental health, and the quality of life of modern individuals. From a practical perspective, the application of the Existential Quest scale will enable safe psychodiagnostics, the results of which can complement the work of an existentially oriented approach in setting therapeutic goals, tracking the dynamics of the counseling process, and increasing client awareness (e.g., as in the study by Arrowood, Vail & Cox, 2021).

Individuals open to existential quest actively seek meaning in their lives while losing a sense of meaning in the present. They exhibit higher levels of anxiety, including existential anxiety, and are slightly more prone to depression and stress. However, no differences were found in the social context (through extraversion or isolation). It is possible that to construct a three-dimensional scale aligned with the original theoretical framework, a new existential quest questionnaire should be developed for Russian-speaking samples or the original one expanded, which may equate to creating a new instrument.

Conclusion

The conducted study demonstrates that the adapted Existential Quest (EQ) scale is internally reliable and possesses content and construct validity. Most of the expected correlations were obtained with high significance. Specifically, construct validity is supported by the scale's positive correlation with the existential anxiety scale, with the general existential anxiety factor contributing the most, while the remaining two factors—avoidance and fear of death—have a weaker impact. The scale does not correlate with the

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overall meaning in life, negatively correlates with the presence of meaning in life at the present moment, and positively correlates with the search for meaning in life. Additionally, there is no correlation with existential isolation. At the third stage, the sample was more representative (though not entirely random), increasing the likelihood that the study's results can be generalized to the broader population, thereby ensuring the external validity of the research.

For the Russian-speaking sample, all items are significant, unlike the Italian sample, for which the seventh item was excluded. The scale measures various facets of existential quest, including attitudes toward meaning in life, spirituality, and changes in worldview (the full text of the scale is provided in the Appendix). For this reason, it is formally possible to isolate separate factors; however, statistical and critical analyses indicate that this is not advisable.

The findings suggest that the EQ scale is a robust tool for assessing existential quest in Russian-speaking populations. Its application can contribute to a deeper understanding of the role of existential exploration in psychological well-being, mental health, and quality of life. Future research could further refine the scale and explore its utility in diverse cultural and clinical contexts.

Data

The study design and hypotheses (excluding the expert evaluation part) were preregistered on the Open Science Framework website. All referenced documents, as well as raw data, are available at the following link: <https://osf.io/bjafd>

Limitations

The present study has the following limitations:

1. The sample at the first stage is not random.
2. The sample at the second stage is not representative: participants were exclusively students from the Faculty of Psychology at Saint Petersburg State University.
3. The sample at the third stage is not fully random: respondents were recruited through social media by posting announcements, but the groups for posting were subjectively selected by the authors of this article using catalogs and other sources.

These limitations should be taken into account when interpreting the results and generalizing the findings to broader populations. Future research could address these limitations by employing more diverse and randomly selected samples.

Appendix

Шкала экзистенциального поиска

1. Сегодня я всё ещё задаюсь вопросом о смысле жизни.
2. Моё отношение к религии/духовности, скорее всего, изменится в соответствии с моим жизненным опытом.
3. Способность сомневаться в убеждениях и пересматривать их – это хорошее качество.
4. Мне кажется, что сомнение является важным в экзистенциальных вопросах.
5. Мой взгляд на мир обязательно изменится снова.
6. Моё мнение различается по многим вопросам.
7. Я очень хорошо знаю свою цель в жизни.
8. Годы идут, но мой взгляд на мир не меняется.
9. Я часто пересматриваю свои религиозные/духовные убеждения.

Респондент указывает степень своего согласия или несогласия с утверждениями при помощи шкалы от 1 до 7 баллов: 1 – «абсолютно нет»; 2 – «в основном нет»; 3 – «скорее, нет»; 4 – «ни да, ни нет»; 5 – «скорее, да»; 6 – «в основном да»; 7 – «абсолютно да».

Шкала содержит 2 обратных вопроса: № 7 и № 8.

Средние значения выраженности экзистенциального поиска по результатам адаптации шкалы на русскоязычной выборке: от 9 до 40 баллов – низкий уровень выраженности экзистенциального поиска; от 40 до 42 балла – средний уровень выраженности экзистенциального поиска; 42–63 балла – высокий уровень выраженности экзистенциального поиска.

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Conflict of Interest Statement

The authors declare no conflict of interest.

Mental Self-Regulation and Personality Changes of Students

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Abstract

Introduction. The article presents data on the understanding of metacognitive awareness in the management of change necessary for self-development of young people in the period of intensive change in society. The aim of the study was to identify indicators of different spheres of mental self-regulation and personal changes of students. **Methods.** The participants of the study (130 students aged 17–20 years: 53 boys and 77 girls) were examined using the following methods: «Metacognitive awareness» (E.I. Perikova, V.M. Byzova), «Emotional intelligence» (D.V. Lyusin), «Self-regulation styles» (V.I. Morosanova), «Self-change styles» (T.Y. Bazarov, M.P. Sycheva), «Self-change potential» (V.R. Manukyan, I.R. Murtazina, N.V. Grishina). **Results.** The main role of metacognitive awareness is to promote dynamic interdependence between the phases of metacognitive knowledge, which is reflected in the structure of girls' mental regulation. Girls are distinguished by the expression of the regulatory process modeling in comparison with boys. Significant differences in styles of reaction to changes in boys and girls were revealed. Girls are distinguished by the expression of the conservative style (the attitude to approve of change), and boys are distinguished by the expression of the innovative style (the attitude to perceive changes). According to the data of content analysis, the student groups evaluated changes differently. Positive evaluation of changes corresponded to high indicators of potential and ability for self change, and negative evaluation corresponded to high indicators of the possibility of self-change. The correlation structure of the system of mental self-regulation and peculiarities of self-change of young men is formed by metacognition, components of emotional intelligence and styles of response to change, while the similar structure of girls is distinguished by interrelations of metacognitive

regulation, modeling process and styles of response to change. **Discussion.** Our study analyzed the specificity of mental self-regulation and self-change in study groups of different training directions. It was revealed that students who are included in different study groups discover different resources for accepting changes. The shown structural interrelations of components of mental self-regulation and peculiarities of response to changes in young men and girls reflect the peculiarities of the ability to metacognitively regulate current changes. The role of metacognitive awareness in different evaluations of experience of forthcoming changes is found out.

Keywords

personality self-change, metacognitive awareness, emotional intelligence, styles of response to change, mental self-regulation

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Introduction

The conditions of modern social reality are labeled as changeable. Summarizing the known concepts of social change, P. Sztompka concludes that it is necessary to systematize the existing approaches to understanding change as a necessary attribute of progress, growth and development (Sztompka, 1996).

A number of methodological difficulties are encountered when studying changes. G.M. Andreeva argues that the research of social changes is limited to the study of human perception of these changes (Andreeva & Leontiev, 2018), their perception by a member of the group when he/she builds an image of the social world (Andreeva, 2005). The practical significance of changing research as the study of life problems and human situation, which is always social and changing, is also emphasized (Andreeva & Leontiev, 2018).

G.M. Andreeva distinguishes three levels of change: radical transformations of the type of social relations; changes in specific areas of social activity; changes affecting the life activities of small groups or individuals. According to the author, the third level of social change falls into the field of study of both social and general psychology. Changes involve a person in an internal dialog or internal struggle in order to master the changes and preserve personal self-esteem (Andreeva & Leontiev, 2018).

Changes also fall within the field of view of social psychology of health. I. N. Gurvich notes that the impact of social changes on population health is considered as an

integral damaging factor. The understanding of changes is reduced to the results of the functioning of social systems. They are the source of greater problems than the activity of psychological systems proper. And the development of personality provides readiness to overcome life changes. The author describes the concept of «conservative impulse» as the loss of «habitual patterns of social relations, which makes one avoid changes» (Gurvich, 1999).

The importance of studying the perception of changes is confirmed by numerous empirical studies. I.S. Burikova et al. assert the global nature of manifestation of changes in the human need and motivational spheres (Burikova, Pushkina & Yurieva, 2009). T.A. Polyakova emphasizes the connection between economic, technological and social changes and qualitative changes in the person himself (Polyakova, 2009). Personality changes are understood in the context of life creation (Leontiev & Miyuzova, 2016), in the comparison of their perception by men and women (Shemanova, 2008).

The phenomenon of self-change is actively investigated (Grishina, 2018; Manukyan & Murtazina, 2020), tools for changing the features of change are constructed (Manukyan, Murtazina & Grishina, 2020; Bazarov & Sycheva, 2012). With the help of new tools, empirical studies have been conducted (Zaleskaya & Grishina, 2020, Bazarov et al., 2012) and it is concluded that personal changes occur due to the active role of personality (Manukyan, Murtazina & Grishina, 2020).

The problem of changes interests foreign researchers as well. Studies are conducted in the context of life changes (Bleidorn, 2012), from the point of view of self-regulation in ongoing changes (Denissen et al., 2013), perception of life events (De Vrie, Spengler, Frintrup & Mussel, 2021), changeability-stability of personality in the process of change (Johnson, 1997).

It is possible to consciously manage change for the purpose of growth and development. We have conducted some research on the links between the characteristics of change and the system of mental self-regulation (Byzova, Perikova & Lovyagina, 2019). However, the role of metacognitive inclusion in change management as an effective strategy for managing new everyday experiences remains not fully clarified.

The concept of metacognitive monitoring was proposed by J. Flavell as «a new territory» for cognitive research (Flavell, 1979). The author emphasizes the problematics of metacognitive monitoring of intellectual activity, includes four classes of phenomena in the model: metacognitive knowledge, goals (tasks), actions (strategies), and metacognitive experience.

Metacognitive knowledge is defined as the portion of stored knowledge about the world that includes a variety of cognitive tasks, goals, actions, and experiences. Goals relate to a cognitive task. Actions (or strategies) relate to cognitions or other behaviors that are applicable to achieve them. Metacognitive experiences (experiences) include any conscious cognitive or affective experiences that relate to intellectual activities (Flavell, 1976).

J. Flavell explains the content of metacognitive experiences: a person believes (feels) that he or she has learned instructions; inadequately expresses feelings to a friend;

suddenly finds himself or herself stumped while trying to understand what he or she has read; takes a long time to solve what seems at first to be an easy task, etc. The author notes the importance of studying the differences in the content of the experience of human cognitive problem solving and the quality of metacognitive monitoring (Flavell, 1979). The works reveal the practical significance of the outlined concept (Flavell & Flavell, 2004; Flavell, 1985).

Purpose and hypotheses of the study

The purpose of our study was to investigate the assessment of change experience, characteristics of conscious self-regulation, metacognitive awareness and students' self-change.

The subject of the study was the system of mental self-regulation (metacognitive awareness, conscious self-regulation, emotional intelligence) and characteristics of personality self-change. The object of the study is student youth included in different educational groups.

The main hypothesis of the study was the assumption that there are significant differences in the characteristics of the system of mental self-regulation and self-change in students included in different study groups. Particular hypotheses were also formulated:

- there are significant differences in the components of the system of mental self-regulation in young men and young women;
- components of the system of mental self-regulation and self-change in personality form dense significant interrelationships.

Methods

Theoretical and methodological bases of the study were: the theory of metacognitive monitoring by J. Flavell (1979), the concept of social change by G.M. Andreeva (2005); the attitudinal approach to identifying the socio-psychological characteristics of participants in the process of change (Bazarov & Sycheva, 2012).

Participants and research design

The total sample included 130 students, including 53 males and 77 females between 17 and 20 years old (mean age – 19.1 years, SD = 0.7). During two years (2022–2023), data collection was conducted among second-year students of humanitarian and natural science majors (departments of psychology, biology, tourism, physical education and sports) of St. Petersburg and Vyatka State Universities. The samples were formed into 6 study groups (Table 1)

Table 1

Description of the composition of the groups included in the sample

Learning profile	Age		Sex (%)		Выборка (%)
	<i>M</i>	<i>SD</i>	Young men	Girls	
1. «Bachelors – psychologists»	19,3	1,5	14	18,2	16,5
2. «Bachelors – biologists»	19,4	0,7	42	0	16,5
3. «Bachelors – athletes»	18,1	0,5	6	18,2	13,1
4. «Bachelors – tourism»	19,3	0,8	14	18,2	16,5
5. «Specialists – psychology SPB»	18,9	0,5	20	26	23,6
6. «Specialists – psychology Kirov»	20,0	0,0	4	19,5	13,4
Total	19,1	0,7	100	100	100

Note. *M* – mean value; *SD* – standard deviation.

Table 1 presents the gender and age characteristics, as well as the percentage of groups in the sample. According to the results of comparative analysis (Student's criterion, $p \leq 0.05$), no significant differences were found between boys (mean age = 19.1 years, standard deviation = 0.5) and girls (mean age = 19.08, standard deviation = 0.08) by age.

The research procedure involved writing an essay («What changes have happened to you recently?») and completing paper questionnaires in a classroom setting. Participation in the study was voluntary and there was no reward.

Methods

To identify the characteristics of the system of mental regulation and self-change, we used a set of methods:

- «Metacognitive awareness» questionnaire by G. Schraw and R. Dennison (Schraw & Dennison, 1994) in the adaptation of A.V. Karpov, I.M. Skityaeva (2005) and subsequent modification by E.I. Perikova, V.M. Byzova (2022), aimed at assessing indicators of metacognitive involvement in activity (Perikova & Byzova, 2022);
- «Style of self-regulation of behavior» questionnaire aimed at assessing the expression of regulatory processes and regulatory-personal properties (Morosanova, 2022);

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- «Emotional Intelligence» questionnaire by D.V. Lucin, aimed at measuring the ability of an individual to understand and manage his/her own emotions and emotions of other people (Lucin, 2009);
- «Style of reacting to changes» questionnaire designed to assess the expression of conservative, innovative, reactive and realizing styles (Bazarov, Sycheva, 2012);
- «Self-Change Potential» questionnaire, aimed at measuring the potential for self-change of its components: the need for self-change, the possibility of self-change, the ability for conscious self-change, the belief in the possibility of self-change (Manukyan, Murtazina & Grishina, 2020).

Mathematical and statistical analysis of the obtained data was carried out using the program SPSS Statistics, 24.0. We applied descriptive statistics, conjugation tables, comparative analysis (Student's criterion, univariate and multivariate ANOVA) and correlation analysis.

Results

At the first stage of the study, the average values of the indicators of the system of mental regulation (metacognitive awareness, conscious self-regulation, emotional intelligence) and self-change of students were considered. The data were analyzed both for the sample as a whole and for young men and girls separately (Table 2).

Table 2

Average values of indicators of the system of mental self-regulation

Indicators	For the group as a whole		Young men		Girls	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Metacognitive awareness	123,9	17,8	129,0	16,9	121,8	17,9
Metacognitive knowledge	44,93	6,3	45,88	6,9	44,56	6,06
Metacognitive regulation	78,9	13,7	83,18	11,7	77,33	14,3
Declarative knowledge	18,9	3,0	19,41	2,9	18,8	3,05
Procedural knowledge	10,8	1,9	11	2,2	10,7	1,9
Conditional knowledge	15,2	2,3	15,7	2,3	15,02	2,1
Planning	16,4	1,9	16,12	2,1	16,56	1,9
Information management strategy	7,9	1,3	6,18	0,8	7,8	1,4

Indicators	For the group as a whole		Young men		Girls	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Component control	23,9	3,6	24,4	4,01	23,7	3,4
Error correction structure	15,8	2,0	16,29	4,01	23,7	3,4
Evaluation	15,3	3,08	15,65	2,5	15,16	3,2
Conscious self-regulation	30,8	5,5	30,3	5,9	31,2	5,1
Regulatory process planning	6,0	1,8	6,05	1,9	6,07	1,7
Regulatory process modeling	6,1	1,8	5,7	1,7	6,5	1,9
Regulatory process programming	6,3	1,5	6,3	1,5	6,2	1,5
Regulatory process outcome evaluation	6,2	1,5	6,0	1,4	6,4	1,6
Flexibility	5,7	1,8	5,6	1,6	5,8	2,0
Independence	5,5	1,9	5,5	2,0	5,4	1,8
Emotional intelligence						
Interpersonal	47,1	9,9	49,4	12,0	44,8	7,0
Intrapersonal	44,8	11,2	50,4	11,5	39,7	7,8
Understanding emotion	45,3	10,9	49,54	12,6	41,5	7,5
Managing emotion	45,2	10,2	48,9	11,3	41,5	7,3

Note. *M* – mean value; *SD* – standard deviation

According to the data presented in Table 2, a comparative analysis (T-criterion, $p \leq 0.05$) was conducted for young men and girls. Significant differences were revealed for the indicators of conscious self-regulation. The indicators of the regulatory process «Modeling» in girls ($M = 6.55$; $SD = 1.9$) were significantly higher ($p = 0.045$) compared to young men ($M = 5.7$; $SD = 1.7$).

Significant differences in the indicators of emotional intelligence were also revealed. The interpersonal intelligence scores in young men ($M = 49.4$; $SD = 12$) are higher ($p = 0.044$) than girls ($M = 44.8$; $SD = 7$); in terms of intrapersonal intelligence scores, young men ($M = 50.4$; $SD = 11.5$) are different ($p = 0.000$) from girls ($M = 39.7$; $SD = 7.8$); on measures of emotion understanding ($p = 0.001$), young men ($M = 49.5$; $SD = 12.6$) are

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significantly different from girls ($M = 41.5$; $SD = 7.5$); as well as on measures of emotion management: Young boys ($M = 48.9$; $SD = 11.3$) are significantly higher ($p = 0.001$) different from girls ($M = 41.6$; $SD = 7.3$).

No significant differences were found for metacognitive awareness between young men and girls (t -test, $p > 0.05$).

The obtained averages were analyzed (Table 3). The results presented in Table 3 reflect that the averages for all indicators of meta-inclusion in activities are significantly lower than the averages presented by E. I. Perikova and V. M. Byzova (Perikova, Byzova, 2022).

Table 3

Results of comparative analysis of mean values of metacognitive awareness (Samples 2022 and 2023).

	Study 2023 (N=130)		Study 2022 (N=268)		T-criterion p-value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Metacognitive awareness	123,9	17,8	194.7	34,15	0,000
Metacognitive knowledge	44,9	6,3	94.7	16,7	0,000
Metacognitive regulation	78,98	13,7	100.1	18,15	0,000
Declarative knowledge	18,97	3,0	29.6	5,6	0,000
Procedural knowledge	10,82	1,9	14.35	3,0	0,000
Conditional knowledge	15,22	2,3	18.5	3,7	0,000
Planning	16,43	1,9	26.3	5,3	0,000
Information management strategy	7,9	1,3	37.3	6,8	0,000
Component control	23,9	3,621	26.9	5,2	0,000
Error correction structure	15,8	2,076	20.05	3,7	0,000
Evaluation	15,30	3,082	21.5	4,5	0,000

Note. *M* – mean value; *SD* – standard deviation

A comparative analysis of the indicators of metacognitive awareness and its components for young men and girls was also carried out. It was revealed that all indicators of the sample are reliably significantly lower than those published earlier. The exception is the component control scores for males, which are virtually unchanged from those reported in 2022.

The results of the data analysis of the self-change characteristics are presented in Table 4.

Table 4

Mean values for self-change indicators for young men and young women

Self-change indicators	For group		Young men		Girls	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Reactive style of reacting to change	18,02	4,5	16,4	5,1	22,3	5,3
Conservative style of responding to change	21,3	5,0	18,65	3,0	22,3	5,3
Innovative style of responding to change	17,9	5,1	20,3	3,4	16,9	5,3
Realizing style of responding to change	19,4	4,1	16,4	5,1	18,6	4,2
Self-change potential	48,7	10,1	46,7	11,1	49,8	9,5
Need for self-change	22,7	3,3	22,7	3,7	22,6	3,3
Ability for self-change	23,5	3,5	22,8	3,7	23,8	3,4
Belief in self-change	20,0	4,3	18,7	4,9	20,8	3,8
Possibility of self-change	17,5	4,0	16,8	4,2	17,8	4,0

Note. *M* – mean value; *SD* – standard deviation.

According to the results (Table 4) of the comparative analysis, significant differences in the characteristics of self-changes of young men and girls were revealed (t-criterion, $p \leq 0.05$). The indicators of conservative style of responding to change of young men ($M = 18.6$; $SD = 3.0$) were significantly lower (Tukey, $p = 0.002$) compared to those of girls ($M = 22.3$; $SD = 5.3$). Whereas the scores in innovative styles of responding to change of young men ($M = 20.3$; $SD = 3.4$) are higher (Tukey, $p = 0.018$) compared to girls ($M = 16.9$; $SD = 5.3$).

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On measures of self-change potential, significantly significant differences for males and females were found on measures of belief in self-change (Tukey, $p = 0.009$). Girls had more belief in self change ($M = 20.8$; $SD = 3.8$) compared to young men ($M = 18.7$; $SD = 4.9$).

In the second stage of the study, a content analysis of the essay texts was conducted. According to the results, the categories that reflect the options for evaluating the experience of change were highlighted: «Change affects me negatively» (24.0%); «Change is negative, but the result is positive» (32.0%) and «Change is positive for me» (48.0%). The content of the identified categories is presented in Table 5 and Table 6.

Table 5

Results of content analysis of the texts of essays on «Changes recently» in the sample of young men.

Category	Content
«Change is having a negative impact on me». (24,0%)	«Every day something changes, and this new thing leaves an imprint on the personality: surrounding people are lost, and with them the circle of interests, character traits, characteristics of the nervous system. I try to grab hold of any person to change the feeling of loneliness. But every time there is a feeling that I am not understood»; «Very hard changes. A lot has been piled on my shoulders, study, work, lab. Very strong decline of strength, lost the desire to do something, drowsiness, desire to drink»; «As a result of the changes, the feeling of certainty, confidence in the future disappeared. Became less inquisitive, put everything off for later».
«The changes are negative, but their result is positive». (32,0%)	«My relationship has moved to the status of civil marriage. It has changed my life a lot. It was difficult in the beginning, but now I have started to really enjoy the change» «The first year changed me I was afraid, doubted my abilities. University gave me the opportunity to meet new people, I got a better understanding of the world through science»; «Compared to school, the rhythm of my life changed. This new frightened me. And in the end I felt more confident in my abilities».

Category	Content
«The changes are positive for me». (44,0%)	«I started to learn more new and interesting things, I became easier to relate to everything. I have become stronger; the year has taught me to try harder»; «Over the last year a lot of changes that have made life interesting and rich. The main one is going to university. Thanks to this I have gained a lot of acquaintances, I am striving for self-improvement»; «The changes are related to moving and living completely independently. All of them are joyful and cover my needs in many spheres».

Table 6

Results of content analysis of the texts of essays on the topic «Changes recently» in the sample of girls

Category	Content
«Change is negatively affect on me». (16,9%)	«Because of the changes, increased anxiety about the world, control of everything, realizing the reasons for negative attitudes towards myself»; «I feel less satisfaction with life and am always in a reduced mood»; «Social circle has shrunk. I realized how susceptible I am to manipulation. I realized that I don't understand anything»; «The things that have changed have become meaningful, lost their meaning. It becomes more difficult to restrain emotions. I felt how much I was afraid of loneliness»; «There is no need to change security is more valuable than gains through loss».
«Change is negative, but the result is positive» (32,5%)	«Compared to school I became more introverted, withdrawn, sad. It has become hard»; «I became more selective with friendships. But because of more interesting studies I became more diligent and responsible. It became easier to treat my appearance, to think less about my shortcomings»; «As a result of the changes, my usual way of life has changed, but I have become more emotionally stable, I have found strength in myself, I have found a new hobby that develops my abilities, I have become more comfortable being in a team».

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Category	Content
«The changes are positive for me» (50,6 %)	«I believe that the changes have been for the better. I have reconsidered many processes and attitudes»; «I have become more tolerant to changes and people around me, I regulate my emotional state independently. Now I easily make new acquaintances and deepen existing relationships»; «I have become more independent, better time management, my anxiety level has significantly decreased, my self-esteem has increased, I am more excited about life».

According to the results of the analysis of essays, it was revealed that all the changes noted by the respondents were related to entering the university, inclusion in educational activities, and changes in lifestyle. According to the results of analyzing the distribution of categories of assessments of self-change among young men and girls, no significant differences were revealed (X^2 , $p > 0.05$). No content differences in the assessment of changes were found.

Also were analyzed (ANOVA, $p \leq 0.05$) indicators of the system of mental self-regulation and self-change personality of respondents who evaluate changes differently. According to the results of multiple comparison (Tukey $p \leq 0.05$), it was revealed that the indicators of self-change capacity of the group «Change positively affect me» ($M = 51.7$; $SD = 9.1$) were significantly higher ($p = 0.029$) compared to the group «Change is negative but the consequences are positive» ($M = 46.5$; $SD = 9.5$) and compared ($p = 0.009$) to the group «Change negatively affects me» ($M = 44.8$; $SD = 12.1$).

Self-change ability scores of the «Change positively affect me» group ($M = 24.0$; $SD = 3.2$) are higher compared ($p = 0.028$) to the «Change negatively affects me» group ($M = 21.8$; $SD = 4.0$). Self-change capability scores of the «Change negatively affects me» group ($M = 18.5$; $SD = 4.7$) are higher compared to those of the «Change positively affects me» group ($M = 16.4$; $SD = 3.4$). No differences in the expression of styles of responding to change were found among respondents who differently assessed change (ANOVA, $p \geq 0.05$).

A multivariate ANOVA was conducted to analyze the differences identified. This resulted in a statistically significantly significant model (Pillai's Trace $p = 0.014$). This model at the base shows the mutual influence of the factors «Evaluation of the experience of change» and «Inclusion in the group», and the dependent variables are interpersonal intelligence and regulatory process - modeling.

According to the results of the analysis of inter group effects, it is shown that the factor «Evaluation of the experience of change» influences the regulatory process of modeling (F , $p = 0.004$). Whereas the factors «Group membership» (F , $p = 0.014$) and «Evaluation of the experience of change» (F , $p < 0.000$) have a mutual influence on interpersonal

intelligence. Moreover, the reciprocal influence of the above factors on interpersonal intelligence ($F, p = 0.043$) is significantly significant, whereas for the regulatory process of modeling was found at the level of trend ($F, p = 0.054$).

Multivariate comparison showed (Tukey, $p \leq 0.05$) that «undergraduate biologists» who rated the experience of change as positively differed in interpersonal intelligence scores ($M = 49.0$; $SD = 3.1$) compared to undergraduate psychologists ($M = 44.0$; $SD = 4.5$) at a reliable level of significance ($p = 0.041$).

Whereas, the group of «undergraduate athletes» who rated the experience of change as positive distinguished high scores of the modeling process ($M = 9$; $SD = 1.5$) compared to the group of «undergraduate psychologists» who rated the experience of change as negative ($M = 4.2$; $SD = 2.3$), ($p = 0.005$) and the group of “undergraduate biologists” who rated the experience of change as negative but the consequences as positive ($M = 4.0$; $SD = 1.6$) ($p < 0.000$).

No statistical significance was found when the factor «Age» was added to the model ($F, p \geq 0.05$).

Correlation analysis of the indicators of the system of mental self-regulation and features of self-change was also carried out. Correlations $r > 0.330$ and $p \leq 0.05$ were considered. The analysis was performed for boys (Table 7) and girls (Table 8).

Table 7
Correlation structure of metacognitive awareness, conscious self-regulation, emotional intelligence and peculiarities of self-change of young men.

	Metacognitive Knowledge	Metacognitive Regulation	Process Programming	Process Modeling	Interpersonal Intellect	Intrapersonal Intellect	Understanding Emotions	Management Emotions	Potential Self-Change	Innovative Style	Reactive Style	Realizing Style	Realizing Style	Conservative Style
Metacognitive awareness	,831 ,000	,943 ,000	,445 ,065	,243 ,332	,319 ,197	,318 ,198	,268 ,282	,332 ,178	,200 ,427	,002 ,995	-,357 ,146	,389 ,110	-,107 ,673	

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	Metacognitive Knowledge	Metacognitive Regulation	Process Programming	Process Modeling	Interpersonal Intellect	Intrapersonal Intellect	Understanding Emotions	Management Emotions	Potential Self-Change	Innovative Style	Reactive Style	Realizing Style	Realizing Style	Conservative Style
Metacognitive knowledge	1	,598 ,009	,344 ,163	,451 ,060	,526 ,025	,612 ,007	,442 ,066	,623 ,006	,610 ,007	,350 ,154	-,528 ,024	,530 ,024	-,411 ,090	
Metacognitive regulation	,598 ,009	1	,435 ,071	,080 ,752	,145 ,566	,092 ,716	,122 ,630	,107 ,673	-,077 ,762	-,207 ,410	-,198 ,431	,244 ,329	,092 ,718	
Conscious regulation	,213 ,397	,211 ,401	,353 ,025	,272 ,089	,282 ,078	,219 ,174	,316 ,047	,193 ,233	,209 ,195	-,153 ,544	,067 ,792	-,093 ,713	,191 ,448	
Self-change potential	,610 ,007	-,077 ,762	,150 ,355	,353 ,026	,411 ,008	,473 ,002	,384 ,014	,542 ,000	1	,515 ,029	-,622 ,006	,563 ,015	-,450 ,061	

Note. Statistically significant correlations are highlighted in font.

Table 7 presents the correlations: It was found that metacognitive knowledge reveals correlations with interpersonal intelligence ($r = 0.526$; $p = 0.025$), intrapersonal intelligence ($r = 0.612$; $p = 0.007$), emotion management ($r = 0.623$; $p = 0.006$), self-change potential ($r = 0.610$; $p = 0.007$), realizing style of responding to change ($r = 0.530$; $p = 0.024$), and negative relationship with reactive style of responding to change ($r = -0.538$; $p = 0.024$).

The self-change potential correlations found were important: Positive relationships with metacognition ($r = 0.610$; $p = 0.007$), modeling process ($r = 0.353$; $p = 0.026$), interpersonal intelligence ($r = 0.411$; $p = 0.002$), intrapersonal intelligence ($r = 0.473$; $p = 0.002$), understanding emotions ($r = 0.384$; $p = 0.014$), innovative style of responding to change ($r = 0.515$; $p = 0.029$), realizing style of responding to change ($r = .563$; $p = 0.015$) and negative relationship with reactive style of responding to change ($r = -0.622$; $p = 0.015$).

The correlations between the system of mental self-regulation and the features of girls' self-change are presented in Table 8.

Table 8

Correlation structure of metacognitive awareness, conscious self-regulation, emotional intelligence and peculiarities of girls' self-change

	Metacognitive Knowledge												
	Metacognitive Regulation	Process Programming	Process Modeling	Interpersonal Intellect	Intrapersonal Intellect	Understanding Emotions	Management Emotions	Potential Self-Change	Innovative Style	Reactive Style Realizing Style	Realizing Style	Conservative Style	
Metacognitive awareness	,715 ,000	,955 ,000	,492 ,001	,120 ,444	,231 ,135	,332 ,030	,315 ,040	,287 ,062	,418 ,005	,017 ,915	-,266 ,084	,251 ,104	-,006 ,971
Metacognitive knowledge	1	,476 ,001	,501 ,001	,075 ,632	,539 ,000	,316 ,039	,347 ,023	,505 ,001	,284 ,065	,148 ,344	-,298 ,052	,282 ,067	-,096 ,542

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	Metacognitive Knowledge	Metacognitive Regulation	Process Programming	Process Modeling	Interpersonal Intellect	Intrapersonal Intellect	Understanding Emotions	Management Emotions	Potential Self-Change	Innovative Style	Reactive Style Realizing Style	Realizing Style	Conservative Style
Metacognitive regulation	,476 ,001	1	,406 ,007	,119 ,448	,063 ,690	,284 ,065	,249 ,108	,147 ,347	,405 ,007	-,042 ,791	-,209 ,179	,196 ,207	,033 ,832
Conscious regulation	,441 ,003	,314 ,040	,708 ,000	,577 ,000	,250 ,102	,474 ,001	,412 ,005	,364 ,015	,147 ,341	,061 ,695	-,258 ,090	,291 ,055	-,012 ,939
Self-change potential	,284 ,065	,405 ,007	,168 ,276	,310 ,041	-,025 ,872	,250 ,102	,092 ,555	-,002 ,990	1	,508 ,000	-,386 ,010	,364 ,015	-,474 ,001

Note: Statistically significant correlations are highlighted in font.

First of all, the correlations of metacognitive involvement in activity with the regulatory process modeling ($r = 0,492$; $p = 0,001$), intrapersonal intelligence ($r = 0,332$; $p = 0,030$), and self-change potential ($r = 0,481$; $p = 0,005$) were revealed. Self-change potential forms correlations with metacognitive regulation ($r = 0,405$; $p = 0,007$), innovative style of responding to change ($r = 0,508$; $p = 0,000$), realizing style of responding to change ($r = 0,364$; $p = 0,015$) and negative relationships with reactive ($r = -0,386$; $p = 0,010$) and conservative style of self-change ($r = -0,474$ $p = 0,001$).

Discussion

Our research interest in analyzing the features of personality self-modifications and mental self-regulation in the context of students' metacognitive engagement correlates with the goals of current research (Bui & Johnson, 2024; Faisal khellab, Demirel & Mohammadzadeh, 2022).

Analysis of the mean values of the components of the mental regulation system components revealed significant differences in the performance of boys compared to girls. Girls are distinguished by the expression of the regulatory modeling process. The indicators of emotional intelligence are higher in boys.

The sample mean values of the components of metacognitive awareness as well as the indicators in the sample of both young men and girls in our study are significantly lower than the normative averages presented in the studies of 2022 (Perikova & Byzova, 2022). This fact may be related to the fact that the 2022 data reflect the average indicators of a sample of older respondents.

The peculiarities of self-change indicators of boys and girls have been revealed, which correlates with the conclusions of the authors of the methodology «Potential for Self-Change» (Manukyan, Murtazina & Grishina, 2020). Girls are distinguished by a higher value of belief in self-changes compared to young men. Also, girls are distinguished by the expression of conservative style (the attitude of asserting change), and young men are distinguished by the expression of innovative style (the attitude of perceiving change). The results obtained differ from the data published by T.Y. Bazarov and M.P. Sycheva, obtained on a sample of managers (2012).

According to the results of content analysis of essay texts, different aspects of respondents' assessment of changes were revealed: «Changes negatively affect me», «Changes are negative, but the result is positive», «Changes are positive for me». It is shown that positive assessment of changes is significantly expressed in the sample (48.0%). No significant differences in the assessment of changes by boys and girls were revealed. Shemanova N.A. shows that at older ages sex differences exist (Shemanova, 2008).

Students who evaluate changes positively are characterized by high indicators of potential and ability to change themselves. Students who evaluated change negatively are characterized by high scores of self change capacity. Zhr. Gurat states, failure to use metacognitive strategy correctly leads to intense negative emotions, confusion, or frustration (Gurat & Medula, 2016).

The obtained model showing the mutual influence of the factors «Belonging to a group» and «Evaluation of changes» shows that respondents who are distinguished by high values of emotional intelligence and regulatory process modeling evaluate changes positively. The specificity of mental self-regulation and self-change in different study groups has not been investigated before and is an important result of our study. It is shown that different resources can be found in groups that allow members to reflect the real social situation. M. Tomasello argues that the acquisition of cognitive flexibility is an important outcome, a consequence of young people's attempts to metacognitively regulate different social perspectives within group interaction (Tomasello, 2024).

We also analyzed the results of the analysis of the interrelationships between the indicators of the mental regulation system and the self-change of young men and women for the first time. Different structures of interrelationships between young men and girls were revealed. In the sample of girls, the potential for self-change forms significant relationships with metacognitive awareness (metacognitive regulation) and styles of responding to changes. The structure of interrelations of young men is formed with metacognitive awareness (metacognition), components of emotional intelligence and styles of reaction to changes. J. Flavell writes, «Metacognitive experiences may be brief or long in duration, simple or complex in content, but they form a belief (faith) about the success or failure or progress you are making or can make in the future» (Flavell, 1979).

Contemporary researchers note that executive processes control and manage actions and attention at the executive level (Gurat, Cesar & Medula, 2016). Metacognitive processes control and manage executive processes at the metacognitive level – both levels contribute to effective and efficient behavioral decision making (Tomasello, 2024).

Limitations of the findings of the study are the quantitative, gender, age, and psychometric characteristics of the sample. Prospects of the study include organizing a longitudinal study of students in study groups at different stages of education.

Conclusion

The researchers' conclusions about the possibility of managing the perception of changes, as well as about the influence of this perception on the psychological health of the general population open the field of research on effective ways of change perception. Our study shows that there are differences in students' experiences of change. The identified features of metacognitive monitoring (use of metaknowledge or meta-regulation) suggest that there are different change management strategies that contribute to the psychological well-being of young people.

Our study shows that respondents aged 17 to 20 years old are characterized by low values of metacognitive awareness. At the same time, the structure of the indicators of the system of mental regulation and self-change of girls is characterized by dense connections of components, involvement in metacognitive regulation and styles of responding to changes, while the structure of young men reveals connections of metacognitive knowledge, emotional intelligence and styles of responding to changes.

Such differences reflect different metacognitive monitoring capabilities. Researchers of metacognitive awareness argue that metacognitive knowledge enhances performance during individualized problem solving, which is represented by different levels of metacognitive monitoring: preparatory, productive, and evaluative.

The main role of metacognitive awareness is to promote dynamic interdependence between the phases of metacognitive knowledge, which is reflected in the structure of girls' mental regulation.

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Yana E. Vinogradova – conceptualized the study, conducted the research, prepared and processed the data, and wrote the article.

Valentina M. Byzova – developed the concept, conducted the research, edited the text, and approved the final version.

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The Communicative Orientation of a Consulting Psychologist as a Factor of Preparedness to Consult Women with Psychological Infertility

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Abstract

Introduction. The relevance of the research topic is due to the objectively existing contradiction between the growing number of women with psychological infertility, their requests for qualified psychological help and the lack of investigation on the problem of training psychologists to provide such assistance. The purpose of this study was to identify the typological features of women with psychological infertility and the level of their satisfaction with relationships with counseling psychologists, depending on different communication orientations. **Methods.** The study was carried out in two stages: in the first series, the types of women with psychological infertility were identified by processing empirical data on their personality traits, manifested in interpersonal interaction. 312 women with a diagnosis of unspecified infertility were examined. The second series of the empirical study consisted in identifying the relationship of female clients with a predominance of different personality types, with their counseling psychologists with different communication orientations (n=72). **Results.** There have been identified five types of women with psychological infertility and the peculiarities of their relationship with counseling psychologists of different communicative orientation: most women of aggressive-masculine type demonstrated satisfaction with communication interaction with consultants characterized by the predominance of conformal orientation; infantile-

capricious type was related to manipulative orientation; patronizing-instructive type – authoritarian orientation; anxiety-phobic – alterocentric orientation; professional-oriented type – dialogue orientation. It has been established that the consultants' ideas about "difficult" clients from among infertile women were largely due to the predominance of a certain type of orientation in communicative interaction. **Discussion.** It has been concluded that one of the factors of a psychologist's preparedness to consult women with psychological infertility was their ability to use different forms of behavior in communicative situations, and to transform them depending on the typological characteristics of client's personality.

Keywords

preparedness to consult women with psychological infertility, typological features of women with psychological infertility, communicative orientation, relations in the "Consultant-client" system, communicative flexibility, "difficult" client, characterological communicative tendencies.

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Introduction

The problem of providing psychological help to women with reproductive disorders is one of the most topical and yet complex and unsolved issues. Its relevance is primarily due, on the one hand, to the growing demand for targeted assistance related to difficulties in fulfilling the maternal role, and on the other hand, to the lack of scientifically sound information about the consultant psychologist's preparedness to work with such a request. The difficulty in training a consulting psychologist to work with women with psychological infertility is determined both by the peculiarities of a psychologist's professional education, the priorities of fundamental training with a significant amount of methodological knowledge (Arpentieva, 2016), and the undeveloped content of psychological counseling, the lack of a counseling algorithm due to the deficient psychological knowledge about female infertility (Voskanyan, Vasilyeva, 2024).

Female infertility is the origin of serious psychological problems (Golyshkina et al., 2021). Infertility may cause numerous negative psychological consequences, such as emotional stress, depression, anxiety, fear (Shakhvorostova, 2017), anger, shame, jealousy (Yermoshenko, Krutova, 2005), loneliness, despair, lack of self-esteem, emotional instability (Dementieva, 2010), insufficient sexual impression and sexual

dysfunction (Assaysh-Öberg, Borneskog & Ternström, 2023). Negative psychological phenomena associated with infertility are a factor behind the growing demand of infertile women for qualified psychological help.

Infertility is a global problem, and according to some estimates, about 186 million people worldwide are suffering from infertility (Assaysh-Öberg, Borneskog, Ternström, 2023). Despite of this, psychological studies of infertility and the related content of psychological counseling for women who suffer from infertility, are quite few in number and lack their consistency and fundamental scientific understanding (Kim, Moon & Kim, 2020).

Most of the studies on psychological counseling for infertile women somehow connect its content with the negative psycho-emotional consequences of female infertility (Fallahzadeh et. al., 2019), and the results of psychological counseling are associated with a reduction in stress, anxiety, and apathy (Meyers & Domar, 2021).

Psychological (psychogenic, functional) infertility, or infertility of unknown origin, is associated with the absence of any medical and objectively established problems in woman's reproductive system; pregnancy does not occur for psychological reasons, which may be due to intrapersonal conflicts or fears, or certain psychological problems that cause the internal resistance to pregnancy (Vasilenko, Blum, 2017). Many studies have proved the significant role of the family and family relations in the development and functioning of a woman's reproductive system (Mordas, Rudakova, 2021). Thus, Gavrilova V.E. considers a special disposition, formed during the childhood due to the peculiarities of family upbringing and child-parent relations, as factors of non-occurrence of pregnancy in some women despite of their objective somatic health (Gavrilova, 2018). Among these unfavorable family factors that might lead to the formation of that special disposition in the childhood, or a "family scenario" that would block the occurrence of pregnancy at the level of the central nervous system, the author highlights a distant relation with mother, the assignment of responsibilities to the baby girl to take care of a younger sibling, and excessive "adult" requirements for the child (Gavrilova, 2018). The main cause for infertility may be some traumatic experience related to the family and its social status: poverty, a father running out on the family, forced rejection of the "joys" of childhood (Manohar et al., 2016), which eventually develops into fear of an unfavorable financial situation and intrapersonal conflict, when two main factors would be fighting inside: the mother's motive and the career motive (Kipper & Zadik, 1996). The research on family situation of women with psychological infertility, both in the parental family and in their own, allows increasing the effectiveness of the assistance provided (Shakhvorostova, 2017; Stepanova, Bonkalo, 2022).

Psychological help to women with reproductive disorders in one way or another involves working with their past, analyzing the factors that would cause a conflict between a woman's desire to have a child and their inner unwillingness to fulfill the role of a mother (Filippova, 2014). The complexity of counseling for the problem of female infertility of unclear etiology, lies in its multidimensional and multifaceted nature,

related to the need of integrating those areas of psychology that deal with different manifestations of reproductive disorders, at different stages of its formation (Anderson, Dabelko-Schoeny & Fields, 2018).

Psychological counseling for problems related to female infertility of unknown etiology is a special type of professional activity of a consulting psychologist, who, firstly, is forced to act within the framework of the activities of related specialists, including the subject areas of obstetricians, internists, psychiatrists, lawyers, social workers, educators (Kheirkhah, Faramarzi & Shafierizi, 2023); secondly, performs helping activities in different conditions of clients and in different social situations of their development (Andrei et al., 2021); and thirdly, integrates the tasks of psychological counseling with the those of psychotherapy and psychocorrection, which is due to the interpenetration of deep personal problems of clients with problems of their interpersonal interaction (Kheirkhah, Faramarzi & Shafierizi, 2023).

Psychological help in a situation of female infertility of unclear etiology is based on a consultative conversation. During the psychological counseling, however, there may arise various difficulties related to both the client's behavior (Mironova, 2024) and the condition of the counseling psychologist himself (Korablina, Korgozha, 2014). The characteristics of the relationship in the psychologist-client system would play an important and actually decisive role here (Prusova, 2022), which is recognized by representatives of all areas of psychological counseling. A considerable attention is paid here to the communicative component of the personality of consulting psychologists themselves, the formation of their communicative competence (Stepanova, 2024), the content of which, according to researchers, would include developed emotional and social intelligence, empathy (Dolgova, Melnik, Karakhan, 2015), sociability (Lavrentieva, 2006), the internal locus of control (Petrovskaya, 1996), and the ability to speak, listen, and convince (Nalivayko and Shinkoruk, 2010).

The profession of a consulting psychologist, as it is known, belongs to a group of helping professions, which main characteristic is a special relationship that develops between a professional who provides assistance and a person who receives it, during the process of dialogue (Nalivayko, Shinkoruk, 2010). And it is precisely the counseling psychologist who should build up such "helping" relationships, and the effectiveness of the entire counseling process would depend on their ability to establish a communicative contact and manage a dialogue conversation (Arpentieva, 2016). The peculiarity of the professional training of a consulting psychologist as a specialist in helping activities lies in the need to integrate the processes of formation of professional competence as a combination of certain knowledge, skills and abilities that form the capacity to solve their professional problems (Shorokhov, 2023), and psychological preparedness – that is, the motivational, moral and existential components of the general professional readiness of a consulting psychologist (Korablina, Korgozha, 2014).

However, the question of the relationship between the communicative orientation of the consultant's personality, and their individual communicative style, with the forms

of their communicative interaction with the client, remains open and far from being investigated.

The purpose of this investigation was an identification of the relationship between the communicative orientation of the consulting psychologist and the satisfaction of their clients, women of various types with psychological infertility, with their developing relationships with the consulting psychologist. Such satisfaction with the relationship has been considered by us as one of the indicators of the effectiveness of the first phase of the consultation process.

Methods

A study focused on identifying the typological features of women with infertility of unknown origin was conducted by us earlier, with its published results (Stepanova, 2023). The present study constitutes the continuation of the previous study, and includes the same sample of 312 women with psychological infertility. This time the investigation has focused on the level of satisfaction of women with infertility of unclear etiology, with their relationship with a counseling psychologist.

The peculiarities of the communicative orientation of counseling psychologists were studied in a sample consisting of 72 counseling psychologists with work experience from 3 to 10 years, who provided individual psychological assistance to the interviewed women (at least two sessions). All respondents were women; the age range varied from 29 to 58 years old (the average age was 44.6 y.o.).

For the purpose of investigation of the communicative orientation of a consulting psychologist, there was chosen a methodology developed and tested back in 1987 by S.L. Bratchenko (the methodology based on the provisions of the theory of dialogue (M.M. Bakhtin et al.), designed to identify stable types of personality orientation in communication, with its manifestation in a communicative style, and individual communication strategy; the data of the psychometric verification of the methodology, that indicates its sufficient retest reliability and constructive validity, is presented in the author's dissertation; relationship satisfaction is a ten-point satisfaction scale (a variable answer to the question: "Please evaluate how satisfied you are with your relationship with a counseling psychologist: from 0 to 10 points, where 0 points - not satisfied at all, and 10 points - fully satisfied").

There was also examined the ratio of ratings of female clients of their consultants, as well as those of the consultants, of their clients, and their ideas about the ideal consultant and a difficult client. For this purpose, T. Leary's interpersonal relationship test was used.

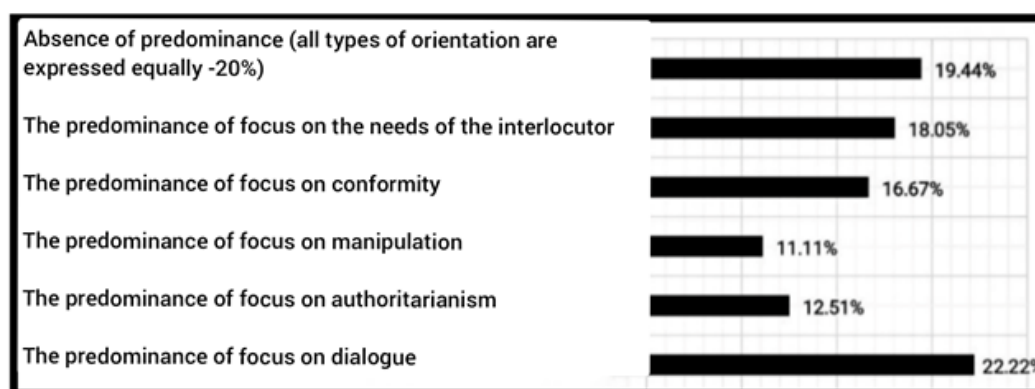
Statistical methods included a package of descriptive statistics, as well as comparative (Mann Whitney U-test), correlation (Spearman), cluster (Ward) and factor (principal component method) analyses.

Results

The five main types of women with psychological infertility were identified by us in a previous study (Stepanova, 2023), which include aggressive-masculine (AM), infantile-capricious (IC), patronizing-instructive (PI), anxiety-phobic (AP) and professional-oriented (PO) types. A study of the communicative orientation of consulting psychologists providing psychological help to women with infertility of unknown origin, performed using the methodology of S.L. Bratchenko, showed that all practicing psychologists have an individual communication style and differ from each other in their individual formula of communicative behavior (Figure 1). The absence of a predominance of any type of communicative orientation (all indicators fall within the range of average values) was registered only in less than 20% of practicing consulting psychologists.

Figure 1

Percentage distribution of consultants according to the prevailing type of communicative orientation



During the study of the degree of satisfaction of women with psychological infertility with their relationships developing in the "Psychologist-client" system (answering a direct question with answer options from 0 to 10 points, depending on the subjective assessment of the degree of satisfaction), there have been revealed certain correlations with indicators of the prevailing communicative orientation of the personality of the consulting psychologist (Table 1).

Table 1

Ratio between the degree of satisfaction of different types of women with psychological infertility with their relationships with counseling psychologists, and the prevailing type of their communication orientation

Type of personality of female clients	Concordance coefficient W	Types of communication orientation of the consultants				
		DG	AUTH	MN	CN	IN
AM	0,75***	0,132	-0,221	-0,169	0,617***	0,207

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Type of personality of female clients	Concordance coefficient W	Types of communication orientation of the consultants				
		DG	AUTH	MN	CN	IN
IC	0,81***	-0,196	-0,187	0,563***	0,198	0,177
PI	0,77***	0,233	0,449**	0,156	-0,033	-0,004
AP	0,73***	-0,204	-0,043	0,174	0,114	0,661***
PO	0,86***	0,753***	-0,012	-0,584***	0,112	0,349**

Note: ** $p < 0,01$; *** $p < 0,001$; DG – focus on dialogue; AUTH – focus on authoritarianism; MN – focus on manipulation; CN – focus on agreement, conformity; IN – focus on the needs of the interlocutor.

It has been established that most women with psychological infertility of aggressive-masculine (AM) type were satisfied with their communication interaction with consultants that had been aimed at adopting an objective position in communication; they were characterized by a renunciation to be understood by their communication partner (in this case, a counseling psychologist) and a willingness to help them in everything ($r = 0,617$; $p < 0,001$); while women of infantile-capricious (IC) type were feeling themselves more comfortable when communicating with those consultants focused on restraint and insincerity, and capable of hidden manipulation of a partner ($r = 0,563$; $p < 0,001$); patronizing-instructive (PI) individuals, on the contrary, would appreciate the consultant's ability to categorically assess the situation, give their prescriptive advice, and insist on their point of view ($r = 0,449$; $p < 0,01$); anxiety-phobic (AP) type would be oriented on interaction with such a consultant who would give all their attention to the client, seek to understand more deeply all their requests, listen, sympathize, and try to relieve their condition ($r = 0,661$; $p < 0,001$); and those women with prevalence of the professional-oriented (PO) type would be satisfied with the relationship with those consultants who prefer to establish an equal dialogue and achieve a communicative cooperation ($r = 0,753$; $p < 0,001$).

It is important to note that the dialogic communicative orientation of a consultant may not always demonstrate effectiveness in building relationships with female clients, and that the correlation between the degree of satisfaction with relationships with consultants focused on building an equal dialogue in groups of infantile-capricious and anxiety-phobic women types, would be negative. At the same time, the manipulative orientation in the consultant's communication would not always lead to a negative communicative effect: the correlation between these indicators in groups of women with a predominance of infantile-capricious, patronizing-instructive and anxiety-phobic types is positive.

Moreover, the results of the study on ratio between the ideas of female clients and consulting psychologists about an ideal consultant and a difficult client, evidence the necessity to take into account the needs of each individual client, and their typological features, manifested in interpersonal interaction, when counseling women with psychological infertility in order to achieve contact in the "Consulting Psychologist" system.

The characterological profiles of difficult clients, according to the views of psychologists providing psychological help to women with infertility of unclear etiology, would significantly differ from each other, depending on the prevailing type of their communicative orientation (Table 2).

Table 2

Perceptions of psychological consultants about a "difficult" client from among women with psychological infertility (average group score)

Prevailing orientation on:	I	II	III	IV	V	VI	VII	VIII
Dialogue	7,8	14,2	4,9	5,8	13,2	13,3	6,6	8,9
Authoritarianism	12,6	6,9	14,8	6,2	9,2	1,6	4,2	7,4
Manipulation	13,4	12,9	15,2	10,7	4,3	1,8	2,0	2,6
Conformity	8,4	5,9	5,4	9,4	4,6	5,8	4,4	3,2
Alterocentrism	5,6	13,8	6,2	8,6	8,0	0,8	3,2	2,4
Similar prevalence	4,9	5,7	5,4	3,2	2,8	0,6	1,4	0,8

Note: I-VIII –characterological tendencies according to T. Leary: I – Authoritarian; II – Egoistic; III – Aggressive; IV – Suspicious; V – Subordinate; VI – Dependent; VII – Benevolent; VIII – Altruistic

According to counseling psychologists with a predominant focus on dialogue, a difficult client from among women suffering from infertility of unknown origin and seeking psychological help, would be a person characterized by narcissism (14.2), combined with self-deprecation and excessive feeling of guilt (13.2), as well as extreme lack of independence and subjection (13.3); while from the point of view of consultants focused on a directive style of communication, a difficult client would have such characterological personality traits as irritability, negativism, disobedience (14.8), a tendency for dominance, and resistance (12.6); and consultants who are used to build their communicative behavior based on the interests of their interlocutor, find it difficult to advise women who would resort to mockery, sarcasm, and skepticism when communicating (13.8).

A pairwise comparison of the average group indicators of the characterological tendencies of difficult clients, from the point of view of consultants of different communicative orientation, has evidenced the statistically significant differences between the groups of psychologists, at a rather high level of significance (Table 3).

Table 3

The results of a comparative analysis of the ideas of consulting psychologists with a predominance of different communicative orientations, about a "difficult" client (level of significance)

Differences between:	I	II	III	IV	V	VI	VII	VIII
1 – 2 gr.	0,000	0,000	0,000	0,124	0,046	0,000	0,049	0,093
1 – 3 gr.	0,000	0,089	0,000	0,007	0,000	0,000	0,001	0,001
1 – 4 gr.	0,102	0,000	0,000	0,004	0,000	0,000	0,023	0,009
1 – 5 gr.	0,095	0,087	0,069	0,088	0,005	0,000	0,006	0,001
1 – 6 gr.	0,047	0,000	0,106	0,039	0,000	0,000	0,000	0,000
2 – 3 gr.	0,110	0,015	0,092	0,004	0,074	0,069	0,071	0,000
2 – 4 gr.	0,000	0,103	0,001	0,042	0,039	0,008	0,101	0,005

Differences between:	I	II	III	IV	V	VI	VII	VIII
2 – 5 gr.	0,000	0,000	0,000	0,049	0,061	0,098	0,077	0,021
2 – 6 gr.	0,000	0,110	0,000	0,012	0,033	0,087	0,023	0,001
3 – 4 gr.	0,000	0,000	0,000	0,124	0,117	0,003	0,042	0,099
3 – 5 gr.	0,000	0,105	0,000	0,063	0,036	0,094	0,100	0,118
3 – 6 gr.	0,000	0,000	0,000	0,000	0,056	0,067	0,077	0,082
4 – 5 gr.	0,091	0,023	0,079	0,093	0,001	0,000	0,061	0,097
4 – 6 gr.	0,093	0,096	0,312	0,004	0,055	0,000	0,000	0,000
5 – 6 gr.	0,069	0,000	0,078	0,000	0,000	0,172	0,181	0,024

Note: I-VIII – characterological tendencies according to T. Leary (Table 2). 1 gr. – Predominance of the focus on dialogue; 2 gr. – predominance of the focus on authoritarianism; 3 gr. – predominance of the focus on manipulation; 4 gr. – predominance of the focus on conformity; 5 gr. – predominance of the focus on alterocentrism; 6 gr. – no type of communicative orientation prevails.

In the group of consultants who showed no predominance of one communicative orientation over another, and where all attitudes in communicative interaction were expressed in the same way (20% each), there were identified a significantly smaller number of those characterological traits of the client that may cause difficulty in establishing a psychological contact.

It should be also noted that in this group, there were obtained the highest indicators of women's satisfaction with relationships in the "Psychologist-consultant" system (9.6), regardless of their typological characteristics (46 out of 48 women gave the highest rating of relationship satisfaction, which amounts to 95.83%).

Discussion

In modern psychology, the scientific understanding of the problem of communicative behavior of counseling psychologists and their professional communication is represented by a very limited amount of theoretical and empirical material (Mironova, 2024). Over the years, the main attention has been paid to the communicative competence of a psychologist, traditionally considered as an integrative education of their personality, including a certain set of communicative qualities and skills that are universal for successful professional interaction with different types of clients (Petrovskaya, 1996; Lavrentieva, 2006; Nalivaiko, Shinkoruk, 2010; Dolgova, Melnik, Karakhan, 2015).

However, in recent years, the researches have increasingly suggested that the nature of interpersonal communication is largely determined by typological characteristics of the communicative sphere of the personalities of communication partners (Nazarova, 2023), and those characteristics, which are quite persistent and would manifest themselves in individual communication styles, attitudes, positions in communication, and communicative orientation (Odintsova, Razgotchikova, Kuzmina, 2024).

When considering the difficulties faced by practicing psychologists, the researchers note certain communication barriers associated with the undeveloped ability of consulting psychologists to establish psychological contact with different categories of clients (Mironova, 2024), as well as with the individual characteristics of their own stable communicative behavior (Shorokhov, 2023; Stepanova, 2024).

In the situation of counseling women with psychological infertility, which complexity is due to both different typological features of their personality (Stepanova, 2023), life-meaning orientations (Stepanova, Bonkalo, 2022), and the presence of some intrapersonal conflict (Kipper & Zadik, 1996), as well as their mental states – anxiety (Golyshkina et al., 2021), depression (Fallahzadeh et. al., 2019), fear (Ermoshenko, Krutova, 2005), irritation (Dementieva, 2010), obsessions (Filippova, 2014), it is particularly important to find the ways to establish a psychological contact in the "Psychologist-client" system as the first phase of the consultation process.

The results of this study confirm the connection between the communicative orientation of consulting psychologists specializing in female infertility, and client satisfaction with relationships developing in the "Psychologist – client" system.

At the same time, the traditional idea that the orientation of a consulting psychologist towards dialogue with a client was one of the important conditions for the successful contact process (Prusova, 2022) has not been confirmed. Neither was confirmed the negative role of the consultant psychologist's orientation towards manipulating the client in professional interaction.

The results of the study have revealed that the satisfaction of women with psychological infertility with their relationship with a counseling psychologist, would

depend both on the typological characteristics of women themselves, and on the communicative orientation of the consultant, and that in order to establish a contact in the "Psychologist-client" system, it is necessary that the psychologist would develop communicative flexibility, and the ability to overcome their own habitual and stable forms of communicative behavior, to occupy different positions during the professional interaction, depending on the typological characteristics of their clients.

Conclusion

In the course of the research, it was discovered that the communicative orientation of the consultant psychologist's personality as a fairly stable and peculiar characteristic of their position in interpersonal communication, is interrelated with the typological characteristics of women with psychological infertility. Based on the conducted research, it can be suggested that the communicative orientation of a consulting psychologist is one of the factors of their preparedness to consult women with psychological infertility. Providing there was no clear manifestation of one or another communicative orientation, neither were there difficulties in psychological counseling of different types of women, but at the same time there was registered a high degree of women's satisfaction, regardless of their typological characteristics, with their relationships in the "Psychologist-client" system.

These findings indicate the need for the psychologists, in the process of their professional training for counseling women with psychological infertility, to focus on the development of the ability to use different ways and attitudes in communicative interaction, depending on the typological characteristics of their clients. The development of this ability presupposes the formation of a psychologist's communicative adaptability, flexibility and creativity.

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Self-Relationship of Codependent Women: Psychological and Genetic Predictors

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Abstract

Introduction. Self-esteem is a key aspect influencing psychological well-being and a potential target of therapeutic intervention in co-dependent women. Particular attention is paid to the role of reflection in the formation of self-esteem, as well as a possible link with genetic factors such as COMT and DRD2 genes. The aim of the study is to identify psychological and genetic predictors of the level of self-esteem in co-dependent women. **Methods.** Genotyping method was used to investigate genetic predictors. As candidate genes we considered the genotypes of dopamine receptor DRD2 (rs1800497) and COMT enzyme gene (Val158Met). Psychological diagnostics was carried out using the following techniques: test-questionnaire of self-relationship (V. V. Stolin, S. R. Pantileev); questionnaire "Differential type of reflexion" (D. A. Leontiev); test of meaning-life orientations (D. A. Leontiev); co-dependence scale (B. J. R. Winehold). The study involved 353 people - women aged 18 to 54 years. **Results.** The level of self-esteem in co-dependent women significantly differs depending on the genotypes of DRD2 and COMT genes, with the highest indicators in carriers of CC (DRD2) and VV (COMT) genotypes. The correlations between the indicators of self-esteem and reflexion and meaning-life orientations were revealed and described. The level of self-esteem in co-dependent women is associated with polymorphisms of DRD2 and COMT genes, as well as mediated by psychological factors, including meaningfulness of life and reflection. **Discussion.** Possible neurophysiological mechanisms underlying the identified effects include the influence of DRD2 and COMT gene polymorphisms on dopaminergic transmission; their

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relationship with the level of self-esteem is described. The genetic basis of self-esteem is complex and multifaceted, and the role of individual genes can only be manifested in interaction with other genetic and environmental factors. The obtained data emphasize the complex interaction of genetic and psychological mechanisms in the formation of self-esteem.

Keywords

Co-dependent behavior, codependent women, self-esteem, psychological predictors, genetic predictors, gene polymorphism, COMT, DRD2

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Introduction

Co-dependency is a complex, heterogeneous and ambiguous phenomenon that has a long history of use by psychologists and psychiatrists to describe people living with dependent relatives, as well as some features of interpersonal interaction (Kolenova, Kukular, Dyatlova, 2023). Happ et al. (2022) concluded that co-dependency is a specific, largely stable attitude that determines a person's negative perceptions toward the self and positive behavior toward others. It has also been shown that the experience of co-dependency is experienced as a complex but tangible multidimensional psychosocial issue in their lives (Bacon et al., 2020). In general, generalization of practical experience of working with co-dependents, along with the data of modern research, indicates that the self-esteem of co-dependent women has its own unique specificity and is characterized by a highly underestimated level (Artemtseva, 2017; Balsamova, 2022; Zenkova, 2023; Kolenova, Kukular, Dyatlova, 2023; Raklova, 2019). This condition is determinant in the formation of the self-concept of the personality of a co-dependent woman. In the practice of real life, it is manifested through negativization of the self-image, constant request for praise and approval from significant others. At the same

time, praise and compliments to a co-dependent woman form only a greater sense of guilt. It is also shown that working with self-esteem and the development of self-understanding in the therapeutic process is one of the leading factors of positive dynamics of changes in co-dependent behaviors (Madalieva, Ismailov, Khalilov, 2020; Khazova, Varioshkina, 2022). It is shown that as a result of therapy there is a gradual reconstruction of women's personality: self-esteem and self-perception change, there is an awareness of one's own boundaries, and the style of thinking changes. This, in turn, determines a woman's attitude to herself as a source of activity, as well as a decrease in reactive behavior in connection with the problems of a dependent family member.

In studies devoted to interpersonal relationships of co-dependents in different contexts it is shown that co-dependents are characterized by personal-communicative orientation to the significant Other (Mikhailova, 2020), while alienating loneliness is characterized by the predominance of the tendency to isolation in the personality, alienation from other people, norms and values, loss of significant ties and contacts, intimacy, privacy in communication, the ability to unity, alienation from oneself, self-dissolution, which is confirmed by the results of the study of Artemtseva N.F. (2019). Regarding behavior within professional activities, Biktagirova A. R. and Garifullina G. F. (2018) showed that the co-dependent personality is characterized by the desire to lead others and problems in the emotional sphere - the co-dependent personality is periodically in a depressed or depressed state. The authors also note that a co-dependent person has the qualities of a manipulator, is able to spiritually and emotionally infect other people and very often creates insurmountable difficulties in professional and personal development of a person. In the course of the study realized by A. A. Avanesyan, M. A. Kulachenko, A. V. Moskalenko (2020), it was found that co-dependent personalities against the background of the prevalence of a negative background of attitude to themselves have a tendency to constant control of their activities. They are characterized by high demands on themselves, which leads to a conflict between the real "I" and the "I" ideal, between the level of their claims and achievements, as well as to the recognition of their low value. Sultanova and colleagues (2022) found a negative relationship of co-dependence with such characteristics as self-esteem, success and autonomy. It is also noted that the severity of co-dependence is associated with emotional lability, low mood level and feelings of helplessness; external locus of control and sensitivity to external evaluation; as well as hypochondriasis and tendency to somatization of experiences.

In psychology and philosophy, it is believed that a person's self-relationship is based on self-awareness (Artsimovich, 2008; Stolin, 1988). Since the times of R. Descartes and J. Locke, reflexion as the ability to self-analyze and critically reflect on one's thoughts, emotions, and actions in different spheres of life has been considered the basis of self-awareness (Stolin, 1988). In essence, reflexion allows a person to form an idea of himself, his values and life priorities, to conceptualize his existence, which implies a close connection between the meaningfulness of life, reflexion and self-relationship.

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This connection has been repeatedly confirmed on various samples (Andreeva, 2023; Kartasheva, 2022; Ryabysheva, 2014). It can also be noted that reflexion itself is heterogeneous and is not an unambiguously constructive property (Leontiev & Osin, 2014). Given the differences in the forms of reflexion itself, it can be assumed that the nature of its connection with self-relationship can also be ambiguous.

In psychogenetics, most current work agrees that self-esteem, like other enduring personality characteristics, is genetically determined (Jonassaint et al., 2012; Kilford et al., 2015; Neiss, Sedikides & Stevenson, 2002; Shikishima et al., 2018). For example, genetic factors may play a key role in shaping the affective and cognitive aspects of personal self-esteem, in particular, they may influence individual differences in processing information related to the evaluation of the self and one's abilities (Podina et al., 2015). It has also been shown that genes for neurotransmitter systems can influence the level of sensitivity to stress in general, as well as to criticism, success or failure, which influences self-esteem formation (Niitsu et al., 2022; Serrano et al., 2021; Richter, 2017). Studies on samples of adolescents suggest that COMT and DRD2 gene polymorphisms are associated with levels of victimization and overall levels of dysregulation (Jonassaint et al., 2012; Gao et al., 2022). Comparative studies on model organisms have also repeatedly shown that the DRD2 gene encoding the dopamine D2 receptor (D2R) may be associated with decreased socialization motivation and symptoms of some neuropsychiatric disorders such as schizophrenia and major depression (Ike et al., 2023). In addition, there is evidence that in humans, the COMT gene modulates personal self-awareness and cognitive flexibility (Wang et al., 2016), and is also associated with the formation of dysfunctional or irrational beliefs (Schmack et al., 2015; Podina et al., 2015).

Thus, the analysis of the literature allows us to conclude that the self-relationship and of co-dependent women has its own specificity and can be one of the key targets of therapy. Self-relationship and formation is based on the ability to comprehend and evaluate one's experience, feelings, and personality as a whole, which indicates a possible connection between the self-relationship of co-dependent women and the features of reflection. There is also reason to believe that COMT and DRD2 genes may be associated with peculiarities of self-relationship. In this regard, the purpose of this study is to identify psychological and genetic predictors of the level of self-esteem of co-dependent women.

Methods

The sample consisted of 353 people - women aged 18 to 54 years (mean age 29.6 years). Of these, 188 were women aged 18 to 54 years (average age 34.3 years) who were in a relationship or related to an addict (alcoholism, drug addiction, non-chemical addictions).

The following psychological tests were used to investigate the features of self-relationship, reflection and meaningfulness of life:

- Self-relationship test-questionnaire (V. V. Stolin, S. R. Pantileev);
- Differential Type of Reflexion" questionnaire (D.A. Leontiev);
- test of meaning and life orientations (D.A. Leontiev);
- co-dependence scale (B. Winehold, J. Winehold).

The survey of respondents was conducted between 13.09.2022 and 20.03.2023 in person, in the format of electronic testing.

The method of molecular genetic analysis was used to investigate genetic predictors. As candidate genes we considered the genotypes of dopamine receptor DRD2 (rs1800497) and COMT enzyme gene (Val158Met).

The collection of genetic material from the subjects (buccal epithelium) for genomic DNA isolation took place immediately after the completion of psychological diagnosis, mostly in the morning. DNA was analyzed by allele-specific polymerase chain reaction (PCR) with "real-time" detection. 107 people participated in the study with the collection of genetic material, of whom 60 were women from 22 to 52 years old (mean age 35.3 years), who were related or in a romantic relationship with the addict (alcoholism, drug addiction, non-chemical addictions).

Methods of mathematical statistics: Shapiro-Wilk criterion was used to determine whether the empirical distribution conformed to the normal law; the nonparametric Kruskal-Wallis criterion was used to study the significance of differences in the selected subgroups (in as a posteriori analysis a pairwise comparison by Dunn's method was carried out); to build a model of predictors of self-attitudes a variance analysis with ANCOVA covariates was used, where the factors were genotypes for the genes under study, and the covariates were reflexion parameters and meaning-life orientations. Correlation analysis with Spearman's rank correlation coefficient was also applied.

Statistical processing was performed using the JASP 0.16 software package.

Results

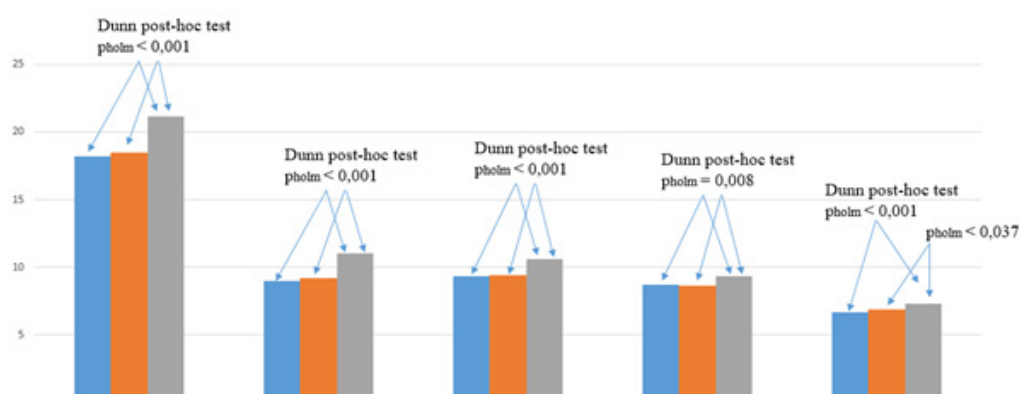
As a result of the analysis of the components and the general level of self-relationship in the sample, it was possible to establish that the group of co-dependent women who are related or in a romantic relationship with an addict (alcoholism, drug addiction, non-chemical addictions) show significantly lower scores in comparison with the control group of women who did not indicate persons with addiction in their close environment and who have low and average scores on the Wineholds co-dependency scale (Figure 1). Significant differences were also found between the two subgroups of the control group (those who did not identify persons with addiction in their close environment): between the group with low and average scores and the group with

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high scores on the Wineholds co-dependence scale. All the results of the calculation of descriptive statistics and normality tests are presented in Appendix 1.

Figure 1

Results of the study of self-esteem in the sample (mean values and comparative analysis)



Note: Group 1 - Co-dependent (N= 188); Group 2 - High level of co-dependence in the control group (N= 89); Group 3 - Low and medium levels of co-dependence in the control group (N= 80)

Next, a Spearman correlation analysis was conducted between the components and the overall level of self-esteem in the sample, types of reflection, meaning-life orientations, and overall level of meaningfulness of life (Table 1).

Table 1

Results of correlation analysis between the components and the overall level of self-attitude in the sample, types of reflection, meaning-life orientations and the overall level of meaningfulness of life (N = 353)

Variable		S scale	Self-esteem	Autosympathy	Expected attitude from others	Self-interest
Systemic reflection	Rs	0,11	0,12	-	0,148	0,226
	p-value	0,037	0,024	-	0,005	< ,001
Introspection	Rs	-0,531	-0,576	-0,294	-0,286	-0,254
	p-value	< ,001	< ,001	< ,001	< ,001	< ,001

Variable		S scale	Self-esteem	Autosympathy	Expected attitude from others	Self-interest
Quasireflexion	Rs	-0,238	-0,272	-0,178	-0,121	-
	p-value	< ,001	< ,001	< ,001	0,022	-
The meaningfulness of life	Rs	0,563	0,58	-	0,42	0,347
	p-value	< ,001	< ,001	-	< ,001	< ,001
Objectives	Rs	0,531	0,56	-	0,368	0,339
	p-value	< ,001	< ,001	-	< ,001	< ,001
process	Rs	0,536	0,522	-	0,374	0,303
	p-value	< ,001	< ,001	-	< ,001	< ,001
Result	Rs	0,528	0,504	-	0,371	0,367
	p-value	< ,001	< ,001	-	< ,001	< ,001
Locus of control-I	Rs	0,574	0,59	-	0,345	0,346
	p-value	< ,001	< ,001	-	< ,001	< ,001
Locus of control - Life	Rs	0,531	0,569	-	0,399	0,317
		< ,001	< ,001	-	< ,001	< ,001

It is shown that practically all components of self-relationship have reliable positive relations with the expression of systemic reflexion, meaning-life orientations and meaningfulness of life (table 1). The exception was the autosympathy indicator, for which significant correlations were found only with the parameters of introspection and quasireflexion. At the same time, the correlations with these types of reflexion are also negative in all other cases.

Next, an analysis of covariance was conducted to test the hypothesis that genes of the dopaminergic system, level of meaningfulness of life, and reflexivity parameters may act as predictors of co-dependent women's self-esteem (Table 2).

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Table 2

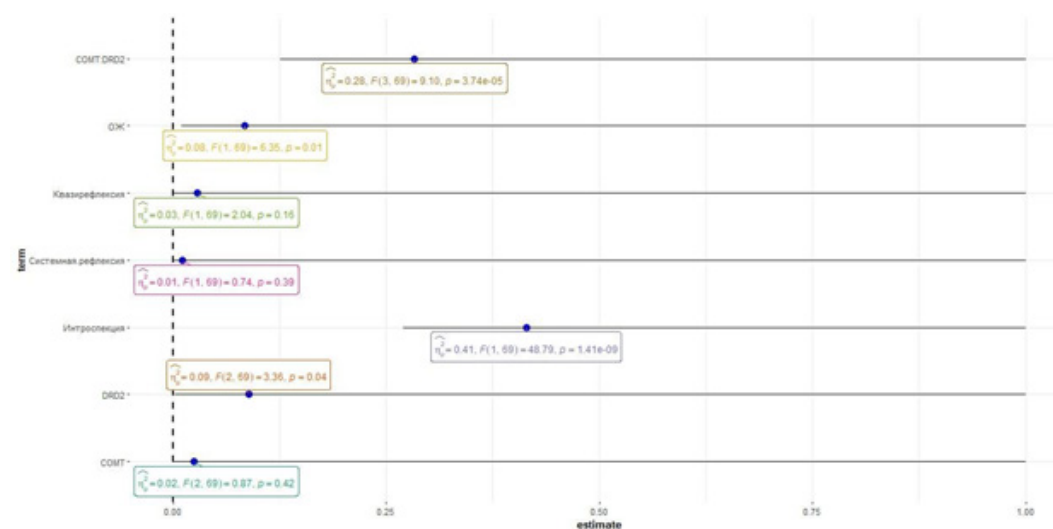
Results of covariance analysis of psychological and genetic predictors of self-attitude

	Sum of squares (Sum Sq)	Mean Sq	Eta-squared (η^2)	F	p
COMT	7,19	3,60	0,02	0,87	0,422
DRD2	27,67	13,83	0,09	3,36	0,040
COMT:DRD2	112,27	37,42	0,28	9,10	<0,001
Introspection	200,71	200,71	0,41	48,79	<0,001
Systemic	3,03	3,03	0,01	0,74	0,394
Quasireflexion	8,38	8,38	0,03	2,04	0,158
The meaningfulness of life	26,13	26,13	0,08	6,35	0,014
Residuals	69 283,83	4,11			

As a result of covariance analysis it is shown that the level of meaningfulness of life, level of introspection and genotype on DRD2 gene and COMT:DRD2 gene interaction have a significant effect. Graphically described effects are presented in Figure 2.

Figure 2

Results of covariance analysis of psychological and genetic predictors of self-attitude

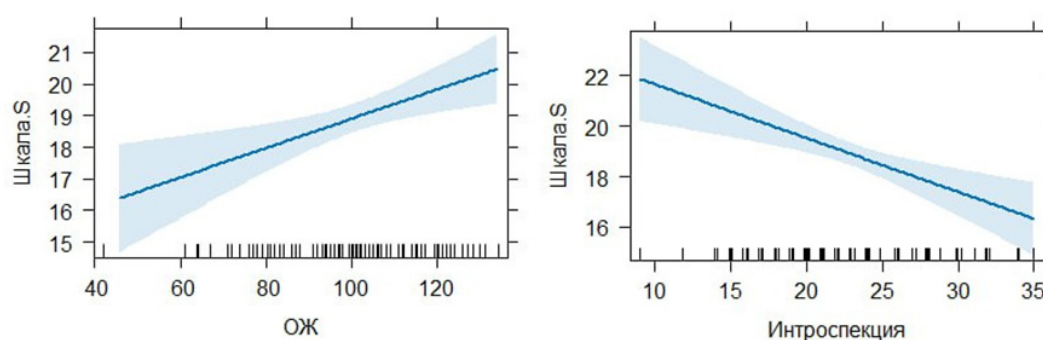


The strongest effects ($\eta^{(2)} > 0.14$) were observed between self-esteem and the level of introspection, as well as between self-esteem and the COMT:DRD2 gene interaction (Figure 2). Separately, medium effects ($\eta^{(2)} > 0.06$) were observed for the DRD2 gene and the meaningfulness of life indicator.

The data of covariance analysis are generally consistent with the data of correlation analysis and indicate that the higher the level of life meaningfulness, the higher the level of self-attitude (Fig. 3). The opposite direction is noted for introspection.

Figure 3

Analysis of relationships between the dependent variable (integral indicator of self-esteem - S Scale) and psychological predictors (meaningfulness of life - LS; introspection)



The highest values of self-esteem were observed in carriers of the CC genotype of the DRD2 gene (Fig. 4). At the same time, carriers of TT genotype have the greatest variation of values. When analyzing the joint influence, it is shown that carriers of the CC genotype of the DRD2 gene with the VV genotype of the COMT gene will have the highest values in the sample, and carriers of the CT genotype of the DRD2 gene with the VV genotype of the COMT gene will have the lowest values (Fig. 5).

Figure 4

Analysis of the level of self-esteem of co-dependent women carriers of different genotypes for the DRD2 gene

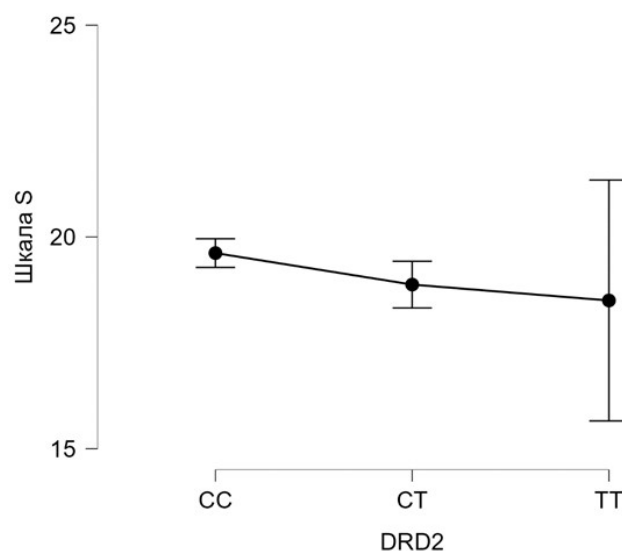
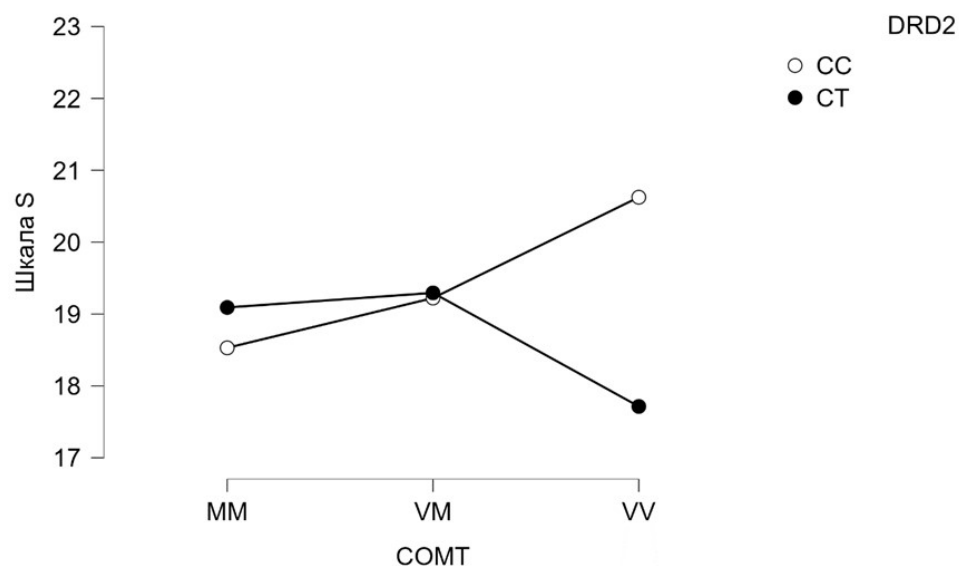


Figure 5

Analysis of the level of self-esteem of co-dependent women carriers of different genotypes for DRD2 and COMT genes



Discussion

The conducted research has shown that the level of self-esteem significantly differs in carriers of different genotypes of DRD2 and COMT genes, has positive correlation with the level of life meaningfulness and negative correlation with introspection. The results of correlation analysis generally correspond to the conclusions based on the theoretical analysis of scientific literature and the data of empirical studies obtained on different samples (Andreeva, 2023; Kartasheva, 2022; Ryabysheva, 2014). Most modern sources also support the idea that genes of the dopaminergic system can be associated with various personality characteristics and cognitive functions. Carriers of the CC genotype of the DRD2 gene at the rs1800497 locus may have more pronounced dopamine receptor activity, which is associated in the literature with increased information processing speed and behavioral reactivity, and reduced (compared to carriers of the T allele) severity of anxiety and depression symptoms (Mosset et al., 2022; Li, Bäckman, Persson, 2019). Variants at the Val158Met polymorphic locus of the COMT gene, also known as "Warrior or Worrier" (Serrano et al., 2021; Gafarov et al., 2021), have been directly linked to the activity of the enzyme catechol-O-methyltransferase, responsible for the metabolism of catecholamines, including dopamine. VV genotype carriers have lower dopamine levels due to higher COMT enzyme activity, according to some authors, this makes them more stress-resistant, more attentive, more effective in situations of uncertainty (Serrano et al., 2021); VM carriers have an intermediate variant in enzyme activity, and may show greater diversity in behavior regulation (Mueller et al., 2014; Cha et al., 2022; Gafarov et al., 2021); MM genotype carriers are characterized by greater emotionality, impulsivity, instability, and increased risk of developing mental illnesses (Gafarov et al., 2021). Thus, the highest level of self-esteem in carriers of the CC genotype of the DRD2 gene and the heterozygous VV genotype of the COMT gene may be due to a balance between a higher level of dopaminergic activity, characteristic of the CC DRD2 genotype, and high COMT activity, contributing to an optimal level of dopamine metabolism. In turn, a reduced amount of receptor density (CT genotype of the DRD2 gene) in conjunction with a highly active COMT variant will yield the most significant reduction in dopaminergic transmission and the lowest self-esteem scores in a sample of co-dependent women. However, it should be noted that the genetic basis of self-esteem is extremely complex and multifaceted, and specific genes may only play a role in the context of other genetic and environmental factors. Further research in this area will help expand our understanding of the genetic mechanisms underlying self-esteem.

Conclusions

The study aimed to identify psychological and genetic predictors of the level of self-esteem of co-dependent women. The genes of the dopaminergic system were selected as candidate genes, namely the dopamine receptor gene of the second type DRD2 (polymorphic locus rs1800497) and the COMT enzyme gene (polymorphic

locus Val158Met). The obtained data allow us to conclude that the level of self-esteem significantly differs in carriers of different genotypes of DRD2 and COMT genes. At the same time, the highest level of self-esteem was observed in carriers of genotype CC of DRD2 gene and variant VV of COMT gene. The positive effect on the level of self-esteem has an increase in the level of life meaningfulness and a decrease in the tendency to unproductive "self-digging" (introspection).

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Appendix

Descriptive statistics on the sample: a study of self-esteem

		Mean	Standard deviation (Std, Deviation)	Shapiro-Wilk test (Shapiro-Wilk test)	P-value of Shapiro-Wilk
S scale	Group 1	18,234	4,216	0,922	< ,001
	Group 2	18,449	4,017	0,936	< ,001
	Group 3	21,163	3,042	0,903	< ,001
Self-esteem	Group 1	8,995	2,861	0,960	< ,001
	Group 2	9,191	2,540	0,970	0,036
	Group 3	11,000	2,250	0,945	0,002
Autosympathy	Group 1	9,378	2,349	0,939	< ,001
	Group 2	9,449	2,620	0,968	0,026
	Group 3	10,625	1,912	0,939	< ,001
Expected attitude from others	Group 1	8,707	1,750	0,872	< ,001
	Group 2	8,674	1,664	0,917	< ,001
	Group 3	9,325	1,167	0,812	< ,001
Self-interest	Group 1	6,702	1,450	0,792	< ,001
	Group 2	6,865	1,391	0,772	< ,001
	Group 3	7,313	0,976	0,709	< ,001
self-confidence	Group 1	5,005	1,620	0,922	< ,001
	Group 2	4,899	1,438	0,947	0,001
	Group 3	5,813	1,159	0,857	< ,001
attitude of others	Group 1	5,734	1,036	0,757	< ,001
	Group 2	5,708	1,014	0,859	< ,001
	Group 3	5,825	0,569	0,648	< ,001
self-acceptance	Group 1	5,165	1,548	0,892	< ,001
	Group 2	5,045	1,445	0,892	< ,001
	Group 3	5,525	1,125	0,854	< ,001
self-management	Group 1	4,101	1,294	0,942	< ,001
	Group 2	4,382	1,257	0,935	< ,001
	Group 3	4,775	1,158	0,865	< ,001

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		Mean	Standard deviation (Std, Deviation)	Shapiro-Wilk test (Shapiro-Wilk test)	P-value of Shapiro-Wilk
self-incrimination	Group 1	4,282	1,758	0,941	< ,001
	Group 2	4,079	1,835	0,952	0,002
	Group 3	3,587	1,733	0,932	< ,001
self-interest	Group 1	6,016	1,322	0,731	< ,001
	Group 2	5,989	1,394	0,727	< ,001
	Group 3	6,575	1,167	0,422	< ,001
self-understanding	Group 1	3,755	1,442	0,937	< ,001
	Group 2	3,888	1,563	0,944	< ,001
	Group 3	4,800	1,184	0,899	< ,001
Systemic reflection	Group 1	40,537	4,842	0,943	< ,001
	Group 2	39,674	4,835	0,966	0,019
	Group 3	38,8	5,522	0,966	0,03
Introspection	Group 1	23,569	5,766	0,983	0,024
	Group 2	24,775	4,97	0,965	0,016
	Group 3	19,313	5,046	0,978	0,173
Quasireflexion	Group 1	24,261	5,287	0,989	0,158
	Group 2	25,966	5,426	0,978	0,129
	Group 3	22,063	5,782	0,986	0,54
OW	Group 1	97,632	19,797	0,97	0,042
	Group 2	92,033	18,654	0,983	0,888
	Group 3	105,318	17,442	0,956	0,417
Objectives	Group 1	30,598	8,085	0,95	0,002
	Group 2	30,067	7,538	0,932	0,057
	Group 3	34,136	5,54	0,951	0,334
process	Group 1	27,368	5,889	0,976	0,102
	Group 2	25,7	5,621	0,953	0,208
	Group 3	29,682	4,989	0,934	0,15

		Mean	Standard deviation (Std, Deviation)	Shapiro-Wilk test (Shapiro-Wilk test)	P-value of Shapiro-Wilk
Result	Group 1	25,46	6,088	0,965	0,017
	Group 2	23,433	6,118	0,966	0,428
	Group 3	27,773	6,102	0,893	0,022
LK-YA	Group 1	20,023	5,272	0,958	0,006
	Group 2	18,367	4,824	0,948	0,147
	Group 3	21,773	3,816	0,958	0,455
LC-L	Group 1	29,276	7,337	0,974	0,079
	Group 2	27,933	6,313	0,978	0,78
	Group 3	31,545	6,537	0,969	0,696
The co-dependency scale (B, Winehold, J, Winehold),	Group 1	41,809	8,419	0,988	0,127
	Group 2	46,382	5,793	0,894	< ,001
		33,15	4,551	0,931	< ,001

Legend: Group 1 - Co-dependent (N= 188); Group 2 - High level of co-dependence in the control group (N= 89); Group 3 - Low and medium levels of co-dependence in the control group (N= 80)

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Conflict of Interest Information

The authors have no conflicts of interest to declare.

Executive Functions in Individuals with Long-term Dependence on Psychoactive Substances

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Abstract

Introduction. In this paper, the aim is to identify the role of executive functions (working memory and inhibitory control) in the formation of long-term dependence on psychoactive substances (SAW). **Methods.** 95 people in the control group (not using psychoactive substances) and 146 people of the experimental group who use psychoactive substances (SAW) were examined, among them 99 people with dependence on narcotic substances of different groups and 47 people with alcohol dependence syndrome. The experience of drug and alcohol use amounted to 5-20 years. The subjects filled out a questionnaire aimed at studying the duration of psychoactive substance use and the type of these substances; they performed the tasks of the test "Progressive Matrices" by J. Raven. The paradigms of "go/go" and «go/no-go» were used to assess inhibitory control. To describe the volume of working memory and its mechanisms (proactive interference and learning), the method of O. M. Razumnikova was used. The capabilities of the SPSS-21 program package were used, and regression and factor analyses were applied. **Results.** The data obtained as a result of factor and regression analysis indicate that people with a long experience of using both narcotic substances and alcohol had difficulties in performing the tasks on scales D and E of J. Raven's Progressive Matrices, which assess the most analytical and synthetic activities. At the same time, it was shown that it is the executive functions that allow people with long-term addiction to continue social activity at a fairly stable level. Such adaptive mechanisms were a high level of learning in working memory and formed an inhibitory control. **Discussion.** Executive functions have dual functions in relation to addiction: at late provocation of addiction they have a protective function preventing the emergence of addiction, but at very early formation of addiction (up to 12 years of age), gradually forming executive functions allow to maintain a stable social state against the background of substance use.

Keywords

Psychoactive substances, alcohol, executive function, go/go and go/no-go paradigm, working memory, inhibitory control

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Introduction

Addiction is the compulsive non-medical self-reported use of narcotic substances (Wise & Robble, 2020; Arkhipova et al., 2024). Use occurs despite the negative consequences that the person taking the drugs is aware of (Leshner, 1997). Negative consequences of drug use are informed in educational institutions of different levels, in the media. However, children and adolescents (the age at which addiction is most often formed - Marenko et al., 2024) rarely see negative consequences in their immediate environment, and the result of momentary use of psychoactive substances does not appear threatening at the beginning (Yang et al., 2022). This clarification is related to the results of studies in which animals pressing a lever for a cocaine reward simultaneously received an electric shock to the legs (Deroche-Gamonet et al., 2004) or heard a sound to which they had previously developed a pain reflex (Vanderschuren & Everitt, 2004), and despite the immediate painful reinforcement, the animals selected cocaine and pressed the lever. These findings reveal a profound internal mechanism behind addiction: the initiation of use is associated with pleasant feelings, and the consequences of addiction formation are so severe that even direct pain does not contribute to the cessation of addictive behavior.

Addictive psychoactive substances (ASP) affect the brain's reward system and the extracellular oscillations of the neurotransmitter dopamine involved. Dopamine is included in the modulation of the motivation system and also controls the release of glutamate; promoting long-term cellular modifications that either enhance or inhibit the effects of glutamate, affecting the activity of the reward system that governs human behavior (Wise & Robble, 2020). In experiments on animals in which dopamine stores were artificially depleted or the dopamine system was damaged, motor activity (although there was no impairment of the motor system) and motivation, including eating, were significantly reduced: the animal could starve to death in the presence of food (Ungerstedt, 1971; Stricker & Zigmond, 1976); learning of new conditioned reflexes was impaired; and responses to predictively relevant stimuli were stopped. Responses to meaningful stimuli are critical for life: predictive stimuli lead an animal, like a human, from one reward to another, directing behavior toward survival (Bolles, 1972). Current research supports the responsibility of the reward system in shaping addictive behavior

in general and substance dependence in particular (Morie & Potenza, 2021; Ceceli et al., 2022; Barendse et al., 2024). Humans are thought to have been familiar with opiates as early as the Neolithic period (Merlin, 2003), which are exogenous ligands of morphine receptors and function to some extent as endogenous ligands of β -endorphins, enkephalins, dynorphins and nociceptin/orphanin FQ. These opioid peptides, together with their cognate peptide receptors, are widely expressed in the nervous system and, in particular, in pathways that carry information about pain (Corder et al., 2018).

The deep psychophysiological roots of addiction formation do not imply a simple solution to the problem of addiction to psychoactive substances. Therefore, there is a large body of work aimed at studying the psychological features of addictive behavior in general.

Psychological factors that increase the likelihood of a person's dependence on surfactants are a high level of impulsive planning; low level of self-direction, which, according to the psychobiological model of personality S.R. Cloninger (Cloninger, 2008), reflects the lack of awareness of one's own capabilities and limitations; lack of purposefulness and responsibility, psychotraumatic childhood experience (Gubanova, Korzh, 2024).

One of the works described the social composition of psychoactive substance users in Russia. It was led by entrepreneurs (32%), workers were found in 23% of cases, unemployed - 20%, managers - 17%, pupils and students - 15%, housewives - 14%, servants - 11%, engineering and technical workers - 9%, mental labor workers - 8% (Aralovets, 2019). The lowest percentage of addiction among mental workers suggests that high intelligence is a protective mechanism that limits the possibility of addiction formation.

Degradation of personality, loss of social status, and even lethal outcome, especially at early onset of substance use, occur quite quickly (Aralovets, 2019). However, long-term dependence on surfactants is of particular interest with preservation of a sufficiently high social status and working capacity in the addict. This suggests the presence of some psychophysiological adaptation mechanisms that prevent the rapid destructive effect of psychoactive substances.

Currently, personality protective abilities are associated with executive functions, which are controlled by the most late in evolution and late maturing in the ontogenesis brain region, the prefrontal cortex (Nikolaeva et al., 2021; Ceceli et al., 2022). Executive functions refer to higher-order cognitive processes that play an important role in the development of self-regulation of behavior and thought operations (Roebbers, 2017). These processes include monitoring, managing, controlling, and adapting lower-level information processes such as encoding, storing, and retrieving information (Paige et al., 2024). The main executive functions are inhibitory control and working memory (Ede & Nobre, 2023).

Working memory is memory for intermediate stages of some process (Velichkovsky, 2016), which involves at least two mechanisms: proactive interference (Anderson & Hulbert, 2021) and learning during reproduction (Streb et al., 2016). Although the first mechanism impairs subsequent memorization, the second mechanism ensures its retention despite the presence of distractors (Razumnikova & Nikolaeva, 2019).

The role of executive functions in the formation of addiction is actively researched. Hildebrandt et al. (2021) found 359 articles on PubMed and Web of Science platforms in 2020 alone that in one way or another examined the relationship between inhibitory control and substance dependence. After analyzing the papers in depth, they noted that many studies support this relationship, but there are also a fair number of papers that are inconsistent with this conclusion. The authors found no explanation for this contradiction and noted the urgent need for further research.

At the same time, the authors emphasize both the diversity of approaches to assess executive function and the diversity of evaluated samples in the studies.

We thought it would be meaningful to examine people who have been using narcotic substances for quite a long time and have retained their jobs, sometimes in fairly well-paid prestigious jobs, because rapid degradation of personality has been described many times. The question arises: what can keep a person from rapid degradation while maintaining dependence on psychoactive substances?

We suggested that it is the executive functions that may be the protective factors preventing a person from becoming addicted at an early age, and it is the executive functions that may become an adaptive mechanism for the stability of addictive behavior; but if addiction occurred before the executive functions were formed, their further formation may lead to a situation of long-term substance use,

Purpose of the study: to identify the characteristics of executive functions in long-term (5-20 years) users of psychoactive substances (PAS).

Methods

Participants

The study was carried out in various **Alcoholics Anonymous and Narcotics Anonymous** societies.

People who had undergone rehabilitation in one in the hospitals of St. Petersburg and completed the necessary medications were selected for the study.

A total of 241 individuals were examined.

The **control** group included 95 people (volunteers who responded to the call for the study on the Internet) aged 34.7 ± 9.4 years (of whom 48% were women and 52% were men) who did not use psychoactive substances. To ensure homogeneity of the sample, study participants were selected into the control group according to the age of the study participants who were substance users.

The experimental group consisted of 146 people aged 35.6 ± 7.8 years (39% women and 61% men) with a long (5 to 20 years) experience of drug and alcohol use. Among them:

- 47 people addicted to alcohol;
- 99 from drugs;
- 4 people in the sample had their first use at age 6 (2 first-time drug users, 2 first-time alcohol users).

The individuals studied used various surfactants, often in combination, but the impact of these differences was not evaluated in this study, including 25 opioid users, 31 stimulant users, and 43 multiple users. When comparing the characteristics of executive functions between the groups in the analysis of variance, no differences were found between the groups. The criterion for inclusion in the experimental group was the ICD-10 diagnosis of "addiction syndrome" made by a hospital physician.

Table 1

Distribution of participants by duration of substance use, $M \pm SD$

Group	Duration of use, years
All surfactant group	$17,4 \pm 8,1$
Subgroups	
Drugs	$16,3 \pm 7,6$
Alcohol	$19,8 \pm 8,8$
Subgroups of drug users	
Opioids	$20,3 \pm 5,4$
Stimulants	$14,2 \pm 8,0$
Several drugs	$15,3 \pm 8,0$

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Table 1 shows that the average duration of substance use in all groups was 14–20 years, which confirms the long-term nature of addiction.

As can be seen in Table 2, the early onset of drug use is correlated with the age of 6–12 years and the later onset after the age of 25 years.

Table 2

Distribution of participants with different ages of initiation of drug use by duration of drug use, $M \pm SD$

Age of onset of use, years	Age of use mean value, years	Number of participants
6 – 12	21,7	10
13 – 17	17,2	56
18 – 20	13,4	13
21 – 25	15,1	13
старше 25	8,1	7

Table 3

Distribution of participants with different ages of alcohol initiation by duration of alcohol use, $M \pm SD$

Age of onset of use, years	Age of use, mean value, years	Number of participants
6 – 12	21,0	6
13 – 17	23,9	18
18 – 20	19,6	10
21 – 25	19,7	6
старше 25	8,7	7

The distribution of participants who use alcohol by age of onset and duration of use is consistent with that of participants who use drugs. The most likely time for initiation of substance use is in adolescence.

It should be emphasized that the sample included people who use substances but nevertheless maintain their social status. Table 4 shows the distribution of study participants by education level.

Table 4

Comparison of the educational level in study participants of different groups and subgroups, N

Group	Academic degree	Higher	Secondary specialty	Average
control	2	60	22	11
all surfactant group	2	36*	63*	45*
Subgroups				
drugs	1	20*	46*	36*
alcohol	1	16*	19*	11*
Subgroup of drug users				
opioids	0	4*	14**	7*
stimulants	1	8*	13	9
multiple surfactants	0	8*	17*	18

Note: * - difference between the participants of the indicators of the control group and the indicators of the study participants using surfactant, with significance level $p < 0.05$, ** - $p \leq 0.01$ (Mann-Whitney test).

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As can be seen from Table 4, higher education is more common in the group of nonusers, while people with specialized secondary education predominate among substance users. However, science candidates are equally common in all groups. This emphasizes the fact that there is no social degradation among study participants. All of them had a permanent job.

Informed consents were obtained from all subjects to participate in the study.

Methodic

All subjects completed a questionnaire aimed at examining the duration of substance use.

The studies were conducted face-to-face and individually.

Among executive functions, inhibitory control and working memory were chosen because there are currently reliable tools to study them (Reichl et al., 2023). To assess inhibitory control, the "go/go" and "go/no-go" paradigms were used (Razumnikova and Nikolaeva, 2021). In the first case, the subject had to respond by pressing a button on the computer keyboard when any stimulus appeared on the screen, while in the second case there was an instruction not to respond to certain stimuli, the response to which had already been developed in the first case (Krivoshchekov et al., 2022).

In a technique aimed at assessing working memory, the same set of stimuli was presented in three series in different sequences. They were required to select a stimulus on the screen that had not been selected before. If an error was made, the next series was started. The number of correctly memorized stimuli was counted. Interference was assessed by a decrease in the number of reproduced stimuli in the subsequent series, while learning was assessed, on the contrary, by an increase in the number of memorized stimuli in the next series (Razumnikova, Nikolaeva, 2019).

In addition, J. Raven's (2002) Progressive Matrices test was used to assess nonverbal intelligence. This test was used to show that the intelligence of all participants is within the normal range, and therefore the differences in executive functions between substance dependent and nondependent participants are not determined by reduced intelligence as a consequence of substance use.

Data processing

All data were entered into a table and processed using the SPSS-21 program package. Data were assessed for normality using the Kolmogorov-Smirnov test, and factor and regression analyses were performed.

Ethical review

The work complies with the ethical standards of the Declaration of Helsinki (minutes of the meeting of the local ethics committee of the neurological clinic "Prognosis" No. 10 of 13.11.2020).

Results

After entering all results, a qualitative analysis was performed that included comparison of the mean values of all the parameters studied. It did not reveal significant differences in the level of executive functions between the control and the two experimental groups. The absence of such differences was due to the large variation of the data in the groups composed of alcohol and drug addicts.

It should be emphasized that all subjects had intelligence levels within the normal range, although differences were found for individual scales. These differences were further revealed in other types of analysis presented below.

The results of the factor analysis are presented in Tables 5 and 6. After excluding variables that received a small weight (less than 0.4), a four-factor solution with a Kaiser-Meyer-Olkin sampling adequacy of 0.611 was obtained, which allowed us to accept this variant for consideration (the percentage of explained variance was 64.4%). All of this can be found in Table 5.

Table 5

Kaiser-Meyer Olkin criterion and Bartlett's criterion

Kaiser-Meyer-Olkin adequacy criterion		0,611
Bartlett's sphericity test	Approximated chi-squared	375,445
	Significance level	0,000

Table 6 summarizes the components of factor analysis.

Table 6

Rotated component matrix

Variables	Components		
	1	2	3
Attitude towards addiction: 0 - none, 1 - alcohol, 2 - drugs	0,857	-0,255	0,016
Age of first use	0,845	-0,284	0,053

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Variables	Components		
	1	2	3
Number of items played back in the first playback in the working memory	-0,525	-0,050	-0,002
Number of items played back in the second playback in the working memory	-0,067	0,827	0,057
Number of items played back in the third playback in the working memory	-0,219	0,633	-0,105
Number of errors in go/no-go series	0,200	0,207	0,826
Number of passes in go/no-go series	-0,176	-0,351	0,749

Extraction method: principal component method

Rotation method: Varimax with Kaiser normalization

The rotation occurred in 5 iterations

According to Table 6, the first factor (percentage of explained variance 26.4%) included, with high weights, the attitude toward the group of alcohol and substance dependents, the age of first use of alcohol or a substance, and the amount of first recall in working memory. These results suggest that the lower the age of first use, the lower the volume of first recall in the working memory test, the higher the likelihood of being in the alcohol or substance-dependent group.

The second component (20.0% of the explained variance) includes the other two reproductions in working memory. The third factor (18.0% of explained variance) includes both parameters related to inhibitory control.

Our data testify to the already known phenomenon, according to which the age of first use plays a major role in the formation of a person's dependence on alcohol or drugs. It is important that first reproduction in working memory is impaired. However,

subsequent reproductions in working memory do not distinguish between groups of addicts and independents of certain substances. This means that in addicts the mechanism of learning in working memory is active, which makes it possible to compensate for the first failure in reproduction and compensate for the lack of involvement in the task.

Next, a linear stepwise regression analysis with all included variables is presented, where the dependent variable was the group of subjects using alcohol or drugs, is presented next (Table 7).

Table 7
Influence of independent variables on the dependent variable "group of persons using alcohol"

Independent variables	R ²	Durbin-Watson criterion
Age of first use of alcohol	R=0,908	
E scale of the J. Raven test, errors in the go/no-go test,	0,8235	1,925
The amount of the first playback in working memory	p=0,000	

Regression analysis produced a model in which four parameters predetermine whether a person falls into the long-term alcohol dependence: the age of first alcohol use ($\beta=0.679$), the number of scores on the J scale of the J. Raven test ($\beta=-0.202$), the number of errors in the go / no-go series ($\beta=-0.101$), and the volume of first playback in working memory ($\beta=-0.155$). This model explains 83.3% of the variation in the dependent variable "group of people who drink alcohol" and is highly significant. It can be used because the Durbin-Watson criterion is 1.925. The beta coefficient is negative for all parameters except the duration of alcohol use. The probability of becoming an alcoholic with a long history of drinking is determined by the early age of onset of drinking, a decrease in the success rate of one of the most difficult series in the J. Raven test, which requires effective analytical activity and deterioration of executive functions (inhibitory control and working memory). It should be emphasized that inhibitory control has the minimum weight in relation to another component of executive functions, working memory, while early onset of addiction has the maximum weight among all parameters.

Table 8 presents a model of the factors that predetermine the likelihood that an individual is a substance-dependent person.

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Table 8

Effect of independent variables on the dependent variable "group of drug users"

Independent variables	R ²	Durbin-Watson criterion
R=0,923		
Duration of substance use,		
E D scale of the J. Raven test,	0,852	1,749
errors in the test	p=0,000	

The model obtained in the regression analysis explains 85.7% of the variation in the dependent variable. In it, the probability of falling into the group of drug users is also determined by the duration of surfactant use ($\beta=0.842$), the level of task performance on scales E ($\beta=-0.088$) and D ($\beta=-0.073$), the number of errors in the test evaluating inhibitory control ($\beta=-0.077$). The beta coefficient is negative for all values except the duration of use. Consequently, the lower the results of the D and E scales of the J. Raven's test, the more the inhibitory control process is disturbed, the more likely a person falls into the group of substance dependents. However, it should be emphasized that the maximum weight in this model belongs to the duration of the use of substances.

Discussion

The need to find mechanisms to counteract the emergence of addiction is extremely important today (Arkhipova, 2024; Gubanova, Korzh, 2024). The specificity of the sample under study consists in the fact that it includes people who have been addicted to surfactants at different times, but at the same time have been functioning in society for a long time (from 5 years to 20 years) with retention of a job. Many people addicted to surfactants degrade rather quickly and often die quite early (Aralovets, 2019; Nikolaeva et al., 2021). All this suggests that these people have a compensatory mechanism that allows them to resist degradation.

Our data are fully consistent with the numerous previous findings that the earlier a person starts surfactant use, the more likely he or she is to fall into the group of addicts (Marsenko et al., 2024; Roschina, Belova, 2024; Formánek et al., 2022). At the same time, the literature presents extremely contradictory data regarding the level of intelligence

and efficiency of executive functions (Hildebrandt et al., 2021; Morie, Potenza, 2021; Reichl et al., 2023).

We have shown that people with long-term substance use have significantly reduced more complex thinking processes, i.e. the ability to analytical and synthetic activity (scales D and E of the J. Raven's test) against the background of no pronounced change in intelligence. These people can perform quite simple intellectual operations, but problems with synthesis and analysis become a prognostic factor of belonging to the group of addicts.

We did not see any pronounced changes in inhibitory control in the group as a whole, which can be explained by a compensatory mechanism that consists of slower performance of all tasks by the substance-dependent participants of the study compared to those who were not dependent. Moreover, it is possible to assume that the absence of a pronounced decrease in inhibitory control allows these subjects to use alcohol and surfactant use, thus preserving their social status.

It is known that working memory is more affected in alcoholism (Peshkovskaya, 2023; Powell et al., 2024), while in drug use, intellectual impairments are more pronounced (Mistler et al., 2021), which is confirmed by the results of the regression analysis. Addicts are quite easy to cope with simple intellectual tasks, so they can stay for a long time in jobs where routine identical daily activities take place. The addicts in our sample do have a reduced first replay, but later, based on the learning mechanism in working memory, they show consistently high volume in the second and third replays, reflecting the activation of a learning mechanism (Streb et al., 2016) that counteracts proactive interference (Anderson and Hulbert, 2021). Thus, it is the ability to overcome the difficulties that arise in the process of memorizing information that allows these people to exist in society quite effectively while using surfactants.

Perhaps, in the case of long-term addiction to psychoactive substances (in our sample there were such people, and it is known that most addicted people die quite early - Pepe et al., 2023), even with a decrease in the functioning of intellectual operations of synthesis and analysis, a more dosed use of surfactants is developed due to adaptation (Mistler et al., 2021), the mechanisms of which are learning in working memory, which allows to overcome the forgetting mechanism, and some level of inhibitory control, which is formed sufficiently to limit the use of psychoactive substances (Mistler et al., 2021).

These findings extend the theoretical constructs of S.R. Cloninger (Cloninger, 2008), who suggested that substance use is associated with decreased awareness of one's behavior. They show how behaviorally aware individuals can continue self-destructive behaviors for many years, relying on cognitive control mechanisms.

Conclusion

Our data show that people with a long experience (up to 20 years and more) of substance use have lower scores on the most difficult scales of the J. Raven test of nonverbal intelligence - scales D and E. At the same time, they develop compensatory mechanisms that allow them to maintain a stable social position for a long time. At the same time, they develop compensatory mechanisms that allow them to maintain a stable social position for a long time. Such mechanisms are formed as inhibitory control and learning mechanism in working memory. Consequently, executive functions in the absence of early provocation of substance use will be a protective factor for the initiation of substance use. But if provocation occurs, then in the case of gradual addiction, the emerging executive functions can become an adaptive mechanism that keeps addicts in a stable social status for a long time.

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The structure of emotional well-being of schoolchildren

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Abstract

Introduction. At the current stage of development of the education system, the issues of formation and preservation of emotional well-being of schoolchildren are becoming especially important. The focus of this article is the definition of the structure of schoolchildren's emotional well-being and the identification of the peculiarities of the interrelation of its components, including separately by groups, boys and girls. **Methods.** The study was carried out in Yekaterinburg schools. It involved 700 schoolchildren of 5-9 grades. Of them - 402 boys and 298 girls. The following psychodiagnostic tools were used: the technique "Scales of positive and negative affect" (E.N. Osin, 2012); the questionnaire "Mental stability" (Clough, Earle, & Sewell, 2002, adapted by Malykh S.B., Ismatullina V.I., Kolyasnikov P.V., Lobaskova M.M.); questionnaire "Multidimensional scale of life satisfaction of schoolchildren" (E.S. Hübner, 1994, adaptation of Sychev O.A., Gordeeva T.O., Lunkina M.V., Osin E.N., Sidneva A.N.); questionnaire "Strengths and weaknesses" (Goodman R., 2001). For statistical data processing, correlation analysis using Spearman's method with correction for multiple comparisons (Hill's method) was used; exploratory factor analysis with oblique rotation (oblimin) using the MINRES method. **Results.** It was found that the structure of emotional well-being of schoolchildren is represented by three components - emotional, cognitive, and destructive - and has some gender peculiarities. The structure of girls' emotional well-being correlates with the general structure, and the structure of boys' emotional well-being has some differences and is formed by the cognitive component, negative emotional component and positive emotional component. **Discussion.** For the first time, the structure of emotional well-being was considered not

as a whole sample but by groups - boys and girls. The ideas obtained expand the available in science ideas about the phenomenon of emotional well-being. The results of the study can be used to develop psychological support programs for schoolchildren with a focus on preserving their emotional well-being.

Keywords

well-being, emotional well-being, emotional well-being structure, students, positive affect, negative affect, school satisfaction

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Introduction

In recent decades, the school education system has undergone significant changes. In the new conditions being formed, the requirements both for the teacher and for the student are changing. The basic education becomes more and more oriented not only to the formation of subject knowledge and mastery of general cultural competencies, but also to the formation of a holistic and well-being personality. In this context, a special role is assigned to the formation of emotional well-being, as it is fundamental in the formation of knowledge and competencies, as the well as building of communication with all subjects of the educational process.

It should be noted that the educational process and the educational environment are related to the emotional state of the student and can both contribute to the manifestation of positive emotions, positive self-esteem, high motivation for learning (Dementieva et al., 2021) and lead to frustration, disappointment, formation of negative perceptions about themselves and the learning process (Ivanova, Stepanova, 2024). Based on this, we can say that emotional well-being is a phenomenon formed and manifested in the educational process and environment. In this regard, it is relevant to determine the understanding of its essence and content.

Content and structure of the phenomenon of emotional well-being

Despite the fact that the phenomenon of emotional well-being is actively studied in psychology, to date there is no unified and unambiguous idea of its content and structure.

Analyzing the data available today in psychological science, we can distinguish the following key ideas about the content of emotional well-being: as a balance of positive and negative affect, with the emphasis on the fact that the more positive affect a person experiences, the greater his or her quality of life (Bradburn, 2019); as the ability and skill to express their emotions and the success of self-regulation of a person (Nikulina, 2008); as a set of emotional comfort and self-relationship (Pankova, 2011); as a positive emotional state of the individual (Pankova, 2011); as a positive emotional state of the person (Pankova, 2011); as a positive emotional state of the person (Pankova, 2011).

Summarizing the available ideas on the content of emotional well-being, we can highlight a number of common points. Almost all researchers consider this phenomenon from the position of a positive emotional state. In this regard, it is important to note that any emotional state always has time limits in its manifestation, so the phenomenon of "emotional well-being" is not static, and its manifestation can be influenced by various factors (both external and internal). However, it is important to note that each researcher emphasizes different aspects and that the content of this phenomenon includes:

- a set of characteristics of the emotional state, reflecting satisfaction, comfort, etc.;
- the ability to manage emotions, emotional self-regulation;

The fulfillment of needs is reflected in relationships with the world.

It should be noted that unity in the representation of structural components (both in quantity and in their qualitative content) is also currently lacking. We can distinguish the following representations that describe the components of emotional well-being and present its structure.

S. Lubomirski and H. Lepper describe emotional well-being as a phenomenon consisting of three components, namely, positive affect, negative affect (i.e., affective appraisals), and life satisfaction (i.e., cognitive appraisals) (Lyubomirsky & Lepper, 1999).

S.C. Feller and colleagues, based on the position that emotional well-being is an umbrella concept, include the following components in its structure: positive emotions and mood, relative absence of negative emotions, moods and states (e.g., stress, sadness, loneliness); sense of meaning and purpose; quality of life; life satisfaction; satisfaction with life; satisfaction with other areas of life (e.g., job satisfaction, relationship satisfaction) (Feller et al., 1999).

Y.B. Grigorova distinguishes two components of emotional well-being - general, including the emotional background of the personality (predominance of the experience of happiness or anxiety) and differential, formed by life satisfaction (satisfaction with work, satisfaction with relations with others, satisfaction with the state, satisfaction with one's position, etc.) (Grigorova, 2019).

T. Mayr and M. Ulich proposed a structure of social-emotional well-being consisting of the following components: rapport/social engagement; self-control/thoughtfulness; self-affirmation; emotional stability/ coping with stressful situations; task orientation; and enjoyment of exploration (Mayr & Ulich, 2009).

S.M. Lamers and colleagues, based on the views of E. Diener presents emotional well-being as consisting of an emotional component that emphasizes positive emotions, such as joy and happiness, and a cognitive component that includes the assessment of life satisfaction. However, the authors note that emotional well-being can include not only positive emotions, but also dispositions, such as optimism and a sense of humor and other positive psychological constructs (Lamers et al., 2012).

O.A. Eliseeva described the structure of emotional well-being of adolescents in correlation with different levels of safety of the educational environment. The structure of emotional well-being of adolescents in an educational environment with a high level of safety is formed by three elements: "Emotional", reflecting the emotional sphere of adolescents, "Cognitive", which summarizes the cognitive aspects of well-being, and "Activity", which includes one variable - the activity of the subject itself (Eliseeva, 2011).

T.V. Arkhireeva suggests a slightly different structure of emotional well-being, considering it on the example of a junior schoolchild. According to the author, it is made up of two components. The first is emotional, consisting of positive emotions, and the second is cognitive and evaluative, consisting of satisfaction with relationships with parents, teacher, and peers; satisfaction with success in learning activities; assessment of the ability to organize and manage their lives; optimism in assessing the prospects of future life (Arkhireeva, 2017).

I.E. Belyakova, M.A. Kecherukova present emotional well-being as physical, emotional, financial, social, and professional aspects of personality realization (Belyakova & Kecherukova, 2022).

E. Langeland considers the structure of this phenomenon as consisting of the experience of happiness, pleasant emotions, and good feelings, manifestation of emotional vitality (Langeland, 2023).

E. A. Iovino proposes to consider the structure of emotional well-being from the perspective of multiple dimensions that reflect how a person feels in the moment, in general, and in relation to life (Iovino et al., 2021).

Two components in the structure of emotional well-being, which are found in one form or another in all authors, are emotional (positive and negative affect) and cognitive (satisfaction with various spheres of life). However, it should be noted that the structure is not limited to these two components; the authors also identify other components, self-regulation mechanisms, activity, life goals, dispositions of control and optimism, etc., which emphasizes the complexity and ambiguity of this phenomenon.

Emotional well-being of schoolchildren

It is important to note that the specific content of these components reflects, among other things, the specificity of age. If we consider the structure of emotional well-being in relation to the school age, it will differ from an adult by its content, first of all, in the cognitive component, because the spheres of life of a schoolchild are different from an adult.

At the same time, given the specifics of school age (the main focus is on learning activities and age formation), it can be assumed that the structure of emotional well-being of a schoolchild, along with positive components (prevalence of positive emotions, psychological stability, self-regulation, etc.), may include elements that hinder emotional well-being, such as the presence of psychological and emotional problems manifested in behavior and relationships with peers, teachers, and parents (Choi, 2018).

Emotional well-being of a schoolchild is understood by us as a stable emotional and positive state of a child in the educational environment, based on the satisfaction of age-appropriate needs, awareness of experiencing one's own emotions, and possession of emotional regulation skills (Pecherkina et al., 2023). Accordingly, its structure consists of the emotional component (includes positive and negative affect, mental stability), cognitive component (includes satisfaction with such spheres as school, peers, teachers, and family). Given the positive orientation of the consideration of emotional well-being, we can assume that its structure should lack components with a negative orientation.

It is important to note that emotional well-being may have gender differences. Research suggests that, for example, girls have higher levels of neuroticism during adolescence than boys. Furthermore, neuroticism peaks in girls in this age period when considered in comparison to all age periods (Soto et al., 2011). Also, girls have higher emotional abilities, while boys have higher emotional self-esteem (D'Amico & Geraci, 2022). Furthermore, girls are characterized by higher levels of emotional preoccupation and personal distress, difficulty recognizing feelings, and less orientation to the outside world than boys (Trentini et al., 2022).

Purpose and hypotheses of the study

Emotional well-being is a complex phenomenon, whose structure is represented by several components. The above-mentioned actualizes the following problematic questions: What components are included in the structure of emotional well-being of schoolchildren? What is the content of these structural components? Are there differences in the structure of emotional well-being between boys and girls?

The purpose of this study is to determine the structure of emotional well-being of schoolchildren and to identify the peculiarities of the interrelation of its components taking into account gender specifics.

The hypothesis of the study was the assumption that the emotional well-being of schoolchildren is made up of emotional and cognitive components and has gender specificity.

Methods

Participants

The study involved 700 schoolchildren aged 5-9 in the city of Yekaterinburg (402 boys, 298 girls). Participants were informed about the objectives of the study, and participation was voluntary.

Methods

The following techniques were used to conduct the empirical study:

- Positive and Negative Affect Scales (SPANAS) methodology (E.N. Osin, 2012). It assesses the ratio of positive and negative emotions and contains the scales «Positive affect», «Negative affect».
- The Mental Toughness Questionnaire (MTQ10) (Clough, Earle, & Sewell, 2002, adaptation of Malykh S.B., Ismatullina V.I., Kolyasnikov P.V., Lobaskova M.M., 2021), assesses the mental toughness of personality.
- The questionnaire "Multidimensional Scale of Life Satisfaction of Schoolchildren" (MSLS/SHUJI) (E.S. Hübner, 1994, adaptation of Sychev O.A., Gordeeva T.O., Lunkina M.V., Osin E.N., Sidneva A.N., 2018). It is aimed at determining life satisfaction of a school student and contains the scales: "Family", "School", "Teacher", "Myself", "Friends".
- Strengths and Weaknesses Questionnaire (Goodman R., 2001, adapted from E. Slobodskaya, M. Rosenbush, N. Bodiagina, S. Gracheva, G. Knyazeva, V. Gafurov, 2020). Assesses the impact of the child's existing problems on his/her social functioning, as well as social activity as a positive trait. Contains the scales "Prosocial behavior", "Hyperactivity", "Emotional symptoms", "Behavior problems", "Problems with peers", "Total number of problems".

Data analysis

The Shapiro-Wilk test was conducted to test variables for normality of distribution; Spearman's correlation analysis with multiple comparisons correction (Hill method) was used to identify relationships between emotional well-being indicators; exploratory factor analysis with oblique rotation (oblimin) using the MINRES method was conducted to determine the structure of emotional well-being.

Results

Before conducting factor analysis, we checked for normality of distribution using the Shapiro-Wilk test for the variables, which, according to our assumption, should form factors in the structure of schoolchildren's emotional well-being. The results are presented in Table 1.

Table 1

Shapiro-Wilk test results

Scale	Minimum	Maximum	Average	Standby off.	Shapiro-Wilk criterion	p-level of significance
Positive affect (PA)	6	50	17,538	8,91	0,915	0,000
Negative affect (NA)	6	50	30,296	10,84	0,971	0,000
Emotional symptoms	0	10	2,862	2,67	0,894	0,000
Family	9	30	23,146	4,78	0,938	0,000
Friends	6	30	24,48	5,13	0,896	0,000
School	6	30	20,701	5,50	0,980	0,000
I'll do it myself	7	30	22,525	5,51	0,949	0,000
Teachers	6	30	21,575	5,61	0,965	0,000
Hyperactivity	0	9	3,123	2,28	0,944	0,000
Prosocial behavior	0	10	7,148	2,27	0,929	0,000
Mental toughness	1	10	6,763	1,39	0,970	0,000
Behavior problems	0	9	2,483	1,90	0,889	0,000
Peer problems	0	8	2,93	1,97	0,944	0,000

All the variables we study do not follow a normal distribution, based on this, non-parametric methods will be used in the study.

At the first stage, to determine the indicators relationship between the studied that form the emotional well-being of schoolchildren, a correlation analysis using Spearman's method was conducted. The results are presented in Table 2.

Table 2

Results of the correlation analysis of indicators of emotional well-being of schoolchildren

	6	7	8	9	10	11	12	13
1. Family	0.17***	-0.37*	0.22*	0.33*	-0.31*	-0.37*	-0.25*	-0.27*
2. Friends	0.19***	-0.44*	0.18*	0.38*	-0.38*	-0.37*	-0.27*	-0.3*
3. school	0.19***	-0.40*	0.21*	0.41*	-0.37*	-0.31*	-0.26*	-0.24*
4. Myself	0.32**	-0.41*	0.23*	0.35*	-0.35*	-0.43*	-0.25*	-0.4*
5. Teachers	0.39***	-0.31***	0.21*	0.36*	-0.32*	-0.4*	-0.29*	-0.48*
6. Positive affect (PA)	1	0.08	0.21*	0.38*	-0.35*	-0.33*	-0.26*	-0.36*
7. Negative affect (NA)		1	-0.03	-0.19*	0.44*	0.60*	0.44*	0.34*
8. Mental stability			1	0.23*	-0.15*	-0.09	-0.08	-0.1
9. Prosocial behavior				1	-0.42*	-0.24*	-0.38*	-0.41*
10. Hyperactivity					1	0.57*	0.57*	0.4*
11. Emotional symptoms						1	0.56*	0.53*
12. Behavior problems							1	0.5*
13. Problems with peers								1

Note. * correlation is significant at the 0.05 level, ** correlation is significant at the 0.01 level, *** correlation is significant at the 0.001 level

According to the results of the correlation analysis, positive affect was found to have a direct connection with all spheres of life satisfaction: "Family" ($r=0.17$; $p<0.001$), "Friends" ($r = 0.19$; $p<0.001$), "School" ($r= 0.19$; $p<0.001$), "Myself" ($r= 0.32$; $p<0.01$), "Teachers" ($r = 0.39$; $p<0.001$). Negative affect has an inverse relationship with these same domains of life satisfaction ("Family" ($r=0.37$; $p<0.05$), "Friends" ($r= 0.44$; $p<0.05$), "School" ($r= 0.40$; $p<0.001$), "Myself" ($r= 0.41$; $p<0.05$), "Teachers" ($r= 0.31$; $p<0.001$)). Mental stability was

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related to all domains of life satisfaction and positive affect ("Family" ($r=0.22$; $p<0.05$), "Friends" ($r=0.18$; $p<0.05$), "School" ($r=0.21$; $p<0.05$), "Myself" ($r=0.23$; $p<0.05$), "Teachers" ($r=0.21$; $p<0.05$), "Positive affect" ($r=0.21$; $p<0.05$)), with no association with negative affect. Prosocial behavior also has a direct relationship with all areas of life satisfaction ($r=0.33$ to 0.41 ; $p<0.05$), as well as positive affect ($r=0.38$; $p<0.05$), mental stability ($r=0.23$; $p<0.05$) and an inverse relationship with negative affect ($r=-0.19$; $p<0.05$). Problems such as hyperactivity, emotional symptoms, behavior problems, and peer problems have an inverse relationship with all domains of life satisfaction ($r=-0.24$ to -0.43 ; $p<0.05$), positive affect ($r=-0.25$ to -0.36 ; $p<0.05$), and a direct relationship with negative affect ($r=0.34$ to 0.60 ; $p<0.05$).

The result obtained indicates that the indicators we have identified are related to each other. Therefore, they can form a factor model that will represent the structure of emotional well-being of schoolchildren.

The data for the scales were tested using the Kaiser-Meyer-Olkin test to assess the suitability of the scales for factor analysis. The value of the Kaiser-Meyer-Olkin test was 0.84, which is a good indicator to perform factor analysis between the scales. Furthermore, the suitability of the factor analysis was confirmed by the results of the calculation of Bartlett's criterion of sphericity with $\chi^2 = 620.77$, $df = 78$, $p < 0.001$. Parallel analysis was used to determine the number of factors, which turned out to be equal to 3.

In the second step, an exploratory factor analysis with oblique rotation (oblimin) was performed using the MINRES method. The results are presented in Table 3.

Table 3

Results of exploratory factor analysis of schoolchildren's emotional well-being

	Factor 1	Factor 2	Factor 3
Family	0,73	-0,04	-0,01
School	0,79	-0,02	-0,07
Teachers	0,89	0,10	-0,06
I'll do it myself	0,82	-0,02	0,06

	Factor 1	Factor 2	Factor 3
Friends	0,65	-0,10	0,21
Positive affect	0,17	-0,20	0,63
Negative affect	-0,19	0,65	0,49
Mental toughness	0,30	0,05	0,21
Prosocial behavior	0,35	-0,16	0,38
Hyperactivity	-0,09	0,63	-0,12
Emotional symptoms	-0,05	0,79	0,05
Behavior problems	0,11	0,78	-0,14
Peer problems	-0,08	0,57	-0,26
Total load	3,51	2,64	1,01
Percentage of variability explained	0,27	0,20	0,08
Share of explained variability, cumulative	0,27	0,47	0,55

The first factor is formed by the following variables: satisfaction with teacher (0.89), self (0.82), school (0.79), family (0.73), friends (0.65), and mental stability (0.3). The factor shows the relationship between satisfaction with different areas of one's own life, which relate to both the learning process, close relationships, and self-image, and the ability to resist negative environmental influences. The factor was named the "Cognitive Component".

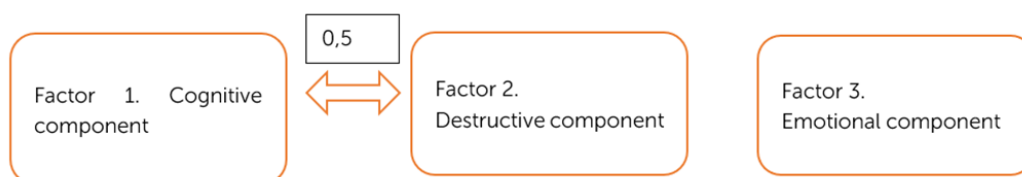
The next factor is formed by variables representing problems, namely emotional symptoms (0.79), behavior problems (0.78), hyperactivity (0.63), peer problems (0.57) and negative affect (0.65). The factor reflects the relationship between schoolchildren's weaknesses manifested in the set of problems they experience. These problems in schoolchildren are expressed in mismatch of their emotional reactions and the situation, manifestation of difficulties with self-control, building relationships with other children, inadequate activity, difficulties with concentration, as well as manifestation of negative emotions such as depression, anxiety, nervousness, etc. This factor is called the «destructive component".

The last factor is formed by positive affect (0.63), negative affect (0.49), and prosocial behavior (0.38). The factor reflects the relationship of emotional experiences with prosocial behavior. The factor represents a combination of positive emotions such as passion, joy, interest, and negative emotions such as irritability, shame, anxiety, and includes socially acceptable behavior related to the child's compliance with rules and norms and the ability to cooperate with others. Positive and negative emotions in a school child can be assumed to be related to socially approved and acceptable behavior, so the requirement to follow certain social norms can cause negative feelings in the case of inconsistency or inaccessibility of their implementation. The factor was named the "Emotional component".

It is important to note that the cognitive and destructive components are interrelated (Figure 1). The more pronounced are the variables of the "Destructive component" factor, the less pronounced are the variables of the "Cognitive component" factor. This indicates that the presence of negative experiences in schoolchildren leads to a decrease in satisfaction in different spheres of life, so the presence of problems can be considered as a factor that prevents a schoolchild from being satisfied. At the same time, no connection was established with the emotional component; therefore, the experience of satisfaction is not connected with the experiences caused by prosocial activity.

Figure 1

Relationship of structural components of schoolchildren's emotional well-being



Since the emotional sphere of boys and girls according to the research data has some differences, we assumed that the structure of emotional well-being in them may also have differences. For this purpose, we constructed exploratory models of emotional well-being for 2 groups, boys and girls.

Let us begin by analyzing the obtained factor model of emotional well-being in the group of boys.

Data for the scales were tested using the Kaiser-Meyer-Olkin test to assess the adequacy of the scales for factor analysis. The Kaiser-Meyer-Olkin test was 0.85, which is a good indicator for performing factor analysis between the scales. Furthermore, the adequacy of the factor analysis was confirmed by the results of the calculation of Bartlett's criterion of sphericity with $\chi^2 = 666.87$, $df = 78$, $p < 0.001$. Parallel analysis was used to determine the number of factors, which turned out to be equal to 3.

Exploratory factor analysis with oblique rotation (oblimin) was performed using the MINRES method (Table 4).

Table 4
The structure of emotional well-being of boys

	Factor 1	Factor 2	Factor 3
Family	0,78	-0,06	0,08
Friends	0,79	-0,05	-0,08
School	0,88	0,07	-0,15
I'll do it myself	0,79	-0,06	0,14
Teachers	0,63	-0,06	0,35
Positive affect (PA)	0,12	-0,01	0,76
Negative affect (NA)	-0,17	0,85	0,37
Mental toughness	0,36	0,12	0,1
Prosocial behavior	0,29	-0,19	0,26
Hyperactivity	-0,06	0,62	-0,17
Emotional symptoms	-0,13	0,67	-0,13
Behavior problems	0,15	0,75	-0,27
Peer problems	-0,07	0,47	-0,4

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	Factor 1	Factor 2	Factor 3
Load	3,53	2,62	1,33
Part of the explained variance	0,27	0,2	0,1
The part of explained variance accumulated by	0,27	0,47	0,58

The model obtained for boys has some differences compared to the general model. The first factor is formed by the variables "satisfaction with school" (0.88), "satisfaction with self" (0.79), "satisfaction with friends" (0.79), "satisfaction with family" (0.78), "satisfaction with teacher" (0.63), and "mental stability" (0.36). The factor obtained by analogy with the general model represents the "Cognitive component" of emotional well-being.

The next factor contains the variables of problems faced by the schoolchild, namely: "negative affect" (0.85), "behavior problems" (0.75), "emotional symptoms" (0.67), "hyperactivity" (0.62), "peer problems" (0.47) and "negative affect" (0.5). The factor combines the negative experiences of the pupil. It can be assumed that the pupil experiences problems because of expressed negative experiences such as anxiety, shame, fear, etc. The factor was named the «negative emotional component».

The third factor is formed by positive affect (0.76), negative affect (0.37) and teacher satisfaction (0.35). This factor reflects the emotional reactions that are related to teacher satisfaction. This result indicates that the relationship with the teacher plays a significant role in shaping the directionality of emotional experiences of the schoolchildren. The factor was named "Positive emotional component".

According to the model obtained, boys have more negative emotions related to problems, whereas the manifestation of positive emotions is related to the satisfaction with the teacher.

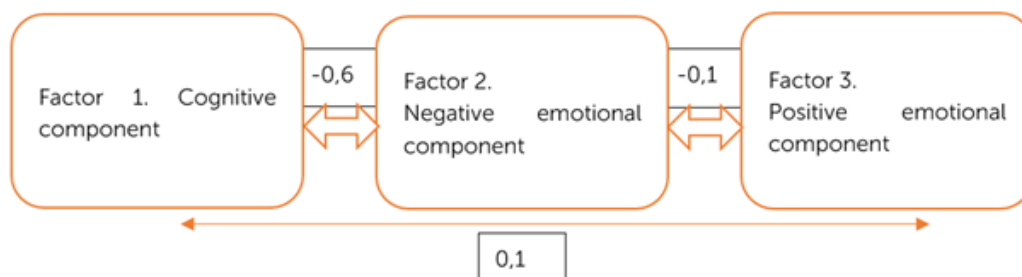
In this model, the factor "Cognitive factor" has an inverse relationship with the factor "Negative emotional component" and is also very weakly related to the factor "Positive emotional component". The factor "Positive emotional component" has a very weak inverse relationship with the factor "Negative emotional component" (Figure 2).

Thus, the emotional well-being of schoolboys is formed by a cognitive component, a negative emotional component and a positive emotional component.

Next, let us consider the obtained factor model of girls' emotional well-being.

Figure 2

Relationship of structural components of emotional well-being in boys



Data for the scales were tested using the Kaiser-Meyer-Olkin test to assess the adequacy of the scales for factor analysis. The value of the Kaiser-Meyer-Olkin test was 0.86, which is a good indicator for conducting factor analysis between scales. Additionally, the adequacy of conducting factor analysis was confirmed by the results of the calculation of Bartlett's sphericity criterion with $\chi^2 = 607.24$, $df = 78$, $p < 0.001$. Parallel analysis was used to determine the number of factors, which turned out to be equal to 3.

Exploratory factor analysis with oblique rotation (oblimin) was performed using the MINRES method (Table 5).

Table 5

The Structure of Girls' Emotional Well-being

	Factor1	Factor 2	Factor 3
Family	0,63	0,01	-0,05
Friends	0,78	-0,03	-0,07
School	0,89	0,05	-0,03
I'll do it myself	0,85	0,03	0,05

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	Factor1	Factor 2	Factor 3
Teachers	0,68	-0,07	0,14
Positive affect (PA)	0,14	-0,23	0,66
Negative affect (NA)	-0,23	0,51	0,51
Mental toughness	0,2	0	0,28
Prosocial behavior	0,27	-0,29	0,37
Hyperactivity	-0,06	0,67	-0,17
Emotional symptoms	0,02	0,84	0,04
Behavior problems	0,07	0,77	-0,01
Peer problems	-0,07	0,63	-0,15
Load	3,35	2,7	1,03

	Factor1	Factor 2	Factor 3
Part of the explained variance	0,26	0,21	0,08
The part of explained variance accumulated by	0,26	0,47	0,54

The first factor included variables such as satisfaction with school (0.89), self (0.85), friends (0.78), teachers (0.68) and family (0.63). This factor was named the "Cognitive component".

The second factor was formed by emotional problems (0.84), behavior problems (0.77), hyperactivity (0.67), peer problems (0.67), and negative affect (0.51). This factor combined problems and negative affect and was named the "Destructive Component".

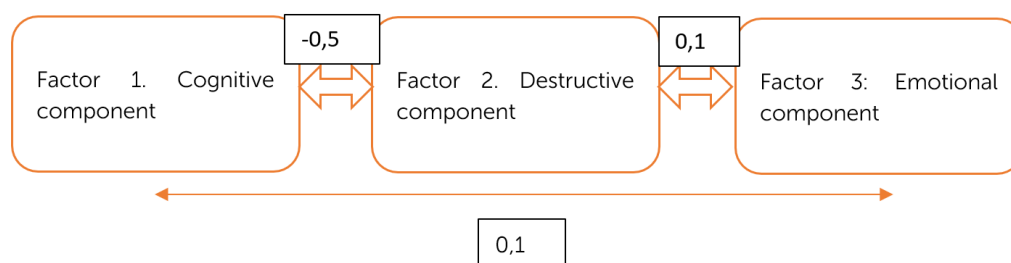
The third factor is formed by positive affect (0.66), negative affect (0.51), and prosocial behavior (0.37). This factor was named the "Emotional component".

Analyzing the structure of emotional well-being obtained on the group of girls, we can conclude that it generally repeats the general structure, except that in the cognitive component there is no such indicator as mental stability.

The factor "Cognitive component" has an inverse relationship with the factor "Destructive component" and a very weak relationship with the factor "Emotional component". The factor "Emotional component" has a very weak connection with the factor "Destructive component" (Figure 3).

Figure 3

Relationship of structural components of emotional well-being in girls



Taking into account that the variable "mental stability" is missing in the obtained factor model of girls' emotional well-being, and considering this in the context of the inverse relationship of the cognitive component with the destructive component, it can be assumed that in girls the influence of problems and negative experiences on satisfaction will be stronger than in boys.

Discussion

We obtained models of emotional well-being of schoolchildren, which partially agree with the general idea of the structure of emotional well-being as a set of cognitive (satisfaction) and emotional (positive and negative emotions) components presented in the works of T.V. Arkireeva (2017), Y.B. Grigorova (2019), O.A. Eliseeva (2011), S. Lubomirski, H. Lepper (1999).

The destructive component, which is formed by the presence of problems in schoolchildren and negative affect, was also included in the structure obtained by us. This component has an average inverse relationship with the cognitive component, which allows us to consider it as an obstacle to achieving satisfaction in different spheres of a schoolchild's life. Therefore, the destructive component can be considered, among other things, as an indicator of a schoolchild's disadvantage. It is important to note that well-being and disadvantage are considered from the position of both dependent and independent phenomena (Ryff, et al., 2006). Our results show the connection between satisfaction with various spheres of life and disadvantage. If a schoolchild is dominated by negative experiences, it leads to dissatisfaction with himself and his studies, as well as with relations with those with whom he is in constant communication. In this case, it is possible to consider well-being and disadvantage as related phenomena. This is consistent with the view of C. Ryff and colleagues (2006), R. Nes and colleagues (2008), Zhao M. Y., Tay L (2023), who consider the phenomenon of "well-being" from the perspective of the absence of signs of disadvantage.

At the same time, it is important to note that the detected relationship persists in gender-specific models. This result partially agrees with the results of the study by P. S. Morrison, I. Liu, D. Zeng. The authors found a relationship between well-being experience and disadvantage in a group of students, but the relationship found was not strong (Morrison et al., 2023).

In boys, the structure of emotional well-being is formed by the cognitive component, negative emotional component and positive emotional component. An inverse relationship was found between the cognitive component and the negative emotional component and a very weak relationship with the positive emotional component. In the positive emotional component, the variable "positive affect», which is related to teacher satisfaction, was found to be the most loaded variable. The obtained result is consistent with the provisions of E.S. Popovicheva about the role of the teacher in maintaining

the well-being of the schoolchild (Popovicheva, 2023). E.S. Popovicheva relied on the research of D. Kim, J. Kim (2013), L. Tian and colleagues (Tian et al., 2013), in which it was found that the level of schoolchildren's well-being is related to the teacher, who should teach schoolchildren to realistically assess their strengths and weaknesses, as well as provide control over the social-emotional characteristics of students.

The structure of emotional well-being of school-age girls corresponds to the general structure, but the variable "mental stability" was not included in the cognitive component. This result does not agree with N.Y. Litvinova's view that mental stability is a condition of subjective well-being. The author in her theoretical analysis came to the conclusion that forcedness of mental stability provides happiness, satisfaction, and emotional comfort (Litvinova, 2015). According to the results of Akbari & Khormaiee's (2015) study, mental toughness mediates the influence of emotional intelligence on emotional well-being (using students as an example). In the study of M. Yildirim, F. Ç. Tanrıverdi, mental toughness acted as a predictor of life satisfaction (Yildirim & Tanrıverdi, 2021). In a study by M. Desrianty and colleagues showed that mental toughness provides psychological well-being in high school students (Desrianty et al., 2021).

Conclusions

The structure of emotional well-being is represented by three components, namely cognitive, destructive, and emotional. A negative relationship was found between cognitive and destructive components of emotional well-being of schoolchildren.

Gender differences have been found in the structure of emotional well-being of schoolchildren. The structure of emotional well-being of school-age girls corresponds to the general structure and is represented by cognitive, destructive, and emotional components. In school-age boys, the structure of emotional well-being is formed by cognitive component, negative emotional component and positive emotional component.

The results obtained in this work can be used in the development of psychological support for schoolchildren under conditions of increasingly complex educational environment. Prospects for further research may be associated with empirical confirmation of the models obtained using structural modeling methods. Also in the plans for further research is the determination of the relationship of components of emotional well-being of schoolchildren with the characteristics of academic success, personality traits, family environment, leisure time activities.

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Text Comprehension Processes in Student Learning within the Context of the Subject-Analytical Approach

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Abstract

Introduction. The scientific novelty of the research lies in the description of the impact of using the subject-analytical approach on the development of the level of text comprehension. The aim of the research is to evaluate the development of comprehension levels in students trained in text processing. **Methods.** The study involved 120 students of the Far Eastern State Medical University, 60 of whom were in the experimental group, 60 in the control group. Specially organized activities were carried out to teach the experimental group students methods of text comprehension, and then the differences between the groups in the level of text comprehension were assessed. For a qualitative analysis of the dynamics of the development of skills related to text comprehension, a set of levels of text comprehension developed by V.P. Zinchenko was used. **Results.** The students in the experimental group showed higher skills and abilities necessary for working with text than the students in the control group. During the study, the psychological structure of teaching students to understand according to V.P. Zinchenko's levels of comprehension was identified: natural, cultural, and creative (object of development, necessary skills, structural elements, cognitive processes corresponding to each level of comprehension, focus of text comprehension methods). For each skill, the necessary abilities and corresponding text comprehension methods were determined. **Discussion.** It was found that the subject-analytical approach, along with specially organized training in text comprehension methods, leads to quantitative and qualitative changes in comprehension among students.

Keywords

text comprehension, subject-analytical approach, analytical skills, holistic skills, levels of comprehension

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Introduction

The rapidly advancing scientific and technological progress currently leads to a constant complication of the world's structure, interactions among people, and various processes and phenomena. Each year, it becomes increasingly difficult for individuals to perceive information, keep pace with processing, and structure the ever-increasing volumes of data. Consequently, there arises a need for training in new skills for processing and analyzing information, as well as additional education in text comprehension skills. The issues of processing and understanding information are unified around the subject-analytical approach in psychology, a term formulated by V.V. Znakov. The subjective component is viewed as a manifestation of the internal conditions of a person's cognition of the world, primarily their own experience (Foucault, 2011). The subjective component represents the perception of external information through the prism of one's own internal value system, facilitated by the execution of purposeful activities and the transition from one stage to another (Kintsch, 1988; Kharlamenkova, 2010). T.P. Voitenko examines the subjective component from a gnoseological perspective as "the free will of a person directing their activity" (Voitenko, 2017). V.V. Znakov presents subjectivity as "the totality of internal conditions for the development of understanding...: external causes act, refracted through internal conditions, which form the basis of psychological development" (Znakov, 2015; Znakov, 2023a). V.V. Znakov considers subjectivity within the framework of the sociocultural approach, where complete objectivity is unattainable due to differing life attitudes, values, and norms among individuals (Znakov, 2023b). In all descriptions of the subjective component, there is an emphasis on the perception of external information and new knowledge through internal conditions: one's own value system and the staged nature of perception, as well as personal experience and/or one's own psychological developmental capabilities.

Components of the Subject-Analytical Approach

The analytical component of the subject-analytical approach involves identifying the distinctive features, properties, and phenomena of the studied phenomenon or process. M.S. Guseletseva emphasizes the necessity of analysis, which is justified by the subsequent synthesis of individual parts into a unified whole to achieve a deeper understanding of the text and to uncover new meanings (Guseletseva, 2009). This process may include filtering out insignificant data that neither contribute to understanding the text nor carry any semantic load. V.V. Znakov also highlights this point, noting that the process of studying a particular research subject requires clarity, which may sometimes lead to its simplification (Znakov, 2015). Znakov considers the analytical component within the framework of the cognitive approach to research on understanding, where researchers strive to "correlate and compare the actual state of affairs with what is potentially permissible and therefore possible" (Znakov, 2023b).

Similarly, M.S. Guseletseva (2019) underscores the importance of employing various analytical strategies, which involve identifying a specific set of methods for solving problems and tasks to achieve optimal results (Guseletseva, 2019). This indicates that the analytical component is not only about breaking down perceived information into separate objects, processes, or phenomena for a deeper understanding but also about searching for appropriate ways of interpreting a particular text.

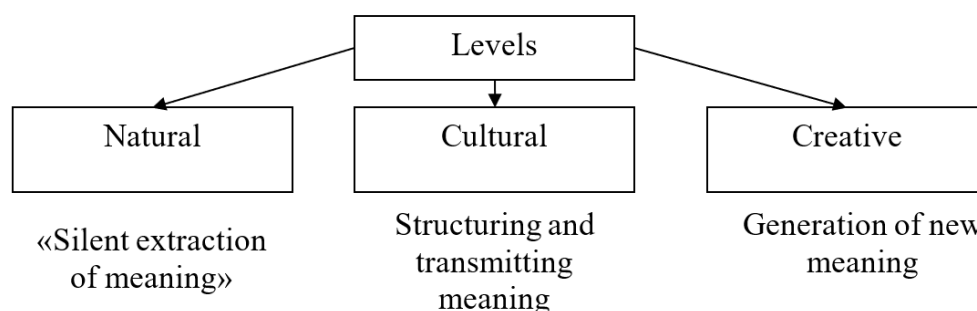
The subject-analytical approach views the process of understanding as the analysis of a text, its division into smaller units for detailed examination, and the subsequent integration of these units into a holistic picture that can be incorporated into one's worldview. This process requires individuals to possess well-developed analytical and holistic skills at a sufficiently high level. Analytical skills refer to the ability to identify individual elements, concepts, and phenomena within a stream of information for subsequent processing, analysis, and incorporation into one's system of values. In contrast, holistic skills enable the evaluation of a situation or information as a unified whole. These skills require individuals to exhibit high cognitive speed with minimal conscious effort (Evans, 2008; Tkachenko & Khukhlaev, 2022). Analytical and holistic skills reflect a person's ability to analyze and synthesize incoming information.

Levels of Understanding in the Educational Process

Based on the conclusions that understanding a text, according to the subject-analytical approach, involves selecting a set of specific methods, it is necessary to distinguish levels of text understanding to determine concrete ways to achieve them. Within the framework of our study, it is important to consider the work of V.P. Zinchenko, who notes that the holistic process of understanding may "include individual acts" that can be grouped into levels (Zinchenko, 2014).

The levels of understanding in the educational process, as identified by V. P. Zinchenko (2014), are presented in Figure 1.

Figure 1
Level of text comprehension according to V.P. Zinchenko



Natural understanding occurs when a learner is able to extract meaning from a text. This level is achieved when it is confirmed through the individual's behavior and actions. Despite its name, this type of understanding is not innate. It involves subject-oriented understanding, requiring analytical skills and unconscious inferences (Calet, López-Reyes & Jiménez-Fernández, 2020). Natural understanding is necessarily tied to a person's actions and cannot exist independently. This type of understanding can be characterized as "understanding through practice," as it encompasses empirical acts such as perceiving signs (letters, words, shapes, colors) and differentiating between familiar and unfamiliar information. Recognizing unfamiliar information is essential for subsequent analysis and synthesis into one's worldview. Kirchhoff & Glaesser (2023) emphasized that the process of understanding is more effective when attention is paid to the meanings of individual words or formulations within the context of the text, even if they contradict prior experience. Seyidova (2023) also highlights the importance of understanding the connection between a word and its context when working with a text. In her research, she concludes that the influence of context on the semantics of a word enhances the process of communication between the reader and the author (Seyidova, 2023). If one begins working with a text by generalizing or relying on pre-existing knowledge, this can distort the meaning of the text and lead to misunderstanding.

The cultural level of understanding involves not only extracting meaning from a text but also its symbolic representation, enabling the possibility of its presentation. The completeness and adequacy of understanding at this level are measured by the degree to which the reproduced text corresponds to the original. However, the application of meaning in action by the learner may not occur. Consequently, cultural understanding

can result in a mechanical repetition of the meaning presented in the text, achieved through holistic skills. The empirical acts remain the same, but understanding the meaning within the context of the text becomes possible.

The third level of understanding identified by V.P. Zinchenko is creative understanding. In addition to incorporating the characteristics of the first two levels, it necessarily involves the emergence of a new meaning or a new symbolic form for representing the text. In the educational environment, assessing creative understanding of a text requires teachers to have additional capabilities to interpret their students' creative texts, both oral and written (Zinchenko, 2014). At this level, the meaning of the text is fully understood within the context presented by the author, along with an active-dialogical understanding. This implies a kind of debate between the reader and the author, resulting in the generation of a unique solution to the problem posed. Accordingly, holistic skills play a key role at this stage.

For understanding to be effective, regardless of its type, it is essential to preserve the subject matter and meaning of the text. Subject matter is necessarily embedded in action and imagery, which are characteristic of natural and creative understanding. It is more challenging in the case of cultural understanding, as there is a risk of error during the verbalization of the text's meaning.

If the learning process focuses not merely on memorization but also on understanding the text, the effectiveness of education increases. Particularly important are disciplines that not only convey theoretical aspects of various scientific fields but also facilitate the comprehension of acquired information.

Levels of Development in Understanding Educational Texts

Based on the analysis of the components of V.V. Znakov's subject-analytical approach and V.P. Zinchenko's classification of understanding types, we identified levels of text understanding and their corresponding structural elements (Table 1).

Table 1
Levels of Development in Understanding Educational Texts

Structural Components	Levels of Understanding		
	Natural	Cultural	Creative
Object of Development	Definitions	phenomena, processes	Inner meaning
Necessary Skills	Analytical	Holistic	Holistic

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Structural Components	Levels of Understanding		
	Natural	Cultural	Creative
Analytical	Definitions, phenomena, processes	The meaning of the text, its practical application	New meaning of the text, its new symbolic form
Structural Elements	Definitions, phenomena, processes	Text meaning and its practical application	New meaning of the text, its new symbolic form
Cognitive Processes	Recognition	Reproduction, meaningful understanding	Internal understanding, emergence of new meanings
Orientation of Comprehension Methods	Simplification	Visualization	Explanation

As shown in Table 1, the process of understanding educational texts can be divided into three levels: natural, cultural, and creative.

At the natural level, students are introduced to definitions and engage in recognition. The process of understanding may not be fully realized at this stage, but recognition and differentiation occur. To move beyond this stage, methods of understanding should focus on simplifying key definitions, phenomena, and processes to facilitate memorization, which can prove challenging even for experienced readers (Tsukerman & Kleshch, 2017).

At the cultural level, the definitions, phenomena, and processes identified in the previous stage are integrated into a holistic picture. Connections between these elements are established, and their practical application emerges. Understanding methods at this stage should help students visualize the knowledge acquired at the natural level by applying it to their life experiences and integrating it into their existing knowledge system.

The creative level is characterized by internal understanding, marked by the emergence of new meanings that are not explicitly presented in the text. At this stage, learners engage in introspection, leading to reflection and self-understanding (Mosunova, 2019; Krasnykh, 2023). Students interpret the text in terms of its relevance to their own needs, how it has influenced their perception, and how it has shaped their worldview. This level demonstrates that the student has truly understood the information presented.

In our study, we developed a system of indicators necessary for productive engagement with texts. Corresponding methods of understanding were selected to support the development of these indicators (Table 2).

Table 2
Methods of Understanding Texts

Levels of Understanding	Understanding Skills	Indicators of Understanding (Required Abilities)	Methods of Text Comprehension
Natural	Analytical	Structuring information	Illustrative text plan
			Oral reproduction of secondary text
			Classification of familiar and unfamiliar information
			Marking positive and negative information in the text
Cultural	Holistic	Developing others' ideas	Reader projection onto theoretical material

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Levels of Understanding	Understanding Skills	Indicators of Understanding (Required Abilities)	Methods of Text Comprehension
Creative	Holistic Analytical	Persuasive argumentation of one's own ideas.	Identifying contradictions in the text.
		Identifying non-obvious patterns.	Defining one's own problem within the text.
		Engaging in professional discussions, supported by evidence.	Comparative table.

The natural level corresponds to methods such as creating an illustrative text plan and oral reproduction of secondary text. An illustrative text plan involves compiling a set of illustrations that convey the main ideas of the educational text. This plan should be recognizable not only to its creator but also to others familiar with the text. Based on this plan, the student generates a secondary text and presents it orally. Classification, on the other hand, involves identifying familiar and unfamiliar concepts, processes, and phenomena described in the text. When "marking positive and negative information in the text," the student categorizes the information as positive or negative and explains why it falls into each category. At this stage, students use their analytical skills to break the text into discrete semantic units for further familiarization. These methods create conditions in the educational process that enable students to make self-determined choices, allowing them to structure information, refine new definitions, phenomena, and processes using their analytical skills (Ricketts, 2020).

The cultural level corresponds to the method of reader projection onto theoretical material. Reader projection is the result of the process by which the recipient perceives the text in their own consciousness (Sorokin, 1985). Transferring the meaning of the text to one's existing knowledge and personal experience, particularly when it is analogous to the situation described in the text, is possible only through understanding. Furthermore, reasoning, and answering one's motivational questions about the text (e.g., "Where can this be applied?" and "How is this related to my professional activity?") will enhance understanding of both theoretical and practical material (Miyamoto, Pfost

& Artelt, 2019). Holistic skills are utilized at this stage, allowing learners to integrate the definitions and processes identified in the first stage, comprehend the author's intended meaning, and apply it to their experiences and similar situations.

The third, creative level of text understanding, can be achieved through methods such as "identifying contradictions" and "defining the problem of the text." In philosophy, a contradiction is defined as "a category that expresses the internal source of all motion, development, change, and transition to a new quality" (Kondakov, 1975). In pedagogy, contradiction is understood as "a mismatch between opposites: the desired and the actual, needs and possibilities" (Glebov, 2020). Accordingly, a contradiction represents an individual insight of the learner, who identifies it while analyzing the received information and integrating it into their own worldview.

An essential component of any text is its problem. The problem of a text is understood as the contradiction raised in the study under review or in its connection with external factors, other studies, or sciences as a whole. The text's problem "requires going beyond the knowledge already acquired and moving toward new knowledge" (Mochalov, 1964). Solving the problem involves exploring aspects that have not been previously studied. The quality of future knowledge depends on how correctly the problem is formulated (Collins, 2020; Dorozhkin & Golubinskaya, 2023).

A learner can identify the problem of a text based on previously acquired theoretical knowledge, their own life experience, and by asking questions about how the information in the text could be used in their future professional activities or about its potential negative impact on areas not mentioned in the text.

The "comparative table" as a method of understanding involves the independent identification of objects for comparison within the text and criteria for their analysis.

Working with a text at the creative level requires students to possess a high level of holistic and analytical skills, as the task involves not only analyzing the meaning of the text but also integrating their own knowledge and being able to navigate their external environment. These methods of understanding texts help develop the following abilities:

- identifying non-obvious patterns in the text, enabling the extraction of not only surface-level information but also hidden meanings. This process involves correlating the information with the learner's own knowledge and life experience, as well as interpreting the extracted information.
- persuasive argumentation of one's own idea, which should address contentious and non-obvious points in the text and must be formulated clearly and precisely (Venediktova, 2013).
- engaging in professional discussions with supporting evidence, which requires students to have a strong grasp of theoretical material and the ability to establish logical connections between various definitions, phenomena, and events necessary to substantiate their viewpoint.

The aim of this study was to assess the development of students' level of text understanding after being trained in methods of working with texts, which is a cornerstone of successful learning. We hypothesized that providing students with specialized training in text comprehension methods would help develop their holistic and analytical skills.

Methods

The study involved students from the Far Eastern State Medical University of the Ministry of Health of Russia, Khabarovsk. The experimental group consisted of 60 students, while the control group also included 60 participants. Within the framework of the experiment, the evaluation of students' work using the proposed methods of text comprehension was conducted by assessing mastery of the following skills: "structuring information," "developing someone else's idea," "convincingly presenting one's own position," "identifying non-obvious patterns," and "engaging in professional discussions with supporting evidence." Proficiency in these skills was achieved through mastering various methods of understanding texts. To analyze the dynamics of skill development related to text comprehension, the levels of text understanding developed by V.P. Zinchenko were utilized.

The following methods were employed in this study:

- analysis of literature on the subject-analytical approach in psychology and the problem of text comprehension;
- exploratory (diagnostic), formative, and confirmatory experiments, during which students were trained in methods of text comprehension aimed at developing skills and abilities;
- Mann-Whitney U test and Spearman's rank correlation coefficient;
- quantitative and qualitative analysis of the obtained data.

During the experiment, activities were carried out to develop the skills and abilities necessary for text comprehension (for more details, see Kameneva-Lyubavskaya & Borzova, 2024).

One of the texts provided to students was I.A. Kradenykh's work "The Economic Potential of the Advanced Development Territory of the Khabarovsk Region" (Kradenykh, 2023). We proceeded from the understanding that the modern world demands comprehensive development from the education system and each individual, as well as readiness to adapt to society with its constantly changing conditions and accelerating pace of life. Since the training in text comprehension methods was conducted within the framework of the discipline "Economics," the acquisition of the necessary skills was based on the knowledge gained in this subject.

We emphasized that, in the relatively unconstrained conditions of the educational process, students would apply the learned methods of working with texts both within the scope of other academic disciplines and in extracurricular activities.

Results

Below are examples of work from students in the experimental group who underwent specialized training in text comprehension methods. The original spelling and grammar of the students' responses have been preserved.

Reader Projection onto Theoretical Material

During training in this method, students analyzed phenomena and processes described in the text, seeking to justify them using theoretical knowledge.

Student M.N. writes: "At the beginning of the article by I.A. Kradenykh, the advantages of the Territory of Advanced Development (TAD) are listed, which exemplify the state's fiscal policy. By exempting enterprises located in these territories from certain taxes for a specified period, the government supports their operations and facilitates growth. This allows enterprises to save funds and reinvest them in development. Additionally, TAD enterprises receive state subsidies and investments from larger domestic or foreign firms. Establishing new enterprises in TADs also creates jobs, which should reduce unemployment and improve societal well-being."

Within the "reader projection" framework, student M.N. correctly identified that TAD support measures reflect the state's fiscal policy. The student further argued that these measures stimulate regional economic growth, expanding beyond mere paraphrasing to logically develop the author's ideas. This demonstrates mastery of the skill "elaborating others' ideas."

Defining the Text's Problem

Training in this method began with analyzing the concept of "contradiction." After grasping it, students identified phenomena or processes conflicting with the text's claims, using these contradictions to formulate problems.

Student F.I. states: "There is a contradiction between the purported advantages of TADs and their innovative development. The author highlights Khabarovsk Krai's infrastructure, resource base, and logistics potential but later notes its lag in socio-economic indicators, skilled labor shortages, and low investment appeal. Despite state support, TADs remain unattractive to investors due to underdeveloped infrastructure, remoteness from central regions, and 'brain drain.' While foreign specialists work there, their qualifications are insufficient. Until the region improves living standards (education, healthcare, wages, housing costs), skilled workers will keep migrating westward, deterring investors. Thus, a key problem is the TADs' lack of investment attractiveness and economic efficiency."

Additionally, there is a contradiction between TAD development and its environmental impact. Expanding industry under TADs will increase pollution. Enterprises would need more treatment facilities, reducing profitability. This raises the problem of ecological safety in TAD development."

These contradictions are clearly formulated and rigorously substantiated by the student using both textual information and personal knowledge. Student F.I. identified a pattern between the slow development of enterprises within TADs and the regions' unattractiveness to highly qualified specialists. The student also articulated and justified an original contradiction regarding TAD development and its negative environmental impact. Analyzing this response, it is evident that F.I. has mastered skills such as "elaborating others' ideas," "persuasive articulation of one's claims," "identifying non-obvious patterns," and "conducting professional discourse supported by evidence."

Comparative Table

The comparative table method involves identifying definitions, phenomena, and processes in the text that can be contrasted. When textual descriptions of selected elements lack sufficient detail, students were advised to conduct additional research to enable comprehensive comparative analysis. After completing the table, students were required to write qualitative and, where possible, quantitative conclusions.

Below is the work of student P.V., based on the "comparative table" method:

"Conclusion. As shown in the table, each of the three TADs described in the text has a specialization aligned with the region's resources. Consequently, their operational focus varies. In Nikolaevsk, it is the use of the rich natural resources available in the area; in Komsomolsk, it is the development of scientific and technological progress (STP) aimed at producing more advanced machinery; and in Khabarovsk, it is socio-economic development. Therefore, each TAD has its own problems hindering its normal and productive development. For example, the problem of remoteness in the Nikolaevsk TAD can be addressed by constructing a new high-quality and safe road capable of supporting the weight of heavy freight trucks used to transport raw materials. The outflow of young specialists from the Komsomolsk TAD can be mitigated by making jobs more attractive (e.g., offering greater social benefits, higher salaries, subsidies for purchasing private rather than employer-provided housing, and providing healthcare services at a high standard). The problem of expanding land for agricultural enterprises in the Khabarovsk TAD can be resolved through assistance from local authorities in identifying owners of abandoned land plots and facilitating their purchase.

Thus, the task of regional authorities is not only to monitor the implementation of state support measures and achieved performance indicators but also to assist in promptly resolving emerging issues. With this support, TAD enterprises will develop more actively and generate higher profits, which will result in increased tax revenues for the regional budget, ultimately contributing to the better development of the Khabarovsk Region.

Table 3

Student P.V.'s Work Using the "Comparative Table" Method

Comparative Features	TAD "Nikolaevsk"	TAD "Komsomolsk"	TAD "Khabarovsk"
Production	Ship repair, fish processing, mining	Machinery, metalworking, woodworking	Agriculture, logistics, manufacturing
TAD Focus	Natural resource utilization	Scientific-technological advancement, labor force expansion	Socio-economic development
TAD Challenges	Remote location, poor transport access	Brain drain (youth migration)	Expansion of agricultural enterprise areas through the utilization of abandoned land plots

The student, using the text and their existing knowledge, competently compiled a comparative table (Table 3), identifying comparative features for the analysis of each TAD (Territory of Advanced Development). The student highlighted and briefly described the main types of activities for each TAD discussed in the article, outlined their primary focus, and identified their challenges. Additionally, the student proposed solutions to these challenges to improve the performance of the enterprises. By applying this method of text comprehension, the student demonstrated skills such as "developing others' ideas," "persuasively presenting their own proposals," "identifying non-obvious patterns," and "conducting professional discussions while providing supporting evidence." The student also demonstrated analytical skills (through detailed descriptions of each TAD) and holistic thinking (in formulating the conclusion).

Analysis of Quantitative Research Indicators

The study involved 120 students from the Far Eastern State Medical University of the Russian Ministry of Health, with 60 participants in the experimental group and 60 in the control group.

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Before the experiment, the level of skills required for text comprehension (assessed on a scale from 1 to 5, where 1 is the lowest score and 5 is the highest) was the same in both the control and experimental groups. This is evidenced by the calculated Mann-Whitney U test values, which exceed the critical value of 1486 and fall within the zone of insignificance.

The analysis of statistically significant differences between the control and experimental groups at the end of the study was also conducted using the Mann-Whitney U test. The results are presented in Table 4.

Table 4
Mann-Whitney U Test Results

Information structuring	developing others' ideas	Persuasive articulation of claims	Identifying non-obvious patterns	Conducting a professional discussion with supporting evidence
682,5	532,5	550	302	469

As shown in Table 4, statistically significant differences were observed in all the skills necessary for text comprehension that we considered, since the calculated indicators are less than the table value (equal to 1486), and therefore all values fall within the significance zone (Naumova, Mukhacheva, 2014).

In addition, a Spearman correlation coefficient matrix was constructed (Table 5). It shows that there is a high (or medium, closer to the upper boundary of the values) correlation between the presence of specialized training in text comprehension methods and the level of skill development (the strength of the correlation was assessed using the Chaddock scale).

Table 5
Correlation Coefficient Matrix

Indicators	Presence of specialized Training	Structuring Information	Developing Others' Ideas	Persuasive Presentation of Own Proposal	Identifying Non-obvious Patterns	Conducting a professional discussion with supporting evidence
Presence of Specialized Training	1	0,6	0,7	0,7	0,7	0,7
Structuring Information	0,6	1	0,6	0,4	0,5	0,4
Developing Others' Ideas	0,7	0,6	1	0,6	0,5	0,5
Persuasive Presentation of Own Proposal	0,7	0,4	0,6	1	0,6	0,5
Identifying Non-obvious Patterns	0,7	0,5	0,5	0,6	1	0,5
Conducting a professional discussion with supporting evidence	0,7	0,4	0,5	0,5	0,5	1

Note: $p \leq 0,05$

Additionally, the matrix shows a medium correlation between the skills considered. This indicates that all of them are interrelated, and mastering just one skill without acquiring the others is not possible.

Discussion

The data obtained during the study are the result of implementing specialized training in text comprehension methods. Statistically significant differences were found between the control and experimental groups at the final stage of the study. This indicates that students who underwent specialized training possess higher-level text comprehension skills and, consequently, more advanced analytical and holistic abilities (Ryherd & Landi, 2019). To qualitatively analyze the dynamics of skill development related to text comprehension, a framework of text comprehension levels developed by V.P. Zinchenko was applied. For example, the skill of "structuring information" corresponds to the first, natural level of text comprehension, as it involves understanding individual definitions and words described in the text while allowing for a lack of understanding of the text's overall meaning. The goal of this level in teaching students text comprehension methods is to teach them to structure information according to specific criteria defined by the text's theme and to identify unfamiliar information (definitions, processes) for deeper understanding in the future. Therefore, the work with students on teaching text comprehension methods was aimed at developing analytical skills.

Skills such as "developing others' ideas" were mastered by students at the second, cultural level of text comprehension, which is characterized by the symbolic representation of the text's meaning. At this level, students must integrate the information obtained at the first level to convey the text's meaning, thereby utilizing their holistic skills. A good indicator is the students' ability to argue the author's hypotheses not only using words from the text but also their own reflections, supported by previously acquired theoretical knowledge on the topic.

Skills such as "identifying non-obvious patterns," "persuasively arguing one's own idea," and "conducting a professional conversation with supporting evidence" correspond to the highest, creative level of text comprehension, as they involve the generation of new meanings by the learners. Here, the use of both analytical and holistic skills is observed, enabling the systematization of new information and its integration into the learner's knowledge structure. The teacher's task at this level is to create conditions in which students not only analyze and perceive information but also desire to share their "discoveries"—what they have learned and concluded (Groen, Veenendaal & Verhoeven, 2019).

The obtained results suggest that students who underwent specialized training in text comprehension methods are capable of reaching the creative level, characterized by a high level of mastery of analytical and holistic skills, while students in the control group remained, at best, at the cultural level.

Conclusion

The process of text comprehension in the educational context represents an interaction between the learner and the text, which includes the following sequential levels: the natural level, characterized by literal understanding; the cultural level, distinguished by the symbolic representation of the text; and the creative level, marked by complete understanding and the generation of new meanings. Each level has its own structural components, which include structural elements, cognitive processes corresponding to each level of comprehension, and the focus of text comprehension methods.

To achieve the creative level of comprehension, we developed conceptual principles for a text comprehension model based on the subject-analytical approach proposed by V.V. Znakov. Comprehension at the highest level requires learners to possess well-developed analytical and holistic skills. Mastery of these skills is achieved through the practice of abilities such as "structuring information," "developing others' ideas," "identifying non-obvious patterns," "persuasively presenting one's own proposal," and "conducting a professional conversation with supporting evidence." These abilities, in turn, are honed through various text comprehension methods.

During the study, we observed that students who engaged in specially organized activities were far more likely to reach the creative level of text comprehension. Those who did not undergo specialized training typically remained, at best, at the cultural level—the level of symbolic representation of the author's ideas.

A text typically provides just enough information for the learner to familiarize themselves with a particular phenomenon or process, leaving room for their own thoughts and reflections. Understanding what is described in the text corresponds to the natural level, while expressing the author's ideas in one's own symbolic form corresponds to the cultural level. Filling the space left by the author for reflection, posing one's own questions, and contemplating identified issues correspond to the creative level, where the ideas and thoughts presented in the text intersect with the reader's worldview. This interaction can lead to the birth of new thoughts and knowledge. Viewing the student as a subject operating at the highest level of their cognitive integrity and activity, we proceed from the assumption that they must master a wide range of methods for working with various types of texts to achieve a high level of comprehension. Under the guidance of an educator, as learners assimilate a broad spectrum of text-processing methods, they identify those that are most relevant and meaningful to them. Mastering one set of methods often leads to the desire to apply others, develop new ones, transform existing ones, and pay close attention to one's own words and thoughts. Thus, teaching students comprehension based on the subject-analytical approach should be considered a distinct field of knowledge aimed at equipping them with the necessary skills and abilities. These will not only aid them in their future professional endeavors but may also lead to new scientific insights or discoveries.

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Effectiveness of Education in Reducing Antisocial Behaviors Among Youth in Saudi Arabia: A Survey Study

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Abstract

Introduction. The novelty of the research lies in examining the efficacy of the Saudi government's educational reforms aimed at addressing issues such as extremism and promoting tolerance. For the first time studied, our research assesses the prevalence of antisocial behavior among university students in Saudi Arabia following two decades of these reform efforts. A new perspective on the problem is presented through the utilization of the psychopathy assessment tool SRP-4, comparing results with students from other nations. **Methods.** In our investigation, we surveyed 1076 participants from the target population, utilizing the Self-Report Psychopathy- Version 4 (SRP 4). Our research is exploratory, focusing on understanding the effectiveness of reforms rather than confirming a specific hypothesis. **Results.** The results underscore the importance of comprehending raw and T scores on the SRP 4 scale for statistical analysis. By comparing scores between US college students and Saudi Arabian undergraduates, we reveal average levels of psychopathic traits among the latter, despite some disparities highlighted by Cohen's d values. **Discussion.** Our study emphasizes the significance of understanding raw and T scores in the SRP 4 scale before analyzing data. Through the comparison of American and Saudi Arabian university students, we've uncovered insights into psychopathic traits across diverse populations. Utilizing Cohen's d values, significant variations have been highlighted. These findings offer valuable perspectives on the psychosocial traits of college students.

Keywords

educational reform, Saudi Arabia, antisocial behavior, psychopathy assessment, comparative study, university students

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Introduction

Regularly assessing the educational system's operations is crucial from scientific, political, and economic perspectives, both locally and globally. This involves the participation of experts, thinkers, and well-educated individuals from local and international communities. Evaluations typically compare educational outcomes in terms of intellect, behavior, science, profession, and society with local demands and those of nearby and distant education systems. This helps identify strengths for enhancement and weaknesses for correction before they become critical.

When negative phenomena arise locally, like rising unemployment rates, the spread of begging, or different forms of antisocial (by which is meant extreme deviation from social standards that also violates the rights of others), the need for a thorough review of the activities of the education system becomes imperative. In these situations, a thorough and impartial evaluation of these efforts is crucial.

Significant changes are needed in the system to counteract actions linked to individuals or groups that pose threats, at national or global levels—such as attacking residential spaces or mosques in Saudi Arabia and being involved in events like the 9/11 attacks in the United States or conflicts in regions such as Chechnya, Iraq, Syria, and Yemen.

The government of Saudi Arabia has implemented a range of reforms and initiatives aimed at improving education and training results to meet standards effectively. The strategies utilize technology to update education and training schemes in line with the changing requirements of both international job markets. One notable project is the education development plan that aims to enhance student skills, promote creativity, and reinforce pride by improving teaching methods, content, and educational settings. The Ministry of Education also runs programs such as "Fatin" and "Rifq" to protect students from diverging and facing problems. These initiatives aim to teach students life skills and leadership qualities to address moral dilemmas effectively while encouraging empathy and understanding among individuals and increasing awareness of different types of violence within the student body as well as among teachers and parents.

Saudi universities have implemented numerous scientific projects, incentive awards, and international conferences to foster moderation, tolerance, and rejection of violence and terrorism. They have also established scientific centers and programs to combat antisocial behavior, demonstrating the government's commitment to creating safe and secure educational environments. These efforts, spanning over two decades, aim to provide students with the necessary tools for a proper and secure life, while equipping school staff and parents with effective preventive educational methods to address violence.

Hence, there is a crucial need for survey research to explore the impact of all these efforts undertaken by the Ministry of Education and Saudi universities to combat antisocial among youth in Saudi Arabia, considering that the majority (about 65%) of the Saudi Arabian population falls into the youth category (aged between 15 and 34 years) (General Authority of Statistics, 2022).

The main research question is: "What is the prevalence of antisocial behavior among university students in Saudi Arabia after two decades of reform efforts?" This will be supported by four sub-questions, each focusing on specific aspects of psychopathy assessment and comparison among culturally diverse college students. These are:

(1) What are the classification levels of psychopathic tendencies among university undergraduates from Saudi Arabia, as determined by the correspondence between raw scores and T scores for each facet, factor, and total score in the SRP 4 instrument? (2) How do the effect sizes of psychopathic traits, assessed by the SRP-4, vary across college students from the USA, Europe, and Saudi Arabia? (3) What factors contribute to the differing effect sizes between the USA and Saudi samples across SRP-4 components, and how do these variations affect the understanding of psychopathic traits in college students from these cultures? and (4) What are the contributing factors to the consistent average level of psychopathic traits among college students from different cultural backgrounds, as indicated by SRP 4 components?

These sub-questions offer nuanced perspectives on evaluating, comprehending, and contrasting psychopathic traits within this demographic. Using the Self-Report Psychopathy-Fourth Version (SRP 4), the aim of the current study is to assess the effectiveness of several strategies that have been done by Saudi government and universities to prevent antisocial behaviors among youth in Saudi Arabia and compare the results with similar foreign studies.

The primary objective of this study is to collect descriptive data, investigate a novel area, or gain insights into a particular phenomenon without having a predefined prediction. As such, the aim is to explore the topic thoroughly, often without formulating a hypothesis at the outset.

The research emphasizes the importance of evaluating Saudi Arabia's system to address the rising antisocial behaviors seen in college students and highlights efforts to improve educational quality and meet international standards through various reforms,

like curriculum updates and counseling programs driven by the Ministry of Education and universities in Saudi Arabia geared towards creating a safe learning atmosphere. However, the study points out the significance of assessments to measure the impact of these actions in reducing youth conduct due to the significant number of young people in Saudi Arabia. Such evaluations can help shape strategies and initiatives to promote behavior among young people in Saudi Arabia that is in line with global standards.

The Comprehensive Theoretical Basis

The definition of "antisocial" in psychology differs based upon the circumstances and the theoretical perspective being used. There are two recognized interpretations: 1. One interpretation involves a diagnosis called antisocial personality disorder (ASPD), which is characterized by a pattern of disregarding and violating the rights of others. Individuals with ASPD often exhibit behaviors such as dishonesty, impulsiveness, aggression, irresponsibility, and lack of remorse. 2. The other interpretation is...The Diagnostic and Statistical Manual of Mental Disorders (DS M. 5) published by the American Psychiatric Association in 2013, provides details regarding this diagnosis. Antisocial behavior encompasses a range of behaviors that can cause harm or disturbance to others and society at large. Traits such as aggression, deceitfulness, disregard for norms, and rule violations are all examples of behavior as outlined by Moffitt in 1993.

The rise of conduct is impacted by factors such as biology and genetics, along with environmental and social aspects. This mix of elements interacts intricately to mold susceptibilities and play a role in the formation of behaviors. Grasping the relationship among these factors is essential for dealing with and lessening the effects of antisocial behavior, on individuals and communities.

Neuroscientific studies indicate that irregularities in the structure and function of areas of the brain like the cortex and amygdala can play a role in antisocial behavior by affecting impulse control and emotional regulation (Blair et al., 2014). When these regions show decreased activity levels in individuals with behavior traits can lead to increased impulsiveness and difficulties in managing emotions that may contribute to conduct tendencies. Research into genetics highlights a influence in antisocial behavior, with estimates suggesting heritability falls between 40% to 50% although environmental factors are also significant contributors (Moffitt et al., 2006). Some specific genes associated with neurotransmitters such as serotonin and dopamine. Which play roles in regulating mood and processing rewards. Could potentially increase the likelihood of engaging in behavior (Caspi et al., 2003).

Experiencing situations in childhood like abuse or neglect can increase the chances of engaging in behavior, according to researchers in environmental and social sciences (Felitti et al., 1998). These experiences may impact how the brain develops, which can result in struggles with managing emotions and forming relationships. Effective social growth often originates from caring and well-defined parenting approaches, like styles

that emphasize warmth and boundaries. On the contrary, using techniques such as discipline or neglect might elevate the likelihood of impulsive and aggressive actions (Baumrind, 1996). Additionally, peer pressure has an impact since people can mimic behaviors through social learning and reinforcement to fit in or seek approval within their social groups (Bandura, 1977). Furthermore, Socioeconomic challenges such as poverty and being exposed to violence in the community can worsen behavior by restricting opportunities and causing feelings of despair and frustration while also exposing people to influences (as noted by Sampson et al., 1997). As a result of these circumstances... Individuals might turn to methods of dealing with their problems.

Understanding the complexities of life involves recognizing that a person's being is influenced by a combination of factors, like genetics and environment along, with social interactions that all work together rather than in separate silos. For example. A child inheriting traits and growing up in a household might struggle with emotional regulation and interpersonal communication skills leading to a higher likelihood of displaying antisocial behavior.

People with health conditions, like ADHD or anxiety disorders may display antisocial behavior at times and require proper diagnosis and treatment tailored to their needs. The interpretation and expression of behavior can vary across cultures; therefore, it's important to consider cultural context when assessing such behaviors and avoid being influenced by ethnocentric biases.

To sum up the issue of behavior is complex. Does not have a single origin point. Developing strategies to prevent and intervene in behavior necessitates grasping the interplay between biological influences, genetic predispositions, environmental factors, and social dynamics. By tackling weaknesses, fostering environments, and establishing supportive connections, we can strive to reduce instances of antisocial actions and foster a safer and more cohesive society.

Studies in psychology have thoroughly investigated how aggression and antisocial conduct are connected. Have uncovered a link between the two concepts. Antisocial behavior involves engaging in actions that show a lack of respect for rules and the rights of others. Violence is when someone deliberately uses force or authority to inflict harm. People who display behaviors often exhibit behavior towards others through expressions of anger or verbal and physical aggression (as noted by Moffitt in 1993 and Dodge & Coie in 1987).

Studies conducted over time have consistently indicated that individuals who exhibit behavior in their childhood and teenage years are more likely to engage in behavior later in life. This trend highlights the connection between onset behaviors and future involvement, in violent activities as outlined in the "age crime curve" concept discussed by Farrington (1986) and Moffitt (1993).

Individuals who have been identified with antisocial personality disorder (ASPD) as adults or conduct disorder (CD) during their childhood and teenage years frequently

display behaviors that are deemed antisocial, with a tendency for actions like physical aggression and criminal violence linked to both conditions (American Psychiatric Association; 2013). Moreover; characteristics such as anger, impulsiveness; and hostility that are typically seen in individuals with tendencies may play a role in their predisposition toward violence. Impulsiveness is known to increase the likelihood of engaging in violent actions by hindering individuals from managing their impulses and thinking about the outcomes (reference; Barratt 1994 and Coccaro et al. 1997). Additionally, people who grow up in environments marked by violence or abuse might adopt ways of coping and see violence as a way to handle conflicts or assert dominance (citing Bandura 1973 and Dodge et al. 1990).

The results underscore the relationship between conduct and violence in relation to personal traits and environmental factors among young individuals in Saudi Arabia without focusing on pinpointing the causes of antisocial behaviors, as the primary aim of this research is to measure such behaviors.

In research environments, antisocial actions are measured objectively through a variety of assessment tools and methods. Self-report surveys are often utilized, which are tools aimed at evaluating behavior based on individuals' responses. The Psychopathy Checklist Revised (PCI R), the Antisocial Personality Disorder Scale (APDS), and the Self Report Psychopathy Fourth Version (SRp 4) are some examples cited by Hare in 2003. Another approach involves methods where antisocial behaviors are observed and documented directly in controlled or natural settings. Field observations can involve studying real life scenarios or conducting controlled experiments, in laboratory settings (referencing Frick & Morris work from 2004).

Measuring behavior through interviews is a method used by clinicians to evaluate related disorders using structured or semi-formal questioning techniques that adhere to established diagnostic criteria, like those found in the DSM– Interestingly enough! A fourth approach involves evaluating responses like heart rate variability (HRV) and electrodermal activity (EDA), which can shed light on reactions linked to behaviors such as arousal and emotional control.

Sophisticated brain imaging methods such as positron emission tomography and functional magnetic resonance imaging can offer insights into how the brain functions in connection with behaviors by uncovering neural links and potential biomarkers tied to such behavior, according to Raine et al. (2000).

Methods

In this section, we will provide an in-depth exploration of the individuals involved in the study, the instruments utilized for data collection, the methodology for gathering data, and the statistical analysis methods applied.

Participants

We picked adults aged 18 to 26 from various cultural backgrounds to study antisocial behaviors in the Saudi Arabian youth community, effectively using a convenience sampling method without proper planning by selecting units from the target population casually. This common nonprobability sampling approach is generally suitable for research in the humanities.

According to the methods outlined by Al Suhail (2003), a total of 1076 individuals (567 males and 509 females) were selected from the specified population to form the sample group with attributes presented in Table 1.

Table 1
Characteristics of The Sample

		N	%
Gender	Male	567	52.7
	Female	509	47.3
	Total	1076	100
Age	18 – less than 20	230	30.3
	20 – less than 22	330	34.3
	22 – less than 24	170	22.4
	24 - 26	29	3.8
	Missing Data	113	10.5
	Total	1076	100
Academic Specializations	Scientific Colleges	449	41.7
	Humanities Colleges	627	58.3
	Total	1076	100

Note. *N = Sample Size. % = Valid Percentage*

The study benefits from a sample of 1076 people, both male and female, who were chosen from Saudi Arabia's youth population and ranged in age from 18 to 26. The determination of sample size adheres to established protocols, demonstrating methodological accuracy. The diverse backgrounds and cultural influences of the participants enrich the study's findings. Make them widely applicable while the transparent disclosure of participant details, in Table 1, strengthens the study's credibility.

In terms of this and after consideration, it seems like our sample adequately reflects the target population for this study. This is because of the range of ages, equal representation across genders, varied demographics, large sample size, and appropriate sampling method used.

Measures

The Self-Report Psychopathy Scale

The Self-Assessment Psychopathy Inventory (SRPI 4) created by Paulhus and colleagues in 2017 and consisting of 64 items tailored to evaluate traits in individuals aged 18 and above in situations is commonly employed for this purpose. The four components of SRP 4 include traits related to manipulation and deceitfulness (interpersonal factor IPM) disturbances, emotional connections with others (affective factor CA) impulsive and unpredictable behavior patterns (lifestyle factor ELS), and a tendency to ignore social norms, like delinquency and criminal behavior (antisocial factor CT) as defined by Massa and Eckhardt (2017). Each dimension comprises 16 items making it an even distribution. Participants rate the extent to which specific personality traits apply to them using a 5-point Likert Scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

The four facets are grouped into two factors: the first consists of the first two facets that are IPM and CA, while the ELS and CT facets comprise the second factor. Individuals scoring high on the first factor are diagnosed as selfish and callous, using others without feeling guilt or remorse. Those scoring high on the second factor are diagnosed as suffering from chronic instability and antisocial disorder, living a socially deviant lifestyle. Individuals scoring high overall are diagnosed as psychologically disturbed, exhibiting multiple, recurrent, and severe psychopathological traits (Paulhus et al., 2017).

The Self-Report Psychopathy Scale (SRP 4) offers two versions: a shorter variant and a full-length one. While the short form comprises fewer items (29 items) compared to the full version (64 items), both demonstrate a strong correlation ($r = .92$; Paulhus et al., 2017) and align with the four-facet model (Gordts et al., 2017). Despite this correlation, we have chosen to utilize the full SRP 4 due to its inherent advantages, including a more comprehensive assessment, specific measurement, improved criterion validity, better facilitation of comparative analysis, and alignment with our research objectives. Therefore, while acknowledging the strong correlation with the short form, we find validation of the complete version more advantageous.

The researchers followed the guidelines for translating and adapting tests as stipulated by Hernández, Hidalgo, Hambleton, & Gómez (2020), along with other pertinent studies by Beaton et al. (2000), Tsang, Royse, & Terkawi (2017), and Hambleton & Lee (2013). This comprehensive approach was undertaken to guarantee the suitability and efficacy of the test within the Saudi Arabian context.

The SRP 4 was translated into Arabic using four main methods. Among these processes is (1) *Forward Translation*, in which a skilled translator translated the SRP 4 into Arabic from its original language. (2) *Backward Translation*: To guarantee accuracy and consistency, it was translated back into the original language by another qualified translator. (3) *The Committee of Experts* To ensure linguistic and cultural equivalency and

spot any differences, a panel of specialists in psychometrics and translation examined both the forward and back translations. Finally, before the translated instrument was finalized, a small sample of Arabic-speaking people was given the translated version of the SRP 4 for (4) *preliminary pilot testing translation*. The participants in the pilot study were asked to provide detailed explanations of their interpretation of each item and its corresponding response. All that was done to assess comprehension, clarity, and cultural appropriateness.

Personal information form

The personal information form was crafted to collect precise demographic information from participants, encompassing details such as age, gender, and academic specialization. This demographic data was essential for describing the study's findings and facilitating comparisons with similar research studies.

Data Collection Process

The study used convenience sampling, a nonprobability sampling technique, to collect data from a group of college students. After being made aware of the objectives of the study, participants were asked to voluntarily respond to SRP 4 questions on a 5-point Likert scale, where 1 represented a strong disagreement and 5 represented a strong agreement. Most participants needed ten to fifteen minutes to finish the SRP 4 scale in an understandable and efficient manner.

Data Analysis

To address all research objectives, both descriptive and inferential statistical procedures were carried out for this study using SPSS 25.0. The reliability of the scale was assessed by computing Cronbach's alpha (α) and the Guttman Split-Half Coefficient. Additionally, the item-total correlation was calculated using SPSS 25.0 to assess the validity of the scale.

The relationship between a test's individual items and the test score is evaluated using item-total correlation. It assists in ascertaining if each item contributes to the measurement of the construct that the test is evaluating. Concept validity is demonstrated by higher correlations between individual items and the overall score, which implies that the items measure the same underlying concept as the test (Cohen, & Swerdlik, 2018).

Results

Before presenting the statistical analysis results of our survey data, it's crucial to emphasize the classification of both raw scores and T scores for each facet of the scale and its corresponding factors in SRP 4. This will facilitate our diagnostic processes. Table 2 shows the interval of raw scores for each facet, factor, and for the total score in SRP 4, referencing

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the college sample, comprising 788 undergraduate students from a university in the USA. Among the sample, 34.8% were male, with an average age of 20.7 years (SD = 3.9 years, Range = 20-57 years), with the majority (90.9%) aged 24 years or younger.

Table 2

Raw Score and T Score Ranges for Each Class in SRP 4 Based on USA College Students

Factor Name		IPM	CA	ELS	CT	Factor 1	Factor 2	Total Score
Classi- fication	T Score	Raw Scores						
Low	30-39	16-28	16-27	16-31	16	32-57	32-49	64-110
Average	40-59	29-47	28-44	32-50	17-32	58-90	50-80	111-168
Elevated	60-69	48-57	45-53	51-60	33-40	91-107	81-95	148-197
Extre- mely Elevated	70-80	58-80	54-80	61-80	41-80	108- 160	96-160	198-320

Note. IPM = interpersonal factor. CA = affective factor. ELS = lifestyle factor. CT = antisocial factor. Factor 1 = The sum of IPM and CA. Factor 2 = The sum of ELS and CT. Total Score = The sum of IPM, CA, ELS, and CT. Source: Paulhus et al., 2017.

Raw scores on the SRP 4 are computed by summing up the numerical values of the item responses provided by a respondent. Higher scores on the SRP 4 indicate more pronounced psychopathic characteristics, whereas lower scores suggest fewer such traits. For instance, a raw Total Score of 200 signifies a significantly higher level of psychopathy compared to a raw Total Score of 100. However, interpreting differences among raw scores can be challenging; these scores cannot be meaningfully compared between individuals, nor can an individual's scores on different subscales be compared to each other, as they all have distinct means and standard deviations. To facilitate result interpretation, raw scores need to be converted to standardized scores (Paulhus et al., 2017). In the context of the SRP 4, standardized scores typically refer to T-scores. T-scores have a mean of 50 and a standard deviation of 10 in a normal distribution. These scores are derived from raw scores using a formula that standardizes the scores to a common scale.

Table 3 displays the classification of both raw scores and T scores for each facet, factor, and total score in SRP 4, obtained from an investigation comprising 1076 university undergraduates from Saudi Arabia. These classifications serve to establish norms for interpreting SRP 4 scores among the Saudi Arabian university undergraduate population, thus addressing the initial research question.

Table 3

Raw Score and T Score Ranges for Each Class in SRP 4 Based on Saudi Arabia College Students

Factor Name		IPM	CA	ELS	CT	Factor 1	Factor 2	Total Score
Classi- fication	T Score	Raw Scores						
Low	30-39	16-36	16-34	16-30	16-17	32-73	32-50	64-126
Average	40-59	37-51	35-48	31-47	18-39	74-97	51-84	127-179
Elevated	60-69	52-58	49-55	48-56	40-49	98-109	85-101	180-206
Extre- mely Elevated	70-80	59-80	56-80	57-80	50-80	110-160	102-160	207-320

Note. IPM = interpersonal factor. CA = affective factor. ELS = lifestyle factor. CT = antisocial factor. Factor 1 = The sum of IPM and CA. Factor 2 = The sum of ELS and CT. Total Score = The sum of IPM, CA, ELS, and CT.

Table 4 offers a comprehensive overview of the Self-Report Psychopathy Scale, 4th Edition (SRP-4) scores, encompassing college students from the USA (categorized as a reference group), Europe, and Saudi Arabia. It delineates scores relating to the overall SRP-4 assessment, two factors, and distinct facets (IPM, CA, ELS, CT).

In-depth analysis of extensive datasets, such as those outlined here, requires a careful evaluation of statistical significance. It's essential to recognize that significant tests not only indicate the magnitude or importance of a test result (Cohen, 1988; Thompson, 2002). The significance of a test is contingent upon both sample size and effect size; larger sample sizes heighten the likelihood of achieving statistical significance. With sample sizes nearing 800 respondents, it becomes imperative to assess not only the statistical significance but also the strength of the effect (Paulhus et al., 2017).

Effect size serves as a crucial statistic indicating the magnitude of the difference between the groups being compared. Instead of solely focusing on whether a finding is statistically significant (p-value), it aids in comprehending the practical significance

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of the result. Cohen's d index, calculated as: $d = (M1 - M2) / \text{spooled}$, where M1 and M2 represent the group means and spooled is the pooled standard deviation (average standard deviation of both groups), quantifies the difference between two means in standard deviation units. A higher Cohen's d value indicates a greater disparity across the groups. Effect sizes are classified as small if $d = 0.2$, medium if $d = 0.5$, and large if $d = 0.8$ (Cohen, 1988).

Table 4

Descriptive statistics of SRP 4 raw scores for a sample of college students from the USA (reference sample), Europe, and Saudi Arabia

Sample	Elements	SRP 4 Raw Scores			
		Mean	SD	Min.	Max.
USA Sample (Reference N = 788)*	Total	141.0	29.1	68	225
	Factor 1	75.0	16.7	34	133
	Factor 2	66.0	15.3	32	123
	IPM	38.8	9.7	17	70
	CA	36.2	8.8	16	63
	ELS	41.4	9.7	16	73
	CT	24.6	8.0	16	61
European Sample (N = 389)*	Total	130.1	24.1	77	254
	Factor 1	69.6	14.0	39	120
	Factor 2	60.5	12.9	35	134
	IPM	37.1	8.9	18	66
	CA	32.4	6.7	20	61
	ELS	39.5	8.9	19	74
	CT	21.9	6.0	16	60
Saudi Arabia Sample (N = 1076)*	Total	154.4	26.6	74	246
	Factor 1	85.9	12.2	48	133
	Factor 2	68.5	17.1	23	126
	IPM	44.2	7.2	24	75
	CA	41.6	6.9	20	62
	ELS	39.7	8.6	12	80
	CT	28.8	10.8	2	63

Note. IPM = interpersonal factor. CA = affective factor. ELS = lifestyle factor. CT = antisocial factor. Factor 1 = The sum of IPM and CA. Factor 2 = The sum of ELS and CT. Total Score = The sum of IPM, CA, ELS, and CT. SD = Standard Deviation. Min. = Minimum Raw Score of SRP 4. Max. = Maximum Raw Score of SRP 4.

Based on the provided results for the Saudi Arabian college sample in the SRP-4 assessments at Table 3 and Table 4, the mean total score is 154.4, indicating an *average* level of psychopathic traits within the sample. Factor 1, assessing interpersonal and affective traits, has a mean score of 85.9, suggesting an *average* level of manipulateness and lack of empathy. Factor 2, evaluating lifestyle and antisocial traits, has a mean score of 68.5, also indicating an *average* levels of impulsivity and irresponsibility. Among individual facets, the Impulsive and Irresponsible Lifestyle (IPM) has a mean score of 44.2, the Criminal Antisocial (CA) facet means at 41.6, the Erratic Lifestyle (ELS) scores 39.7 on mean, and the Criminal Traditions (CT) facet has a mean score of 28.8. These results collectively depict a profile of *average* psychopathic traits and behaviors among Saudi Arabian college students across various dimensions assessed by the SRP 4.

Creating Table 5 to display Cohen's d values to indicate effect sizes across the three groups would provide valuable insight into the practical significance of the differences observed. This presentation allows for a clear comparison of effect sizes across different components of the SRP-4 assessment among the three groups (the USA, European, and Saudi).

Table 5

The effect sizes across different components of the SRP-4 assessment among the three samples Cohen's d values

The Samples		Saudi Arabia Sample (N = 1076)	
	Elements	Cohen's d value	Effect Size
USA Sample (Reference N = 788)	Total	-0.48	small
	Factor 1	-0.76	medium
	Factor 2	-0.15	small
	IPM	-0.65	medium
	CA	-0.70	medium
	ELS	0.19	small
	CT	-0.43	small
European Sample (N = 389)	Total	-0.94	large
	Factor 1	-1.28	large
	Factor 2	-0.50	medium
	IPM	-0.92	large
	CA	-1.34	large
	ELS	-0.02	small
	CT	-0.71	medium

Note. IPM = interpersonal factor. CA = affective factor. ELS = lifestyle factor. CT = antisocial factor. Factor 1 = The sum of IPM and CA. Factor 2 = The sum of ELS and CT. Total Score = The sum of IPM, CA, ELS, and CT.

Table 5 displays the Cohen's d values, indicating the effect sizes or the extent of differences, between the USA and Saudi samples across different aspects of the SRP-4 evaluation. Specifically, a Cohen's d value of -0.48 for the total component implies a moderate effect size, highlighting a noticeable distinction in the total SRP-4 scores between the USA and Saudi samples, with the USA sample demonstrating slightly lower scores on average compared to the Saudi sample.

For Factor 1, a Cohen's d value of -0.76 indicates a large effect size, implying a considerable difference in Factor 1 scores between the two samples. Specifically, the USA sample exhibits significantly lower scores on Factor 1 compared to the Saudi sample. Conversely, Factor 2's Cohen's d value of -0.15 suggests a small effect size, indicating a minimal difference in Factor 2 scores between the USA and Saudi samples.

The Cohen's d values for each facet are as follows: IPM has a Cohen's d value of -0.65 , indicating a moderate to large effect size and suggesting a noticeable distinction in IPM scores between the two samples, with the USA sample displaying lower scores on average compared to the Saudi sample. CA exhibits a Cohen's d value of -0.70 , implying a moderate to large effect size and indicating a significant difference in CA scores between the USA and Saudi samples, with the USA sample showing lower scores on average. The ELS analysis reveals a Cohen's d value of 0.19 , indicating an effect size and showing variation in ELS scores between the two groups studied here. In contrast to that is the CT analysis, which exhibits a Cohen's d value of 0.43 , indicating an effect size and hinting at a difference in CT scores between the two groups, with the US group showing marginally lower scores, on average, compared to the Saudi group.

In terms of effect sizes, across assessment components as shown by these values vary; it's important to highlight that based on the categorization by Paulhus et al (2017) the average scores of the participants for all aspects of SR4 imply a moderate level of psychopathic characteristics akin to those seen in American and European participants.

Discussion

The study found an average level of psychopathic traits within the Saudi college student sample based on the SRP-4 assessment. This indicates that the majority of students scored within the average range classified by Paulhus et al. (2017). The analysis revealed a moderate to large effect size for the total score and some facets (Factor 1, IPM, CA, CT) between the American and Saudi samples. This suggests a noticeable difference, with Saudi students scoring slightly higher on average. The results include data from Europe alongside the US and Saudi samples, allowing for further comparison of psychopathy levels across these regions.

The focus on statistical significance is acknowledged, but the importance of effect size is emphasized. Calculating Cohen's d provides a clearer picture of the magnitude of the differences observed between groups. The results only represent a specific sample of Saudi Arabian college students and might not be generalizable to the entire population.

The study doesn't delve into potential cultural factors that might influence the interpretation of psychopathy scores.

The findings suggest an average level of psychopathic traits, but further investigation is needed to identify individuals with potentially concerning scores requiring clinical evaluation. The study paves the way for exploring the reasons behind the observed differences between the US and Saudi samples.

It's crucial to remember that these are just potential discussions based on the provided information. A complete understanding would require access to the full research paper and a deeper analysis of the methodology and limitations.

Based on the findings presented, the study draws several conclusions. Firstly, regarding psychopathy levels among Saudi students, the study suggests that most college students in the Saudi Arabian sample exhibited average psychopathic traits according to the SRP-4 assessment, indicating scores within the normal range. A moderate to large effect size was observed between the American and Saudi samples, particularly in the total score and specific facets like Factor 1 traits and manipulativeness, suggesting slightly higher scores among Saudi students compared to their American counterparts. However, while European data was included, the study did not explicitly compare Saudi students with the European group, warranting further analysis for a comprehensive understanding.

The study also underscores the importance of standardizing scores, such as converting raw scores to T scores, to facilitate the interpretation of psychopathy assessment results across different populations. This standardization allows for meaningful comparisons and diagnostic processes. The research emphasizes that college students from different backgrounds show similar levels of psychopathic traits when compared cross-culturally; this is supported by the comparable average scores on the SRP 4 components observed in samples from the USA

Moreover, examining the impact magnitudes using Cohen's d values offers perspectives on the real-world importance of variations seen in the USA and Saudi sample data across aspects of the SRP-4 questionnaire. Although variances are present, between them

The research highlights how the SRP P assessment can help identify traits in college students by offering scores and aiding in understanding various aspects and elements of the diagnosis process. The study also proposes directions for studies such as investigating variations in the occurrence and display of psychopathy within college communities and evaluating the impact of interventions customized for specific cultural settings.

In summary, the research adds to our knowledge of evaluating psychopathy in college students from different backgrounds by emphasizing the significance of consistent scoring methods, cross-cultural evaluations, and examining effect sizes when interpreting assessment outcomes. These discoveries hold relevance for applications, research approaches, and forthcoming investigations in the sphere of evaluation and treatment.

Ethics Statement

The research adhered to ethical standards throughout, ensuring participants were fully informed of the study's purpose, procedures, risks, and their right to withdraw consent. Confidentiality was safeguarded through data anonymization, and measures were implemented to minimize any potential risks or discomfort for volunteers. It's noteworthy that despite the absence of an ethics committee at the universities where data was collected, ethical protocols were rigorously followed.

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Conflict of Interest Information

The authors have no conflicts of interest to declare.

Job Satisfaction and Turnover Intentions of Expatriate Non-Native English-Speaking Teachers in China

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Abstract

Introduction. This study explores the relationship between job satisfaction and turnover intentions among expatriate non-native English-speaking teachers in China. With the increasing demand for international educators, particularly in China, improving teacher retention is essential. While turnover in international schools has been studied extensively, research on expatriate non-native English-speaking teachers in China remains limited.

Methods. A mixed-methods approach was used to survey 158 expatriate non-native English-speaking teachers in China, employing the Job Satisfaction Survey and Turnover Intention Scale for quantitative data, alongside an open-ended question for qualitative insights. Data were analyzed using descriptive statistics, correlations, multiple regression, and thematic coding. **Results.** A significant negative correlation was found between job satisfaction and turnover intentions ($r = -0.712$, $p < 0.001$). Both extrinsic factors (e.g., pay, working conditions) and intrinsic factors (e.g., relationships with coworkers, communication) were identified as key drivers of turnover intentions. The regression model revealed that job satisfaction accounted for 50.7% of the variance in turnover intentions, emphasizing its substantial role in teachers' decisions to leave. **Discussion.** These findings highlight the importance of improving both extrinsic and intrinsic factors to reduce turnover intentions among expatriate non-native English-speaking teachers. Strategies such as stay interviews and enhanced career development opportunities can help retain teachers and boost job satisfaction. By addressing both intrinsic and extrinsic factors of job satisfaction, schools can reduce teacher turnover intentions, ensuring stability and continuity in education.

Keywords

job satisfaction, turnover intentions, expatriate teachers, non-native english-speaking teachers, teacher retention, international education, China

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Introduction

The global demand for qualified educators has led to increased mobility of teachers internationally. Additional pressure on this state is intensified by UNESCO's (2024) prediction that 44 million more teachers will be required by 2030 to ensure that every child has access to education. Teacher shortage has been observed in many regions, forcing schools to rely on temporary or even unqualified teachers to fill vacancies. While international schools offer unique opportunities for educators, they are not immune to this global trend. In fact, some of the greatest challenges they face are attracting and retaining qualified teachers (Mancuso et al., 2010).

Teacher turnover in international schools is influenced by various factors, including leadership styles, compensation and benefits packages, working conditions, as well as challenges related to cultural adjustment (Mancuso et al., 2010). High teacher turnover significantly impacts education systems. Frequent staff transitions disrupt continuity, hinder students' academic progress, and complicate the consistent implementation of curricula and instructional strategies (Ronfeldt et al., 2013; Sorensen & Ladd, 2020). Furthermore, turnover can destabilize school culture, weaken a sense of belonging, and place financial burdens on schools due to the costs of recruitment and training (Lee et al., 2012). Understanding factors that influence turnover intentions among expatriate teachers can help educational institutions in creating effective retention strategies.

Job satisfaction is a critical factor when it comes to understanding why teachers choose to stay in or leave their jobs. Studies show that satisfied teachers are more likely to remain in their roles, while dissatisfied teachers tend to leave (Ingersoll, 2001; Skaalvik & Skaalvik, 2011). Various factors influence job satisfaction within the teaching profession. Aspects such as equitable compensation, reasonable workloads, supportive administrators, and professional development opportunities all contribute significantly (Loeb et al., 2005; Mancuso et al., 2011). By prioritizing these elements, schools can effectively reduce turnover.

For expatriate teachers, job satisfaction is even more important. They deal with challenges that go beyond the classroom, like adjusting to a new culture, adapting to

unfamiliar workplaces, and often living without strong social or family support systems (Chu & Morrison, 2011; Dos Santos, 2019). When teachers feel satisfied with their jobs, they tend to overcome these challenges. Conversely, if they lack satisfaction, they are more likely to consider leaving.

The global number of international schools has surged by 50%, reaching over 14,000, with student enrolment increasing by 57% to a total of 7.3 million (ISC, 2024). Asia leads this expansion, particularly Eastern Asia, which covers 57% of all international schools and experienced a 16% growth even during the pandemic (ISC, 2023). As a result, the need for qualified teachers has grown significantly. ISC (2024) predicts that the international school workforce, which has expanded by 60% over the past decade, will need an additional 160,000 teachers by 2028. A large portion of these roles will likely be filled by expatriate non-native English-speaking teachers. Holborow (1999) points out that most of the global population resides in countries where English is a second language, and Braine (2010) estimates that 80% of English teachers worldwide are non-native speakers. However, much of the existing research has focused on native English-speaking teachers, often neglecting the broader experiences of expatriate non-native English-speaking educators. These teachers bring unique perspectives, shaped by their cultural experiences, teaching styles, and language skills, that can greatly enhance the learning environment. Ignoring their roles and challenges leaves a gap in the literature, which fails to fully capture the diversity of international teaching contexts. Expanding research to include these voices is crucial for a more complete understanding of global educational dynamics.

This lack of research is problematic because expatriate non-native English-speaking teachers face unique challenges in the international school setting. They often deal with biases related to their non-native speaker status, which can affect their confidence, job satisfaction, and even how they are treated by students, parents, and administrators (Selvi, 2010). Additionally, expatriate non-native English-speaking teachers might receive lower salaries or fewer benefits compared to their native-speaking counterparts, which can further impact their satisfaction and likelihood of staying in their roles (Maganaka, 2023).

The current study addresses this gap by focusing on expatriate non-native English-speaking teachers in China's international schools. With the growing importance of these teachers in meeting the demand for qualified educators, understanding their job satisfaction and its impact on turnover intentions is essential. By examining this underrepresented group, this research aims to provide insights that can help schools better support expatriate non-native English-speaking teachers and reduce turnover.

Theoretical Framework

Herzberg's Two-Factor Theory explains how job satisfaction operates by categorizing its determinants into two groups: motivators and hygiene factors. Motivators, such as recognition, professional growth, and achievement, are intrinsic factors that actively enhance job satisfaction. In contrast, hygiene factors, including salary, working conditions,

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and job security, do not inherently increase satisfaction but can cause dissatisfaction when absent (Herzberg et al., 1959). For expatriate non-native English-speaking teachers, hygiene factors like adequate pay, sufficient support for cultural adjustment, and stable working conditions are foundational to maintaining satisfaction. At the same time, motivators, such as career advancement opportunities and acknowledgment of their professional skills, can boost engagement and commitment. This study applies Herzberg's framework to analyze how these factors jointly contribute to job satisfaction and subsequently affect turnover intentions.

Social Exchange Theory (Blau, 1964) focuses on the reciprocal nature of workplace relationships. According to this theory, employees evaluate their workplace based on the balance of what they give—such as effort, loyalty, and expertise—and what they receive, such as fair treatment, support, and opportunities (Cropanzano & Mitchell, 2005). When the perceived balance is fair, employees feel valued and are more likely to remain with their organization. However, when the exchange feels inequitable or insufficient, dissatisfaction and turnover intentions increase. For expatriate non-native English-speaking teachers, factors like inclusion, organizational support, and fair treatment play a critical role in shaping these perceptions. This study uses Social Exchange Theory to explore how perceived reciprocity and workplace support influence expatriate non-native English-speaking teachers' satisfaction and their decision to stay or leave.

Literature Review

Job satisfaction is a complex concept that reflects how employees view and experience their roles. It includes various elements, such as the work environment, interpersonal relationships, pay, growth opportunities, and the alignment of job roles with personal values (Spector, 1997; Herzberg, 1968). Herzberg's Two-Factor Theory (1959) offers a useful framework for understanding job satisfaction. According to Herzberg, job satisfaction is influenced by both intrinsic and extrinsic factors. Intrinsic factors, such as recognition and career development, serve as "motivators" that encourage employees to perform well and stay in their jobs, while extrinsic factors, like salary, working conditions, and job security, act as "hygiene factors" that prevent dissatisfaction but do not necessarily drive motivation (Herzberg et al., 1959).

Research on job satisfaction in education has shown that a variety of factors contribute to teachers' satisfaction, including their work environment, relationships with colleagues, and opportunities for professional growth (Guoba et al., 2022; McJames et al., 2023; Toropova et al., 2021). Specifically, in international schools, additional factors such as cultural adjustment and integration into the host community, positive interaction with school leaders, and supportive colleagues play a pivotal role in shaping job satisfaction (Yoshihara, 2018).

However, while extensive research has been conducted on teacher job satisfaction, studies specifically addressing expatriate non-native English-speaking teachers, especially

in rapidly growing educational markets like China, remain scarce. Thus, exploring the factors contributing to job satisfaction of expatriate non-native English-speaking teachers in China presents an opportunity to fill a significant gap in the literature and provide practical recommendations for schools and policymakers.

Turnover intention, defined as the conscious decision to consider leaving an organization (Tett & Meyer, 1993), is a strong predictor of actual turnover (Griffeth et al., 2000; Kaur et al., 2013). Numerous factors contribute to turnover intentions, including low job satisfaction, lack of organizational support, unmet expectations, and stress (Mobley, 1977; Hom et al., 1992). Recognizing and addressing turnover intentions early is crucial for retention.

Factors influencing turnover include teachers' desire for mobility, short-term contracts, misrepresentation during recruitment, and inadequate professional support (Odland & Ruzicka, 2009; Dos Santos, 2020; Tkachyk, 2017). Moreover, economic factors, including compensation and work-life balance, as well as working conditions and school support, are also significant predictors (Loeb et al., 2005; Mancuso et al., 2011). Additionally, uncertainty about job security, such as unexpected budget cuts or terminations, intensify turnover intentions (Amodio, 2015; Rey et al., 2020). Given the diverse range of factors that affect teacher turnover, a holistic approach is essential for effective early detection and intervention.

International schools are particularly susceptible to high turnover rates, with some regions in East Asia reporting turnover rates as high as 20% to 50% (Tkachyk, 2017). Similarly, Near East South Asia (NESA) international schools have documented average turnover rates of 17%, with some schools experiencing turnover rates as high as 60% (Mancuso et al., 2010). Studies of South American international schools indicate an annual turnover rate of 28% (Desroches, 2013), while in Thailand, turnover rates range from 16% to 20% (Ngotngamwong, 2012). Bunnell (2014) reported a 30% turnover rate in Dubai. In the context of international schools, high turnover rates are frequently linked to challenges like isolation, misalignment with organizational culture, and inadequate support systems (Odland & Ruzicka, 2009).

High turnover intentions can have wide-reaching consequences for both educational institutions and students. For individual teachers, the desire to leave can lead to professional burnout and emotional distress, particularly when compounded by cultural and professional challenges. Moreover, dissatisfaction of this kind can lead to disengagement and actual turnover, reinforcing the idea that turnover intentions often originate from cumulative dissatisfaction (Hayden & Thompson, 2008) and as a psychological process of withdrawal (Fang & Wang, 2006).

High turnover disrupts learning continuity, increases recruitment costs, and affects overall school performance (Ronfeldt et al., 2013). International schools face additional hurdles as they invest heavily in recruiting expatriate teachers, often offering higher salaries, relocation benefits, and housing allowances to attract candidates (Odland &

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Ruzicka, 2009). In a case study by ISC Research (2021), one head of a school in Shanghai stated that recruiting new expatriate teachers is still a major challenge, and one of the ways to meet the demand is paying over the odds initially to attract staff. Consequently, when these teachers leave prematurely, investments are lost, creating both financial and organizational strain. In the context of international schools in China, this can be particularly problematic as the demand for qualified teachers continues to rise, and the pool of qualified expatriate teachers remains limited. High turnover can result in a less experienced and less stable workforce, schools have no choice but to hire unqualified teachers, often young and inexperienced, or second-career educators lacking proper training, often on short-term contracts (Marinell & Johnson, 2014; Troesch & Bauer, 2020). According to Teach Away (2023), 48% of teachers presently do not possess a teaching license. Darling-Hammond (2022) indicates that a significant proportion of new teachers hired without formal preparation, are more likely to exit the teaching profession. Eventually all of this may impact the school's ability to deliver high-quality education consistently. Thus, there is an urgent need for comprehensive teacher preparation programs, since inexperienced educators lacking adequate training are two to three times more likely to exit teaching profession compared to those who go through formal training (Ingersoll et al., 2014).

The relationship between job satisfaction and turnover intentions is well-documented in the literature. Studies have shown that lower job satisfaction is a strong predictor of higher turnover intentions (Tett & Meyer, 1993; Steel, 2002). In the teaching profession, dissatisfaction with leadership support, workload, or opportunities for professional development often translates into intentions to leave (Bunnell & Poole, 2021; Dos Santos, 2020; Skaalvik & Skaalvik, 2017). Dissatisfaction is a strong predictor of turnover intentions, with factors like lack of recognition, limited growth opportunities, and poor work conditions driving employees to seek alternative employment (Carver-Thomas & Darling-Hammond, 2017; Griffeth et al., 2000; Hom et al., 1992).

This study broadens the existing literature by examining non-native English-speaking expatriate teachers in China, a group that has been underexplored in the context of job satisfaction and turnover intentions. Understanding this relationship is crucial for identifying actionable strategies to enhance teacher retention and mitigate the negative effects of high turnover on schools.

Research Objective

To examine the levels and relationship between job satisfaction and turnover intentions among non-native English-speaking expatriate teachers working in China.

Research Hypotheses:

- H_0 : There is no significant relationship between job satisfaction and turnover intentions among non-native English-speaking expatriate teachers in China.
- H_1 : There is a significant relationship between job satisfaction and turnover intentions among non-native English-speaking expatriate teachers in China.

Methods

Participants

The study involved 158 expatriate non-native English-speaking teachers from international schools across China. Most participants were male (61.4%) and aged between 25–34 years (55.1%). Regarding marital status, 47.5% were single, 36.1% married, and 16.4% were in other relationships. In terms of teaching experience, 34.2% had 1–3 years of domestic experience, and 36.7% had 4–6 years of international teaching experience. Almost half had lived in China for over five years (49.4%). The majority of teachers worked in kindergartens (34.8%) and held bachelor's degrees (60.8%). The sample was highly diverse, with participants coming from 60 nationalities, including those from Europe (80), Africa (38), Asia and Oceania (26), and Latin America/Caribbean region (14). These demographics reflect a highly diverse sample, providing a comprehensive representation of expatriate teachers working in China.

Research Design

The research design employed a mixed-methods approach, combining both quantitative and qualitative data to gain a deeper understanding of the relationship between job satisfaction and turnover intentions. This approach allows for a comprehensive exploration of the relationship between the variables while also providing nuanced insights from open-ended responses. The survey started with a section gathering demographic information, followed by Turnover Intention Scale and Job Satisfaction Survey, ending with an open-ended question.

Instruments

Turnover Intention Scale (TIS-6), adapted from Roodt's (2004) original 15-item scale, was used to measure participants' turnover intentions. The TIS-6 consists of six items that assess the likelihood of participants leaving their job. The scale utilizes a 5-point semantic differential scale and has shown excellent reliability and validity in various studies (Bothma & Roodt, 2013).

Job Satisfaction Survey (JSS) is a 36-item scale developed by Spector (1985) to measure job satisfaction. It consists of nine subscales: Pay, Promotion, Supervision, Fringe Benefits, Contingent Rewards, Operating Procedures, Coworkers, Nature of Work, and Communication. Each subscale is measured with four items. The JSS has been widely used in research across various sectors, showing strong validity and reliability (Spector, 1985).

Both the TIS-6 and JSS have demonstrated high reliability and validity in previous studies. The TIS-6 has shown strong internal consistency with a Cronbach's alpha of 0.78 in the current study, which is consistent with the findings of Bothma and Roodt (2013) who reported an alpha of 0.80. For the Job Satisfaction Survey, comprising 36 items across

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nine subscales, overall Cronbach's alpha in this study was 0.92, demonstrating excellent reliability, ensuring that it provides a valid measure of various facets of job satisfaction.

Open-ended Question: A single open-ended question was included to gather qualitative data regarding participants' experiences and views on job satisfaction and turnover intentions. Responses were coded manually and categorized into domains based on recurring themes related to the study's objectives.

Data Collection

Data were collected over a six-week period from January to February 2024 using an online survey hosted on Google Forms. Participants were recruited through chain referral sampling, where initial participants shared the survey link within their professional networks, particularly in online expatriate teacher groups. Prior to completing the survey, participants provided informed consent and were assured of confidentiality and anonymity. The survey was distributed with an optional contact email for participants interested in receiving study results.

Data Analysis

Data analysis was conducted using SPSS version 27. Descriptive statistics were first computed to summarize the demographic characteristics and the key variables (TIS-6 and JSS). To examine the relationship between job satisfaction and turnover intentions, Pearson's correlation was employed to test the strength and direction of the relationship between the total job satisfaction score and turnover intentions.

Next, multiple regression analysis was conducted to explore how the subscales of job satisfaction predict turnover intentions. Assumptions of normality, linearity, and homoscedasticity were checked before performing the regression analysis. In addition to the quantitative analyses, open-ended responses were manually coded to identify recurring themes related to job satisfaction and turnover intentions. These responses were used to provide qualitative insights that complement the quantitative findings.

Results

The study involved 158 expatriate non-native English-speaking teachers in China. Table 1 presents the descriptive statistics for the overall Job Satisfaction scores and its subscales, as well as for the Turnover Intention Scale (TIS-6). The mean job satisfaction score was 132.4 (SD = 17.5), with the highest mean reported for the Contingent Rewards subscale (M = 14.6, SD = 2.3) and the lowest for Promotion (M = 11.5, SD = 3.7).

Table 1

Descriptive Statistics for Job Satisfaction and Turnover Intention Scales (n = 158)

Scale	Mean $\pm$ SD	α
Nature of Work	17.3 $\pm$ 2.8	.79
Coworkers	17.2 $\pm$ 2.7	.69
Supervision	16.8 $\pm$ 2.1	.75
Contingent Rewards	14.6 $\pm$ 2.3	.74
Communication	14.4 $\pm$ 3.1	.78
Pay	13.9 $\pm$ 2.9	.70
Operating Conditions	13.7 $\pm$ 2.7	.56
Fringe Benefits	12.9 $\pm$ 2.9	.71
Promotion	11.5 $\pm$ 3.7	.63
Job Satisfaction	132.4 $\pm$ 17.5	.92

Regarding Turnover Intentions, Table 2 provides descriptive statistics for the TIS-6 scale including each survey item. The mean turnover intention score was 3.16 (SD = 0.80). The highest mean score was observed for "dreaming about another job" (M = 3.77), suggesting frequent consideration of alternative employment opportunities. Conversely, the lowest mean score was reported for "job satisfaction in fulfilling personal needs" (M = 2.91), signifying notable dissatisfaction in this area.

Based on the threshold score of 18, participants were divided into two groups: low turnover intention (≤ 18) and high turnover intention (> 18). The results indicated that 43.7% of participants reported low turnover intention, while 56.3% had high turnover intention.

Table 2

Descriptive Statistics for TIS-6 Survey Items (n=158)

Survey Item	Mean $\pm$ SD
How often have you considered leaving your job?	3.22 $\pm$ 1.26
How satisfying is your job in fulfilling your personal needs?	2.91 $\pm$ 1.02

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Survey Item	Mean $\pm$ SD
How often are you frustrated when not given the opportunity at work to achieve your personal work-related goals?	2.97 $\pm$ 1.08
How often do you dream about getting another job that will better suit your personal needs?	3.77 $\pm$ 1.18
How likely are you to accept another job at the same compensation level should it be offered to you?	3.08 $\pm$ 1.25
How often do you look forward to another day at work?	3.04 $\pm$ 1.10
Turnover Intention Score	3.16 $\pm$ 0.80

The results of the correlational analysis between Job Satisfaction and Turnover Intentions are presented in Table 3. A strong negative correlation was observed between Job Satisfaction score and Turnover Intention ($r = -0.712$, $p < 0.001$), indicating that higher job satisfaction is associated with lower turnover intentions. Furthermore, all subscales of Job Satisfaction exhibited significant negative correlations with turnover intentions, with Pay ($r = -0.665$) and Communication ($r = -0.593$) showing the strongest correlations. The correlation effect sizes were predominantly large ($r > 0.5$), except for Promotion and Operating Conditions, which were moderate.

Table 3
Correlation Between Job Satisfaction Subscales and Turnover Intentions ($n = 158$)

Variable	r	p-value
Job Satisfaction	-0.712	< 0.001
Coworkers	-0.545	< 0.001
Pay	-0.665	< 0.001
Promotion	-0.407	< 0.001
Supervision	-0.485	< 0.001

Variable	r	p-value
Fringe Benefits	-0.500	< 0.001
Contingent Rewards	-0.574	< 0.001
Operating Conditions	-0.398	< 0.001
Nature of Work	-0.441	< 0.001
Communication	-0.593	< 0.001

Further analysis, including simple linear regression, was conducted to assess whether Job Satisfaction significantly predicted Turnover Intentions. The results, shown in Table 4, revealed that Job Satisfaction score explained 50.7% of the variance in turnover intentions ($R^2 = 0.507$, $p < 0.001$). The regression coefficient for JS was -0.128 ($\beta = -0.712$), indicating that an increase in job satisfaction is associated with a decrease in turnover intentions. These results reject H_0 and support the H_1 hypothesis that job satisfaction significantly predicts turnover intentions.

Table 4
Regression Analysis for Job Satisfaction Predicting Turnover Intentions ($n = 158$)

Predictor	B	SE B	β	T	p-value	R^2
Constant	35.932	1.364	-	26.340	<0.001	
Job Satisfaction	-0.128	0.010	-0.712	-12.671	<0.001	0.507

Next, a multiple regression analysis was conducted to explore whether the subscales of Job Satisfaction (including Coworkers, Pay, Promotion, Supervision, Fringe Benefits, Contingent Rewards, Operating Conditions, Nature of Work, and Communication) predicted Turnover Intentions. As shown in Table 5, the subscales explained 55.9% of the variance in turnover intentions ($R^2 = 0.559$, $p < 0.001$). Pay and Communication emerged as the most significant predictors of turnover intentions, with $\beta = -0.447$ and $\beta = -0.222$, respectively, both with large effect sizes.

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Table 5
Multiple Regression Analysis for Job Satisfaction Subscales Predicting Turnover Intentions (n = 158)

Predictor	B	SE B	β	T	p-value
Constant	33.886	1.273	-	26.626	<0.001
Pay	-0.509	0.100	-0.447	-5.104	<0.001
Communication	-0.225	0.074	-0.222	-3.055	0.003
Coworkers	-0.276	0.086	-0.217	-3.213	0.002

Note: R^2 : 0.559, Adjusted R^2 : 0.532, $F(3,154) = 60.224$, $p < 0.001$

In addition to the quantitative findings, the analysis of qualitative responses revealed key factors influencing expatriate non-native English-speaking teachers' job satisfaction and turnover intentions in China. Compensation and benefits emerged as a major concern, particularly the pay discrepancies based on nationality. As one teacher put it, "I feel salaries shouldn't be so different just because of passport" (R 28), illustrating frustration with unequal treatment. Equal hiring policies were also highlighted, where many expatriate teachers felt non-native speakers were unfairly overlooked in favor of native speakers, despite possessing equal or superior qualifications. One respondent shared, "It makes me angry when local leadership changes something at the last minute... it was just about the passport" (R 44). Discrimination at work further compounded the dissatisfaction, as participants felt their value as educators was undermined by biases based on their nationality.

Another recurring theme was the pay scale, with several teachers expressing concern over non-transparent salary structures. One teacher noted, "I moved to a smaller city for less competitiveness, but realized a far less qualified person is getting paid almost double what I am only because of the nationality and race" (R 8). Communication with local and foreign staff was another issue, with many reporting miscommunications due to cultural differences. "The Chinese staff is not frank and keeps problems until the last second" (R 6), highlighting how this lack of openness affected workplace dynamics. Moreover, trust, honesty, and support from school HR and leadership were significant concerns, contributing to a sense of disengagement. Workload was also cited as a critical factor affecting job satisfaction, with one teacher mentioning, "The workload is unimaginable, and it's affecting my mental health as I have to teach four different subjects each semester" (R 9). Motivation to stay in the profession was low, exacerbated by lack of advancement opportunities. "There is no room for advancement in this school" (R 9) pointed to how stagnation led to frustration. Finally, visa issues were seen as a constant

source of insecurity, with one respondent stating, "Visa issues are a big risk for me to lose my job as the government is changing policies all the time" (R 13). These factors collectively influenced turnover intentions, demonstrating how dissatisfaction with both extrinsic and intrinsic aspects of the job contributed to the decision to leave

The results of this study reveal a significant negative relationship between job satisfaction and turnover intentions. The regression analyses suggest that both overall job satisfaction and specific subscales, such as Pay and Communication are important predictors of turnover intentions among expatriate non-native English-speaking teachers in China. These findings are discussed further in the next section.

Discussion

This research aimed to investigate the relationship between job satisfaction and turnover intentions among expatriate non-native English-speaking teachers in China. Findings highlight a significant negative relationship between these variables, where higher job satisfaction corresponds with lower turnover intentions. This aligns with the substantial body of literature that links job satisfaction with employees' intention to leave an organization (Griffeth et al., 2000; Tett & Meyer, 1993). Furthermore, this study fills an important gap in the literature by focusing on a population that is often overlooked—expatriate non-native English-speaking teachers in China, a demographic that is becoming increasingly relevant due to the expansion of international schools.

The findings of this study demonstrate that several facets of job satisfaction, including pay, coworkers, and communication, are strongly related to turnover intentions. Most of all, the subscales of 'pay' and 'coworkers' showed the highest correlations with turnover intentions ($r = -0.665$ and $r = -0.737$, respectively), indicating that teachers who are dissatisfied with their compensation or have poor relationships with colleagues are more likely to consider leaving their jobs. These results align with Herzberg's Two-Factor Theory, which posits that external factors such as pay and interpersonal relationships are key contributors to job dissatisfaction. This is particularly relevant in the context of expatriate teachers, who may face additional stressors related to living and working abroad, such as cultural differences and separation from family. The study further reinforces Herzberg's idea that extrinsic factors play a crucial role in teacher retention in the context of international schools in China which aligns with previous research (Mancuso et al., 2011).

Social Exchange Theory (SET) also provides a useful framework for understanding the dynamics between job satisfaction and turnover intentions in this study. SET suggests that employees expect fair exchanges with their employers, where the rewards they receive are proportional to their efforts. When expatriate non-native English-speaking teachers sense that their efforts are not reciprocated, whether through inadequate compensation, lack of support from colleagues, or unclear communication, their intention to leave the job increases. This explains why factors like 'pay' ($r = -0.665$) and 'coworkers' ($r = -0.737$) had such a strong influence on turnover intentions in this study. Teachers who feel

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undervalued or unsupported in their roles are likely to seek opportunities elsewhere, which can create a cycle of high turnover in schools. These findings are consistent with that of Bunnell and Poole (2021) and Dos Santos (2020) who emphasized the importance of school leadership for expatriate teachers.

The implications of these findings are significant, particularly considering the continued growth of international schools in China. With more schools opening each year and a growing demand for teachers, retaining a stable and satisfied workforce becomes crucial. The high turnover intentions observed in this study suggest that many international schools may struggle to keep their teachers, which could lead to decreased student achievement, increased recruitment costs and financial instability. Schools should, therefore, implement retention strategies such as stay interviews which allow administrators to identify and address teachers' concerns before turnover intentions solidify. Additionally, better compensation packages, mentorship programs, and increased support for teachers' professional development can enhance a sense of belonging. This approach could mitigate dissatisfaction and improve retention by fostering a supportive work environment and addressing issues early.

Moreover, the results underline the need for greater attention to the specific needs of expatriate teachers in China, particularly those from non-native English-speaking backgrounds. As the pool of available teachers expands to include more non-native speakers, it becomes even more important for schools to address the factors that impact job satisfaction. Ensuring that teachers feel respected, supported, and fairly compensated will be essential for minimizing turnover and fostering long-term teacher retention.

While this study provides valuable insights, it is not without its limitations. The use of self-reported data may introduce bias, as participants may not always accurately reflect their true job satisfaction or intentions to leave. Further research could also examine the role of leadership in influencing job satisfaction among expatriate non-native English-speaking teachers. Specifically, studies could explore whether different leadership styles impact teacher retention and whether cultural differences in leadership approach affect expatriate teachers' job satisfaction. Future studies could explore the role of social and cultural integration on expatriate teachers' job satisfaction, as cultural adjustment is a significant factor in expatriates' experiences. Additionally, longitudinal studies could help to capture the long-term effects of job satisfaction on turnover intentions and provide deeper insights into the causal relationships. Finally, research comparing expatriate non-native English-speaking teachers' job satisfaction and turnover intentions across different countries could provide a more global perspective on the issue, offering insights into how international schools in various regions manage teacher retention.

Conclusion

This study examined the relationship between job satisfaction and turnover intentions among expatriate non-native English-speaking teachers in China, revealing a strong link: higher job satisfaction correlates with lower turnover intentions. These results align with

Herzberg's Two-Factor Theory and Social Exchange Theory, confirming that teachers who feel satisfied with aspects like pay, coworkers, and communication are less likely to consider leaving their positions.

The findings highlight the critical role of both extrinsic and intrinsic factors in shaping teachers' satisfaction and retention. With the rapid growth of international schools in China, the demand for qualified teachers is rising. To meet this demand, institutions must focus on improving both salary and benefits, as well as professional development, career growth, and work-life balance. Addressing these areas not only enhances job satisfaction but also significantly reduces turnover, which, in turn, helps maintain a stable and effective teaching workforce.

The consequences of low job satisfaction and high turnover are far-reaching: they lead to disruptions in teaching quality, financial costs for schools, and a loss of institutional knowledge. Schools must prioritize strategies to boost satisfaction by ensuring fair compensation, offering clear career progression, and fostering supportive working environments. These measures will promote teacher retention and contribute to the overall stability and success of educational institutions.

This study contributes valuable insights to the limited body of research on expatriate teachers in China, particularly non-native English-speaking teachers. By highlighting the importance of job satisfaction in reducing turnover intentions, this research provides actionable recommendations for schools to improve retention strategies, ultimately benefiting both educators and students.

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The authors have no conflicts of interest to declare.

Coping Strategies and Hardiness in Russian Youth in the Socio-Cultural Context of New Wars

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Abstract

Introduction. This study examines subjective assessments of military conflict (SMO) and hardiness in Russian youth with different types of coherence and intensity of coping strategies. For the first time, these variables were studied among Russian youth from different "regional circles of proximity" to military conflict. **Methods.** The sample comprised 583 participants, males (n = 66) and females (n = 517) aged 17–39 years, residing in three "circles of proximity" to military conflict. Psychological assessment tools included a semi-structured interview, the Assessment of Extreme Events semantic differential scale by T.V. Parfenova, The Perceived Military Threat Scale by K.V. Karpinsky, the Hardiness Scale by S. Maddi and D. Khoshaba modified by E. N. Osin, and the Brief COPE self-completed questionnaire by C. Carver. **Results.** Young people in the first circle use psychoactive substances much more frequently and deny the extreme stress of the SMO context. The second circle respondents use the Challenge strategy more frequently. Respondents in the third circle use the Instrumental Support Seeking strategy more often. Four types of coherence and intensity between coping strategies and a military threat are distinguished in young people, including (a) Type 1 – active, accepting, adaptive, (b) Type 2 – passive, emotional, adaptive, social support seeking, (c) Type 3 – passive, accepting, adaptive, and (d) Type 4 – active, undifferentiated, non-adaptive. **Discussion.** Commitment and Challenge strategies are more typical of Type 1 and Type 3 respondents, compared to Type 2 and Type 4 respondents. The lowest level of hardiness was found in Type 4 respondents with high intensity of all coping strategies. In the context of military conflict, young people with conditionally adaptive reactions, focused on active strategies and positive reappraisal that enables them to rationally perceive the situation, to see it

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from different perspectives and to make life choices under these conditions, are the most resistant to stress.

Keywords

socio-cultural context of stress, subjective assessment of military conflict, military threat, types of coping behavior, hardiness, "circle of proximity" to military conflict

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Introduction

The "new wars of the 21st century" are a powerful contemporary challenge, determining the processes of socialization and psychological well-being of young people (Kaldor, 2015). They combine military actions (for example, Special Military Operation to Denazify and Demilitarize Ukraine) and non-military ("hidden") forms of confrontation, including economic and socio-humanitarian isolation, fake media support, information attacks, the use of destructive socio-political and socio-psychological technologies of influence, the use of methods of destruction of traditional values, national ideas and meanings, reducing the resourcefulness of the country, society, and individuals (Artamonov & Artamonova, 2023). All these actions represent a long-term, permanent, diffuse, and universal conflict based on the strategy of exhaustion, increased stress load, and increased social alienation of the Russian people. The threats of "new wars" include physical/psychological violence, direct combat, terrorist attacks, and other forms of violence; constant stress and anxiety associated with uncertainty and instability; loss of close relatives, friends and neighbors; conflicts with loved ones due to ideological disunity of the population; fear of general mobilization and death; stigmatization and discrimination associated with ethnic, religious or cultural origin.

Young people, as the generation of the country's future, are becoming the main target of destructive actions occurring on the psychological, economic, geopolitical, cybernetic, information, and ideological fronts. The task is to create a "convenient"

worldview for young people, to break the system of values and legal national culture, and to reduce their hardiness (Afanasyev, 2021), which should become an obstacle to harmonious growth, the interiorization of the Russian cultural code, and the formation of subjectivity. The high level of involvement of young people in the Internet environment actually addresses the problem of their vulnerability to provocative, radical or extremist content, cyberattacks and other forms and technologies of networks of "new wars" (Rudenko & Rudenkina, 2019).

The main events related to real psychologically traumatic military operations include living in war zones and forced migration (Zakharova & Tsvetkova, 2020). Being at the center of a military conflict and forced migration, young people begin to experience three interconnected components: a threat acting at a distance, the assessment and emotional experience of this threat, the physiological and somatic consequences of these experiences (Malkina-Pykh, 2005). The main traumatic factors are an immediate threat to the life and health of a young person or his/her family, death of family members, and physical injuries. All this is exacerbated by media coverage of military threats. Consequently, social tension, stress, fear, suffering, traumas to the meanings and values of life lead to the dramatization of consciousness, which in turn causes variable difficulties in socialization (Karabanova & Molchanov, 2018), a decrease in resourcefulness and hardiness and a deformation of the image of the future (Tikhomirova & Samokhvalova, 2023). The consequence of exposure to stress factors is the emergence of behavioural disorders ranging from hetero-auto-aggression to depression with a feeling of "survivor guilt" (Eremina, 2011). Chronic stress, intense stress in the context of emergency situations create "favourable" conditions for the formation of deviant behavior and distortion of the self-image (Tarabrina et al., 2017).

The negative psychological consequences of war are typical not only for young people living in areas where direct military actions take place, but also for those living in areas that are not directly involved in conflicts – the "second and third circles of victims". The secondary victims are relatives, friends, and acquaintances of primary victims of military actions and emergency situations. The tertiary victims are all people living in the country where a military conflict takes place and receiving information on military actions via instant messengers and social networks, from the media, witnesses, friends, parents and relatives (Akarachkova et al., 2022). This makes traumatic impacts permanent, increasing the risk of post-traumatic stress disorders, which can lead to disturbances in regulatory mechanisms, depression, and phobias.

The attitude of civilians living in the combat zone and in the border areas towards material values and the material world changes dramatically. The perception that one's material world can be reduced to the size of an "alarm bag" changes his attitude towards the values and perceptions of his material world. Young people living far away from ongoing military operations also experience shocks and fears (fear of losing loved ones, fear of death, fear of the future, fear of waiting, fear of mobilization, etc.) (Lopatina, 2023).

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Regardless of the proximity/distance to the hotbeds of war, young people are acutely aware of the potential risk of "losing their place", family disintegration; difficulties in family reunification, maintaining close relationships; a reduction in self-esteem, control over their daily lives is observed (Carballo et al., 2004). In the sociocultural environment of the changing modern VUCA world (Makeeva et al., 2021), we are witnessing the birth of a "fluid subject" (Sapogova, 2023b). Young people often show precarity, temporaryness, and unreliability of being, leading to the experience of the fragility of existence and a crisis of future life prospects. Its indicators include "short planning horizons", the absence of a holistic "life path", the mental "sacralization" of multitasking with minimal personal effort, absence and distance from civil activity, emotionality, social atomization, the inability to build and maintain stable social connections, etc. (Sapogova, 2023a). In situations of war, instability and uncertainty, a person is at the crossroads of three components that correspond to the cognitive, emotional and behavioral components of the attitude – the misunderstanding of the unknown, uncertainty and inability to act in a certain way, developed on the basis of experience (Bityutskaya & Bazarov, 2019). This internal dissonance requires a high level of hardiness and special coping strategies to cope with stress.

The new socio-cultural context undoubtedly embodies the problem of psychological hardiness and the search for ways to improve it. A large number of studies in this field focus on the study of personal qualities and abilities directly related to hardiness. In this sense, supra-situational or adaptive activity comes to the fore, which implies the ability of a person to rise above the level of situational demands, to set excessive objectives from the main task perspective, to overcome the external and internal limits of activity (Petrovsky, 2010), personal dynamism as the ability and willingness of a person to change in the absence of an urgent need for this (Leontyev & Saprnov, 2007), the individual's self-transformation associated with a sense of self-identity and the integration of new knowledge about himself into self-structure (Starovoitenko & Shchebetenko, 2020), the individual's self-change, including the ability to recognize the "challenges" of the situation and the need for change, the willingness to accept this need and act in accordance with the perceived challenges (Manukyan et al., 2020), flexibility of action and decision-making, allowing not only constructively to rebuild life under new conditions, but also to accept global changes (Bityutskaya, 2022), the ability to predict possibilities (Znakov, 2023), the possibility of risk in thinking (Kornilova, 2015), preparation for the future, such as the ability to withdraw from expectations with already established plans, the flexibility to rebuild the inner world in response to changes in social conditions, the ability to stay in touch with people and to view future tasks optimistically. An important predictor of sustainability is hardiness as an integral characteristic of personality, which affects the success of a person in overcoming life's challenges, includes involvement in the life process, readiness to control significant events in one's life and acceptance of life's challenges (Khoshaba & Maddi, 1999). Hardiness as a fundamental resource to overcome

prevents the emergence of mental stress in stressful and difficult situations (Leontyev & Rasskazova, 2016).

Global studies on human hardiness in war situations show the importance of certain coping strategies for sustainability and survival, strategies that correspond to the coping style associated with hardiness (Odintsova et al., 2017). Therefore, an analysis of the coping strategies used by people during World War II, based on diary entries, showed that people mainly used problem-oriented strategies aimed at finding effective ways to escape bombing, reduce damage caused by artillery, strategies to find social support, and emotion-oriented strategies that allowed to regulate the strength and intensity of the emotional response to a threat. It was found that denial and distancing from the threat were dominant; people showed humour, expressed hope and a positive attitude. This allowed them to maintain their strength and restore resources despite the threat to their lives (Middendorf, 2024). A study of psychological coping in the Romanian population subjectively involved in the situation in Ukraine showed other characteristics: according to the results, focusing on emotions and their release, as well as on behavioral detachment, were the dominant strategies of psychological coping in young people, leading to an increase in anxiety and a decrease in subjective well-being. On the other hand, positive reinterpretation and growth were associated with a reduction in anxiety, a higher level of general health and a better quality of life (Crişan et al., 2023).

The authors explain the apparently unexpected results by the fact that the focus on a traumatic event and/or the expression of associated feelings can actually become a maladaptive strategy and increase anxiety when used excessively (Liverant, Hofmann & Litz, 2004). Furthermore, this strategy can be a potential longitudinal mediator between severe depression (caused by various traumatic events) and generalized anxiety disorder (Marr, Zainal & Newman, 2022). Behavioral withdrawal, which involves reducing a person's efforts to cope with a stressor, is also consistently associated with anxiety, apathy, depression and general poor mental health (Held et al., 2011).

Interesting data were obtained from studies on Ukrainian samples and summarized in a meta-analysis. It was found that strategies such as emotion-oriented strategies, distraction through participation in various activities, sedative medication use, humbleness and avoidance are not effective in a military context and do not increase hardiness. On the contrary, the predictors of hardiness were the ability to maintain close social ties, the presence of support networks, religion, and hope for the future; the use of story-telling in social networks and problem-oriented strategies were also effective strategies (Rizzi et al., 2023).

Currently, all young people living in the territory of the Russian Federation are involved in some way in a military context, while strategies to cope with this situation, a situation of military threat, have not been studied in Russian samples. Most global studies in this field focus on Ukrainian and European samples. The study of coping strategies and hardiness, together with knowledge of the characteristics of perception of SMO in young

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people with different combinations of coping strategies, can help to predict social risks and develop programmes to teach coping strategies that ensure adaptation and normal functioning in a modern context.

Research questions: What are subjective assessments of the military threat and coping with it among Russian young people from different "circles of proximity" to the special military operation (SMO)? What are the differences in hardiness indicators among young people with different types of coherence and intensity of coping strategies in the context of military conflict?

This study aims to investigate the characteristics of subjective assessments of the situation of military conflict and hardiness among Russian young people with different types of coherence and intensity of coping strategies.

Main hypothesis: There are differences in subjective assessments of military threats and indicators of hardiness among Russian young men and women with different types of coherence and intensity of coping strategies.

Particular hypotheses:

1. There are differences in subjective assessments and experiences of a military threat, including its consequences, among young people from different "circles of proximity" to the SMO (residents of front-line territories, residents of border regions and residents of the conditionally remote regions of the central federal district);
2. There are different types of coherence and intensity of coping strategies with the situation of a military threat among young people from different "proximity circles" to the SMO;
3. Young people with different types of coherence and intensity of coping strategies may have different characteristics of hardiness.

Methods

Participants

The study sample comprised a total of 583 participants living in various regions of the Russian Federation, males ($n = 66$) and females ($n = 517$), aged 17 to 39 years ($M = 20.7$; $SD = 4.05$). The sample included only respondents who had given informed consent to participate in the study. Before the test, the respondents were informed of their voluntary participation, the possibility to withdraw from the psychological assessment process at any stage, the confidentiality of the process and the use of results strictly for scientific purposes and without any connection with personal data allowing identification of a person.

Respondents were initially divided into 3 circles of proximity to the special military operation. The criterion was territorial proximity to the place of the SMO:

- Circle 1 comprised 285 respondents living in the Lugansk and Donetsk People's Republics.
- Circle 2 comprised 110 respondents living in the Voronezh, Kursk, and Belgorod regions.
- Circle 3 comprised 188 respondents living in remote regions – Kostroma, Yaroslavl, Ivanovo, Moscow, Leningrad, Nizhny Novgorod regions, as well as Khabarovsk Krai.

Currently, 241 participants indicated that they were in a romantic relationship; 58 participants were married; 282 participants were not in a relationship at the moment; 529 participants were not militarists.

Research methods

Due to the heterogeneity of empirical references (coping strategies, hardiness and assessment of the SMO context, its subjectively meaningful consequences), the study integrated the nomothetic and idiographic approaches.

Methodological complex

The methodological complex included:

1. A semi-structured interview with a biographical section to identify gender, age, occupation, presence of close relationships, citizenship, presence / absence of military service of the respondents themselves and their relatives, and a substantive interview devoted to the assessment of the subjectively significant consequences of the situation of a special military operation (hereinafter - SMO), the combination of the SMO situation with personal losses. The method of content analysis was used for processing.

2. The Assessment of Extreme Events semantic differential scale (T. V. Parfenova, 2022). This psychological assessment tool is designed to study the personal meaning and phenomenology of extreme events. The respondents were offered a situation of a special military operation for assessment. When processing the results, the values were calculated for the following eight semantic differential scales: "Immorality of the event", "Psychological remoteness", "Subjective significance of the event", "Subjective assessment of the scope of the event", "Subjective assessment of the extremality of the event", "Emotional context of the event", "Subjective duration of the event", "Subjective assessment of the uncertainty of the event", reflecting various aspects of the personal meaning of the assessed event. The sum of points for each scale shows the intensity (strength) and direction of the subjective experience of the event. The diagnostic tool is contextualized, which allows some changes in the instructions in terms of mentioning extreme events to specify the subject of the assessment.

3. The Perceived Military Threat Scale (K. V. Karpinsky, 2015). A standardized multidimensional personality questionnaire, designed to measure cognitive, emotional, regulatory-behavioral components as well as the overall intensity of a military threat

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experience. The 10 elements of the technique are divided into three subscales corresponding to the cognitive, affective and regulatory-behavioral components of perceived military threat. Intercorrelations among the identified subscales of the diagnostic tool is in the range of 0.65–0.69; the Cronbach $\alpha \geq 0.70$ for each scale.

4. The Hardiness Scale (S. Maddi, D. Khoshaba, 1984/2001), screening version modified by E. N. Osin (2013). This assessment tool examines psychological factors that help to cope with stress successfully and reduce and prevent internal tensions in stressful situations. The questionnaire contains 12 statements and includes the following 3 subscales: Commitment, Control, and Challenge; the Cronbach's $\alpha = 0.86$.

5. Brief COPE (C. Carver, 1987), tested by T. L. Kryukova, N. S. Shipova, T. P. Opekina (2020), developed within the framework of the theory of stress and coping by R. Lazarus and measures coping strategies as situational behavior. The methodology includes 28 items that reflect 14 coping strategies. The respondents were asked to assess which strategies/methods they used and to what extent in a stressful situation in the SMO context.

Mathematical methods for data analysis: descriptive statistics, Kolmogorov-Smirnov test for normality, Levene's test for homogeneity of variances, Kruskal-Wallis H-test for the comparison of more than two independent samples, one-way analysis of variance for the comparison of three and more independent samples, K-means cluster analysis to identify groups of respondents using similar types of coping behavior (combinations and intensity of coping strategies), and Fisher criterion ().

Procedure

In the first stage, the results of the descriptive statistics of all standardized methods were analyzed and a comparison of the mean scores in the total sample of respondents with the normative data ($n = 583$) was made. In the second stage of the study, a cluster analysis of observations was carried out on the total sample using the K-means algorithm. Clustering was based on the results of the Brief COPE (C. Carver, 1987, modified by T. L. Kryukova, N. S. Shipova, and T. P. Opekina). Four clusters were identified that reflect different types of coherence and intensity of coping strategies: Cluster 1 ($n = 159$; $m = 21.5$, of whom 77 participants (48.4 %) were from the 1st circle of proximity, 34 participants (21.4 %) were from the 2nd circle, and 48 participants (30.2 %) were from the 3rd circle); Cluster 2 ($n = 193$; $m = 20.7$, of whom 81 participants (42 %) were from the 1st circle of proximity, 40 participants (20.7 %) were from the 2nd circle, and 72 (37.3 %) were from the 3rd circle); Cluster 3 ($n = 172$; $m = 20.3$, of whom 92 participants (53.5 %) were from the 1st circle of proximity, 30 participants (17.4 %) were from the 2nd circle, 50 participants (29.1 %) were from the 3rd circle); Cluster 4 ($n = 59$; $m = 19.6$, of whom 38 participants (64.4 %) were from the 1st circle of proximity, 6 participants (10.2 %) were from the 2nd circle, 15 participants (25.4 %) were from the 3rd circle). In the third stage, a comparative analysis

of the indicators of a military threat, the assessment of the extremeness of the event and the assessment of the subjectively significant consequences of the SMO were carried out in four comparison groups identified as a result of clustering.

Results

In the study of 583 young people living in different regions of the Russian Federation, perception of the social context and the experience of military threat, perception of the SMO, severity and intensity of coping strategies and hardiness of the respondents were determined (Table 1).

Table 1

Descriptive statistics on estimated parameters in the empirical study (N = 583) and their comparison with normative values

Parameters	Empirical values (m(sd))	Normative values (m(sd))
<u>Hardiness</u>		
Commitment	7,72 (3,45)	7,94 (3,45)
Control	7,35 (2,68)	7,79 (2,55)
Challenge	7,26 (3,08)	7,90 (2,82)
<u>Coping-strategy</u>		
Self-distraction	5,48 (1,74)	5,27 (1,42)
Active coping	4,62 (1,73)	5,79 (1,39)

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Parameters	Empirical values (m(sd))	Normative values (m(sd))
Denial	3,53 (1,66)	2,92 (1,23)
Psychoactive substance use	2,70 (1,46)	2,88 (1,21)
Emotional support seeking	5,05 (1,81)	5,11 (1,50)
Instrumental support seeking	4,58 (1,84)	4,53 (1,42)
Avoidance	3,42 (1,57)	3,06 (1,10)
Emotional outburst	4,49 (1,75)	4,58 (1,35)
Positive reappraisal	4,47 (1,86)	6,00 (1,39)
Planning	4,98 (1,78)	5,68(1,34)
Humor	3,54 (1,73)	5,24 (1,57)
Acceptance	6,05 (1,66)	6,42 (1,11)
Turning to religion	3,71 (1,87)	3,28(1,56)

Parameters	Empirical values (m(sd))	Normative values (m(sd))
Self-accusation	3,46 (1,68)	4,10 (1,47)

The analysis of mean scores, standard deviations, and comparisons with normative values indicated that hardiness parameters such as commitment, control, and challenge were within normative values in the sample of the empirical study.

Then 14 coping strategies of young people were analyzed and compared to normative values. We found that the "Denial" strategy was more intense; "Active coping", "Positive reappraisal", and "Humor" were less pronounced. The remaining strategies were within the norms. To cope, the strategies of "Acceptance", "Self-distraction" and "Emotional support seeking" were most often used.

The differences in coping strategies in the three comparison groups belonging to conditional circles of proximity to the military conflict zone have also been analyzed. Several significant differences were identified with the Kruskal-Wallis test (Table 2).

Table 2

Differences in the hardiness and coping strategies scores, the Kruskal-Wallis test

Coping strategies	1st proximity circle (n=285)	2nd proximity circle (n=110)	3rd proximity circle (n=188)	Significance level (p)
Challenge	282,9	335,9	279,9	0,01
Self-accusation	306,1	258,7	290,1	0,03
Acceptance	266,5	315,3	317,0	0,00
Planning	271,8	310,9	311,5	0,01

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Coping strategies	1st proximity circle (n=285)	2nd proximity circle (n=110)	3rd proximity circle (n=188)	Significance level (p)
Instrumental support seeking	278,8	283,9	316,7	0,04
Psychoactive substance use	312,4	263,7	277,6	0,00
Denial	316,3	263,5	271,8	0,00

This study revealed that those living in areas proximate to military actions (Circle 1 - LPR, DPR) are significantly more likely to use "Psychoactive substances" and "Denial"; to a lesser extent, they are characterized by "Planning" and "Acceptance" of the situation. Residents of the most remote territories (Circle 3) more often use the strategy of "Instrumental support seeking". Residents of border territories (Belgorod, Voronezh) have significantly higher scores in the "Challenge" strategy and, to a lesser extent, use "Self-accusation".

For a more detailed analysis of coping behavior in the aggregate of coping strategies and their combinations in a total sample of 583 respondents, a cluster analysis using the K-means algorithm was used. As a result, four clusters were identified, reflecting different types of coherence and intensity of respondent coping strategies. Cluster 1 included 159 respondents with the following most intensive strategies: Self-Distraction ($m = 5.77$), Positive Reappraisal ($m = 5.36$), Planning ($m = 5.20$) and Acceptance ($m = 6.74$). The following strategies were not typical for the respondents of this cluster: Denial ($m = 2.56$), Psychoactive Substance Use ($m = 2.04$), Avoidance ($m = 2.68$), Humor ($m = 2.77$), and Self-Accusation ($m = 2.74$). In this case, we are talking about respondents who accept the situation and try to adapt, build a life strategy in a new socio-cultural context.

The number of respondents in Cluster 2 was 193, which was the largest. The most intensive strategies in this cluster were Self-Distraction ($m = 6.17$), Emotional Support Seeking ($m = 6.26$), Instrumental Support Seeking ($m = 5.69$), Emotional Outburst ($m = 5.65$), Planning ($m = 5.82$) and Acceptance ($m = 6.37$); the least expressed strategy was Psychoactive Substance Use ($m = 2.52$). The other strategies had an average intensity. Respondents in this group are characterized by emotion-oriented coping and adaptation to the current situation. In this case, the activity is first of all aimed at searching for various types of support and then at adapting and adjusting.

Cluster 3 included 172 respondents with average intensity of Self-Distraction ($m = 4.08$) and Acceptance ($m = 4.78$) coping strategies and low intensity of the following coping strategies: Active Coping ($m = 2.98$), Psychoactive Substance Use ($m = 2.39$), Instrumental Support Seeking ($m = 2.97$), Avoidance ($m = 2.98$), Positive Reappraisal ($m = 2.98$), Humor ($m = 2.58$), Turning to Religion ($m = 2.69$), and Self-Accusation ($m = 2.66$). The respondents to this group are not characterized by coping intensity and high stress levels.

Cluster 4 contained only 59 respondents, but had a high intensity of all measured coping strategies ($m \geq 6$), indicating a high intensity of the experienced stress and attempts to cope with it to adapt to the current situation. The reliability of differences in the expression of all coping strategies among respondents from different clusters was confirmed by analysis of variance ($p \leq 0.000$).

Afterwards, the hypothesis was tested that hardiness and the perception of the SMO situation as a sociocultural context would differ among respondents in different clusters. Using variance analysis, the differences in hardiness, i.e. in the parameters of Commitment and Challenge, were found (Table 3). The Control characteristic had a heterogeneous variance. Therefore, it was analyzed using the Kruskal-Wallis test.

Table 3

Differences in hardiness among respondents of different types of coping behavior (clusters)

	Mean (m)	Standard deviation (sd)	Fisher criterion (F)	Significance level (p)
<u>Commitment</u>				
Cluster 1	12,69	3,28	17,59	0,000
Cluster 2	11,16	3,23		
Cluster 3	12,32	3,31		
Cluster 4	9,46	3,51		
<u>Challenge</u>				
Cluster 1	11,95	2,89	19,39	0,000
Cluster 2	10,67	2,74		
Cluster 3	12,05	2,91		
Cluster 4	9,24	3,39		

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Commitment and Challenge as hardiness parameters are more characteristic of respondents from Cluster 1 and Cluster 3 than of respondents from Cluster 2 and Cluster 4. In this case, the lowest level of hardiness is observed among respondents of Cluster 4 with high intensity of all coping strategies.

According to the Control hardiness characteristic, using the Kruskal-Wallis test, reliable and significant differences were also revealed ($\chi^2 = 46.26$ $p \leq 0.000$); the lowest average rank was in Cluster 4 (180.08), and the highest average rank was in Cluster 1 (344.14). Consequently, representatives of different clusters can be identified as having different characteristics of hardiness, which indirectly confirms their ability or inability to cope with stress in the sociocultural context of SMO. Furthermore, in Clusters 1 and 3 hardiness is higher; hardiness is the lowest in Cluster 4.

Then the perception of the sociocultural context of SMO as extreme by respondents from all four clusters was analyzed, allowing statistically significant differences in almost all assessment parameters to be established (Table 4).

Table 4

Differences in the severity of the perception of SMO as an extreme socio-cultural context among respondents with different types of coping behavior (clusters)

	Mean (m)	Standard deviation (sd)	Fisher criterion (F)	Significance level (p)
<i>Immorality/humanity of the event</i>				
Cluster 1	25,67	7,94		
Cluster 2	23,89	7,94		
			3,51	0,02
Cluster 3	24,03	8,05		
Cluster 4	27,02	8,01		

	Mean (m)	Standard deviation (sd)	Fisher criterion (F)	Significance level (p)
<i><u>Psychological proximity/remoteness</u></i>				
Cluster 1	13,14	3,33	2,72	0,04
Cluster 2	12,52	3,60		
Cluster 3	12,03	3,88		
Cluster 4	12,78	3,25		
<i><u>Scope of the event</u></i>				
Cluster 1	27,01	4,82	4,84	0,000
Cluster 2	26,22	4,82		
Cluster 3	25,41	5,09		
Cluster 4	21,98	5,52		

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	Mean (m)	Standard deviation (sd)	Fisher criterion (F)	Significance level (p)
<u>Non-extremality/extremality of the event</u>				
Cluster 1	19,86	4,21	3,78	0,01
Cluster 2	20,18	4,05		
Cluster 3	19,14	4,49		
Cluster 4	18,37	3,69		
<u>Negative/positive emotional context</u>				
Cluster 1	21,03	9,46	5,51	0,001
Cluster 2	18,88	9,47		
Cluster 3	19,61	10,23		
Cluster 4	24,44	9,75		
<u>Long/short duration of the event</u>				
Cluster 1	10,94	2,62	2,94	0,03
Cluster 2	10,83	2,55		
Cluster 3	10,58	2,77		
Cluster 4	9,79	2,83		

	Mean (m)	Standard deviation (sd)	Fisher criterion (F)	Significance level (p)
<i>Uncertainty/certainty of the event</i>				
Cluster 1	8,66	3,05		
Cluster 2	7,48	3,05		
			8,52	0,00
Cluster 3	7,06	2,99		
Cluster 4	7,59	2,51		

In the perception of SMO as an extreme socio-cultural context among young people, differences were found in seven assessment parameters of the eight proposed. The "subjective significance" parameter was separately analyzed for differences ($\chi^2 = 12.69$ $p \leq 0.01$) using the Kruskal-Wallis nonparametric test because the distributions of clusters were not homogeneous. The respondents of the fourth cluster attach the least subjective importance to the situation of the SMO, find no personal meaning in it (average rank = 240); the respondents of the first cluster attach the greatest subjective importance to it (average rank = 325).

We should note that the representatives of all clusters have indicated humanity in the current situation. At the same time, respondents from different groups differ not only in the constellations of coping strategies, their intensity, but also in perceptions of SMO as a socio-cultural context. For respondents from Cluster 4, the socio-cultural context appears as a non-extreme event with a rich positive background, short-term, small-scale, not filled with personal meaning. Respondents from Cluster 1 perceive the SMO context as specific, long-term, large-scale, feel psychological commitment, participation in it, and therefore accept the situation and try to adapt to life in new conditions. The greatest distance and non-obviousness are typical for the respondents in Cluster 3. Respondents in Cluster 2 considered the event to be extreme. The negative emotional context of the event experience is characteristic of them.

When analyzing the perception of military threat by respondents in different clusters, a nonparametric Kruskal Wallis test was also used, allowing differences in all

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four parameters to be established: anticipation of war ($\chi^2 = 42.05$ $p \leq 0.000$), military anxiety ($\chi^2 = 49.77$ $p \leq 0.000$), anticipatory adaptation for war ($\chi^2 = 89.17$ $p \leq 0.000$), and experience of a military threat ($\chi^2 = 83.74$ $p \leq 0.000$). All characteristics are more intensive in Cluster 4, which is characterized by the intensity of the entire set of coping strategies, and are less intensive in Cluster 3, with a moderate intensity of coping strategies.

Subsequently, content analysis of responses to open-ended interview questions focused on a subjective assessment of the consequences of the SMO by representatives of the four clusters was carried out. The results are shown in Table 5.

Table 5

Results of content analysis of interviews with respondents with different types of coping behavior (clusters)

Categories of analysis	Cluster 1 (n = 159)	Cluster 2 (n = 193)	Cluster 3 (n = 172)	Cluster 4 (n = 59)	Indicators (% of the total number of indicators; amount = 627)
Socio-economic difficulties	8,2%	14,5%*	12,8%	32,2%**	13,1%
Consequences for mental and emotional health	27,8%	38,3%*	27,3%	64,4%**	32,5%
Losses	3,8%	4,1%	7%	22%**	6,2%
Injuries in loved ones	0,6%	2,1%	2,3%	0%	1,4%
Rethinking reality and values, values of family and life	8,2%	5,7%	2,9%	32,2%**	7,7%
Uniting under the flag	1,3%	2,1%	1,2%	5,1%	1,8%
Concern for the safety of loved ones who are involved in SMO	12%*	6,7%	9,3%	27,1%**	10,2%

Categories of analysis	Cluster 1 (n = 159)	Cluster 2 (n = 193)	Cluster 3 (n = 172)	Cluster 4 (n = 59)	Indicators (% of the total number of indicators; amount = 627)
Breaking up close relationships	8,8%	3,1%	2,1%	6,8%	4,2%
A "negative" generalized answer	12,6%	11,9%	16,9%	39%**	15,2%
Couldn't answer	0%	1%	2,9%	8,5%	1,9%
Ambivalent	0,6%	1%	0,6%	3,4%	1%
Did not affect	4,4%	3,6%	4,1%	13,6%	4,6%
Positive	1,9%	0%	0%	0%	0,5%

Notes: * – differences with other clusters by Fisher criterion (ϕ) at the $p < 0.05$ significance level;
 ** – differences with other clusters by Fisher criterion (ϕ) at the $p < 0.01$ significance level

According to respondents, the most important subjective consequences of the special military operation are negative changes in the psycho-emotional state (32.5% of the total number of indicators). The prevalence of this category in Cluster 4 is consistent with the intensity of all coping strategies, indicating high stress and relatively non-adaptive behavior of these respondents in the context of pronounced stress symptoms. Respondents also identified socio-economic consequences as subjectively significant (13.1% of indicators), "concern for loved ones who are in the SMO zone, live in the border areas" (10.2% of indicators), rethinking the values of family, life, loss, trauma in relatives and loved ones, breakdown of close relationships, conflicts within the family, divided by values and attitudes towards the SMO. It is necessary to highlight the significant differences in the Fisher criterion for the respondents of Cluster 4 from the respondents of all other clusters in categories such as "Socio-economic difficulties", "Consequences

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for mental and emotional health", "Losses", "Concern for the safety of loved ones who are involved in the SMO", "Rethinking reality and values, values of family and life", and "A negative" generalized answer". These results indicate acute stress and confirm previous data on the high intensity of all coping strategies and the vulnerability of respondents. We should also note the difference between Cluster 2 and Cluster 1 in the categories of "Socio-economic difficulties" and "Consequences for mental and emotional health", which also emphasizes the stress of the context for Cluster 2 respondents and specifies the stress factors with which they actively cope.

Discussion

Analysis of the results obtained for the entire sample shows a relatively intensive coping in young people, despite the stressful context of the modern historical period. The most intensive strategy is "Denial", which in an uncontrollable context that depends little on the will of a particular subject can be a resource saving strategy that allows to accept reality and continue to live in a routine rhythm and format of functioning. At the same time, the ranking of coping strategies demonstrates the prevalence of the strategies of "Acceptance" (R1), "Self-distraction" (R2) and "Emotional support seeking" (R3). Denial of stress is accompanied by attempts to accept reality and move to the positive and important aspects of life, including close relationships. They become a source of emotional support, and according to global research, they are a buffer when experiencing a traumatic experience (Crişan et al., 2023; Middendorf, 2024). When comparing the severity of coping strategies according to the proximity/remoteness of residence to the military conflict zone, it was found that those living in the areas proximate to military operations (Circle 1 - LPR, DPR) rely significantly more on "Psychoactive substance use" and "Denial". They are to a lesser extent characterized by "Planning" and "Accepting" the situation. Therefore, despite the prolonged situation, young people living in these areas still have difficulty showing constructive activity, feeling control of the situation, and using cognitively more complex coping strategies. Perhaps this is due to a relative lack of resources. Residents of border territories (Belgorod, Voronezh) have a significantly higher level of "Challenge" strategy and use "Self-accusation" to a lesser extent. Currently, it is for them that the situation is associated with acute stress. At this stage, risk acceptance enables them to solve daily problems, continue to work and study in these areas, which pose a threat to their lives and the lives of their loved ones. The denial of responsibility for what is happening gives them strength and confidence. Residents of the remotest regions (Circle 3) more often use the "Instrumental support seeking" strategy, which is expressed mainly in search for information, answers to the questions that arise. These respondents are in a situation of information/mental war and receive information about what is happening exclusively through communication channels and the media. The lack and inconsistency of content with the impossibility to see everything with your own eyes requires information search.

Furthermore, in order to determine the combinations of coping strategies, regardless of the "circles of proximity" to the SMO zone, four clusters were identified in the total sample of respondents, reflecting different types of coherence and intensity of the coping strategies of the respondents. Cluster 1 represents respondents choosing conditionally adaptive coping ($n = 159$). These respondents use such strategies as Self-Distraction, Positive Reappraisal, Planning, and Acceptance. They focus on building their own lives and solving current and strategic development tasks in a new sociocultural context; a high adaptive potential is typical of them. Conditionally passive strategies such as Denial, Psychoactive Substance Use, Avoidance, Humor, and Self-Accusation are not typical of them.

Cluster 2 respondents (most numerous) are characterized by coping focused more on the expression of emotions ($n = 193$). The most intensive strategies in this cluster are Self-Distraction, Emotional Support Seeking, Instrumental Support Seeking, Emotional Outburst, Planning, and Acceptance, while the least intensive strategy is Psychoactive Substance Use. Respondents in this case primarily need emotional and instrumental support that enables them to obtain an external resource and adapt to the situation. This is consistent with research in the field of intimate relationships (Ozbay et al., 2007; Kryukova et al., 2019), which shows that people who are socially integrated and maintain relationships with others have better mental health, a higher level of subjective well-being and a lower rate of stress sensitivity. The perceived social and emotional support is a powerful resource for stress resistance, neutralizing environmental vulnerability.

Cluster 3 respondents ($n = 172$) were assigned to the group of "conditionally calm responses to the life context". They focus on Self-Distraction and Acceptance (medium level of severity). Their strategies are not intensive, indicating a low level of perceived stress in the SMO context.

Among Cluster 4 respondents ($n = 59$), absolutely all coping strategies were highly intensive, indicating a high intensity of experienced stress and active attempts to respond to it, adapting to the current situation by all means, including the use of psychoactive substances. In this group, the number of respondents from the first circle of proximity is significantly higher (over 60 %). The comparison of all groups by the hardiness parameters showed the greatest vulnerability of the representatives of this fourth group. They have the lowest level of hardiness and the "Control" parameter. Due to their own vulnerability in this socio-cultural context, they suffer stress effects that exceed their adaptation abilities, making their coping strategies excessively intensive. At the same time, they are aware of the lack of control over the current situation, which leads to even higher levels of stress and leads them into a cognitive and emotional trap.

Commitment and Challenge as hardiness parameters are more characteristic of respondents in Clusters 1 and Clusters 3, and Control – of Cluster 1 representatives. These respondents felt control of the situation because of their own active participation in the situation, which speaks of their adaptability potential.

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In the moral assessment of the perception of the sociocultural context, representatives of all clusters note the humanity of the current situation, but representatives of Cluster 4 assess it as the most humane. At the same time, they place the least subjective importance on the situation of the SMO, find no personal significance in it, consider the situation to be of a smaller scope, short-term and not extreme. Such an ambivalent, perhaps superficial attitude to what is happening can be compensatory. However, the lack of a value basis in assessing the context can be associated with a low level of stress resistance, reducing adaptive potential, complicating the search for the most effective strategies, leading to the spread of strategies and cognitive distortions of reality.

The greatest psychological proximity to the SMO situation, as well as the certainty, subjective duration and importance of this situation, were noted by Cluster 1 representatives who accepted and adjusted to this socio-cultural context. Respondents from Cluster 3 point out the greatest psychological remoteness and non-obviousness of the situation, which allows them not to feel the stress of the context, which explains that coping strategies are intensive.

The greatest extremeness of the event and the negative emotional background prevail in the assessment of the representatives of Cluster 2. In this case, this explains the emotion-oriented response of respondents from Cluster 2 and the desire to seek support.

The results obtained are consistent with those obtained in the analysis of the perception of the military threat by respondents from different clusters. All characteristics are higher in Cluster 4, characterized by the tension of the entire set of coping strategies, and they are least intensely expressed in Cluster 3, with a moderate intensity of coping strategies.

To identify the substantive characteristics of perception of the situation of military threat in terms of giving personal meaning and emphasizing the consequences, a comparative analysis of the content analysis categories identified on the basis of the answers of respondents to open-ended questions was carried out.

The most subjectively significant consequences of the special military operation, the respondents found, were the negative changes in the psychological and emotional state (32.5 % of the total number of indicators). The most frequently occurring indicators in this category are stress, anxiety, fear (including fear of loud sounds, the future, fear for life, fear for loved ones), uncertainty about the future, worry, depression, negative/arduous emotional context, depression, apathy, tension, mental pressure, etc. Respondents from Cluster 4 and Cluster 2 describe this especially vividly: "I am drowning in anxiety"; "I am scared to live"; "It is psychologically difficult to endure"; "It is emotionally difficult to realize that loved ones and friends are someone's target"; "You react with horror when the danger of a drone attack catches your family"; "It has become more difficult psychologically"; "I have become more anxious, there is a lot of fear, I often feel apathy and depression, negative thoughts in my head, at times it is more difficult to focus on the matter"; "Anxiety, misunderstanding of the future, stress";

"It is emotionally difficult to watch the events taking place"; "Depression, exhaustion, and depletion"; "Insomnia, constant worries about my life and the lives of others"; "The emotional state of the whole family changes rapidly", etc. These data are consistent with global studies of the impact of military conflicts on human psycho-emotional health. The psycho-traumatic experience of both participants and witnesses to war is often associated with long-term destructive consequences for the individual. War stress and future shock, accompanied by high levels of anxiety, have a disorganized effect on a person at all levels of organization – sensory, cognitive, behavioral, ideological – and affect personal identity (Rozanov et al., 2019). At the same time, scientists point out that the symptoms associated with post-traumatic experiences can persist for many years, but only the intensity of manifestation decreases as long as a person finds himself in favourable conditions (Qi, Gevonden & Shalev, 2016). The significant prevalence of this category in Cluster 4 is consistent with the intensity of all coping strategies, indicating a high stress load and relatively non-adaptive behavior of these respondents in the context of serious stress symptoms. It should be noted that in Cluster 2, despite the fact that the number of semantic indicators is lower than in Cluster 4, respondents describe their emotional state in greater detail using many epithets and metaphors, explaining the reasons and predicting the consequences, which is also consistent with the prevalence of emotion-oriented coping strategies in this group.

Further, respondents identified socio-economic consequences as subjectively significant (13.1 % of indicators). These included rising prices and economic instability ("It affects the daily level: in rising prices"; "Apartments and cars are unattainable goods, the price of basic foods has increased"), a decline in the standard of living in general ("Economic decline"; "Economic crisis"; "Instability, less stability, and sanctions"), restrictions on freedom of movement and alienation ("The inability to move freely around the world, outside of Russia"; "Isolation from the world"), restrictions in the scope of opportunities, militarization of society, prohibition of discussing certain topics ("Censorship"; "A gap in society at the level of opinions, the inability to discuss"; "Many laws and legal precedents have emerged, and some acts have received a second meaning and are now unacceptable"), and a decline in the birth rate. Respondents in Cluster 1 noted this range of consequences to a lesser extent. Their answers in this category are generalized, without any connection with specific changes at the individual level. This category of analysis also dominates most in Cluster 4 of respondents.

The category "Concern for the safety of loved ones who are involved in the SMO, living on the border" (10.2 % of the indicators) should be referred to separately. Respondents noted that concerns for the safety of loved ones had influenced the psychological state of the family, changed its functioning: "My close relatives participate in the SMO, which to some extent affects every family member"; "Fear has emerged for some family members and for the young man"; "Family members are concerned about a relative in the SMO and wonder if he calls or writes"; "We can't think of anything else"; "Some of my friends are from Belgorod, where periodic shelling occurs, I am

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concerned" ... We should note that respondents often view family anxiety as a resource for bringing together the family, mutual support and integrated efforts. Thus, the category "Rethinking the values of family and life" dominates considerably in Cluster 4 (32.2 %). Under the high stress load, unification and reassessment of the importance of the family increase the individual's adaptive potential. Global studies emphasize that there is often a demonstration of a stronger identification with society, increased patriotism, positive changes in family relationships (Nestik, 2023), focusing on the psychotherapeutic function of the family and the exceptional importance of the support of relatives and social support in general (Feeney & Collins, 2015). At the same time, focusing on support suggests that a person is aware of the lack of his own resources and has some difficulties in taking personal responsibility and taking decisions related to his life under these circumstances.

Among the consequences of SMO were also identified losses, injuries to relatives and close persons, breakdown of close relationships, family conflicts based on values and attitudes towards the SMO.

Conclusion

The study enables us to make some generalizations. Despite the geographical proximity/remoteness of the military conflict ("proximity circles"), the special military operation is perceived and evaluated by young people as an extreme psychotraumatic life context associated with deterioration of psycho-emotional state, high stress loads, value conflicts, increasing concerns about the safety of loved ones, experiencing loss of stability in life, and socio-economic difficulties. At the same time, there is a rethinking of real values, reappraisal of life importance, and resourcefulness of close relationships and family. There is a subjective assessment of the importance of the delayed consequences of this life context.

In general, young people are sufficiently adapted to this situation, as indirectly demonstrated by a variety of coping behaviors and average hardiness indicators. We should note that the characteristics of coping are related to proximity/remoteness to military operations. Therefore, young people in Circle 1 (residents of the LPR, DPR) rely much more on the use of psychoactive substances and deny the high stress of the SMO situation; they do not use the Planning and Acceptance strategies. Circle 2 respondents (residents of the border regions – Belgorod, Voronezh) more often use the Challenge strategy in the absence of the Self-Accusation strategy. Circle 3 respondents (Central Federal District and Khabarovsk Krai) more often use the Instrumental Support Seeking strategy. However, despite the obvious differences, the Denial coping strategy (in combination with a positive reappraisal of the situation and participation in close relationships) is the most intensive of the whole sample, which can be a resource-saving strategy to maintain normal lifestyle and perform important functions.

This study has enabled us to identify and describe four major types of coherence and intensity of coping behavior among Russian young people, including Type 1 (active, accepting, adaptive coping), Type 2 (passive, emotional, adaptive, social support seeking), Type 3 (passive, accepting, adaptive), and Type 4 (active, undifferentiated, non-adaptive).

Respondents of all types have differences in hardiness parameters. Type 1 respondents achieved the highest results, indicating the importance of accepting the situation of a military conflict as a condition for a modern person's life, involvement, planning and control of events in his/her life. At the same time, the greater the underestimation of the importance and inevitability of what is happening, the denial and subjective isolation, the greater the stress load and the risk of psychological trauma.

Limitations

Of course, this study has its limitations, one of which is that internal migration has not been taken into account. Therefore, respondents who initially lived in the front or border areas of the Russian Federation may have entered several "proximity circles". Perhaps, this is why we failed to identify significant differences in the perception and assessment of the military conflict situation.

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Author Contribution

Anna Gennad'evna Samokhvalova developed the research concept, collected the data, and reviewed relevant Russian-language literature.

Elena Viktorovna Tikhomirova reviewed relevant global literature, developed the research methodology, performed primary data analysis, analyzed the qualitative data using content analysis, and interpreted the results.

Ol'ga Aleksandrovna Ekimchik collected the data, performed statistical analysis of the results, and discussed the results.

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The author has no conflict of interest to declare.

Attitudes to Social Interaction in The Internet Environment Among Men and Women With Different Gender Types

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Abstract

Introduction. The Internet is an important sphere of communication for a large number of men and women of different ages, but the microlevel of interaction on it has been little studied. The paper is the first to study the attitude of men and women to social interaction which the Internet and social networks is the main sphere of, taking into account their gender type as determined by the author's typology (patriarchal-polarized, patriarchal-similaritive, egalitarian-polarized and egalitarian-similaritive). **Methods.** Participants: 182 respondents (18 to 70 years old, 75.8% of whom were 21 to 40 years old; 33% men, 67% women) whose main sphere of interaction is the Internet and social networks. Methods: author's gender personality type questionnaire; author's social interaction attitudes questionnaire. Methods of mathematical statistics: stepwise discriminant analysis (IBM SPSS v. 27.0), Cohen's d, descriptive statistics. **Results.** For representatives of each gender personality type, combinations of parameters that differentiate the attitude to social interaction in men and women on the Internet and social networks were identified. Women of the patriarchal-polarized type perceive the participants of the interaction as focused on their own interests, and place a higher value on restraint. Men of the patriarchal-similaritive type compete more often, and their interaction strongly depends on their attitude to the subject. Men of the egalitarian-polarized type perceive the participants of the interaction as focused on their own interests, while women perceive them as focused on others. Men of the egalitarian-similaritive type perceive work, family, friends as closely interconnected

spheres of life, tend to react to the actions of others, without taking initiative; women are guided by generally accepted norms. **Discussion.** Differences in the content of attitudes to social interaction in men and women with different gender types whose interaction is concentrated on the Internet and social networks were established. With regard to the Internet, beliefs about the polarization of psychological characteristics of men and women have a nonlinear relationship with the magnitude of differences in the content of attitudes to social interaction in men and women with different gender personality types.

Keywords

attitude to social interaction, gender, gender personality type, gender differences, internet, men, women, discriminant analysis

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Introduction

In modern society, it is important to take into account the changing dynamics of social interaction. The development of the Internet has allowed people to participate in various forms of social interaction; the Internet has become an independent sphere of communication for a huge number of users of different sexes and ages. At the same time, the microlevel of interaction on the Internet, which reveals how it is carried out by people with different personal characteristics, has not been sufficiently studied, which does not allow us to take into account its peculiarities when optimizing interaction in remote work organization, in distance learning and other situations of Internet communication.

An analysis of publications devoted to interaction in the Internet space made it possible to identify three areas of research. The first is devoted to the socialization of various age groups in the era of the digital world, which is radically different from the previous stages of the formation of society. The issues of competence of social interaction in the context of digitalization of education (Pak, 2020), personal relationships (Andreeva, Volodina & Shurakova, 2020), the risks of conflicts in digital interaction of participants in the educational process (Weindorf-Sysoeva & Pankina, 2020), including in relation to representatives of Generation Z (Pletnev, 2020) are discussed. Neurobiological studies by Eslinger et al. (2021) show that social media communication has effects on physical and mental health similar to loneliness and trauma. Brain responses vary in relation to social media status, which affects social information processing similarly to social status in real-life interactions (Farwaha & Obhi, 2019). Evidence is provided linking social media use to self-comparison, body image, and eating disorders (Faelens et al., 2021). The personal

boundaries in virtual communication (Yegorov, 2020), the possibilities of enhancing the impression of the interlocutor with the help of content processing programs (Viktorova, 2020), and manipulation of behavior in Internet communication (Vilovatykh, 2020) are studied. The role of the virtual image of the Self in developing a coping strategy for an Internet user (Rasina, 2022), cognitive means of processing social information from the Internet in adolescents (Molchanov, Almazova & Poskrebysheva, 2018), and the role of self-esteem in preventing the negative impact of "likes" perceived on the Internet as social approval (Martinez-Pecino & Garcia-Gavilán, 2019) are analyzed.

The second direction is devoted to the unfavorable aspects of interaction on the Internet – cyberbullying, flaming and other forms of cyberaggression. The frequency and forms of cyberbullying among Russian adolescents (Khlomov, Davydov & Bochaver, 2019), its psychological characteristics as a form of Internet crime (Makarova, Makarova & Makhrina, 2016), the relationship between the characteristics of the emotional sphere of the individual and the tendency to cyberbullying (Zekeryaev, 2023; Marín-López et al., 2020) are studied. The positive role of social and emotional competence in preventing negative forms of online interaction, the special role of young people in the study of cyberbullying (Dennehy et al., 2020) are noted. New forms of interaction in the digital environment are highlighted, including flaming (Soldatova, Rasskazova & Chigarkova, 2021) and phubbing (Dushkin, Barinova, 2023), which is an example of the interpenetration of real and virtual communication processes.

The third direction is more closely related to the subject of our study and is aimed at studying the gender characteristics of interaction, including on the Internet and social networks. It has been established that women and young people communicate more on the Internet and social networks, the goals of communication for women are more specific than for men and are related to current everyday issues (Gambo & Özad, 2020). The greater involvement of women in online communication is also confirmed in the Russian sample, and gender differences in the meaning-of-life orientations of men and women are described in connection with their satisfaction with online communication (Maslodudova, Titova, 2023). Gender differences in extroversion and agreeableness are more pronounced in social networks compared to offline interaction, and gender differences in neuroticism are less pronounced in social networks compared to offline interaction (Bunker, Saysavanh & Kwan, 2021). Gender differences in recognizing the emotional states of other participants in the interaction (Barabanshchikov, Suvorova, 2021) and reactions have been established: men react more emotionally to threats of non-confirmation of masculinity by other participants in the interaction (Vescio, Schermerhorn, Gallegos & Laubach, 2021; Grieve, March & Doorn, 2019). The virtual image of student users of the VKontakte network is more consistent with traditional gender ideas than egalitarian ones (Erofeeva, 2018). The personal qualities and motivations of women who are members of anti-feminist online communities are described (Chiker, Svirikhina, 2019). Using the example of the social media activities of the #MeToo movement, the role of a person's orientation towards social dominance in changing their attitudes to sexual violence is studied (Szekeres, Shuman & Saguy, 2020).

Digital technologies are changing gender differences in different contexts of interaction, but despite the significantly increased interest in the issues of online communication, there remains a shortage of research into the psychological aspects of interaction in the Internet environment, including taking into account the gender and gender characteristics of the subjects of interaction.

At the same time, the Internet represents a more impersonal version of human interaction compared to face-to-face communication, the easily accessible technical capabilities of which and the anonymity of the participants in online communication allow experimenting with different gender images and styles, up to their radical change to those inherent to the opposite sex. And how gender-specific the interaction of Internet communication participants will be depends, among other things, on their beliefs about the similarities or differences in the psychological characteristics of men and women.

This article continues the presentation of the results of the study of the role of gender personality type in the attitude to social interaction in different spheres of life (work, family, friends, etc.) (Titova, 2024b, etc.). Social interaction of men and women in the Internet space is studied taking into account the gender personality type, which is based on beliefs about the extent of gender polarization of the psychological characteristics of men and women and the hierarchy in the interaction between them.

Research hypothesis: attitudes to social interaction on the Internet differ depending on the gender type and sex of the person.

Additional hypothesis: attitudes to social interaction differ more between men and women whose basis of gender types are beliefs about the polarization of psychological characteristics of men and women.

Purpose of the research: to study the characteristics of the attitude of men and women to social interaction in the Internet, taking into account the gender type of personality.

Theoretical and methodological foundations of the research

The theoretical and methodological foundation is based on the concepts of personality in the works of V.N. Myasishchev (1995), the concept of psychological relations by V.P. Poznyakov (2017), concepts of gender in the works of D.V. Vorontsov (2008), and the author's concept of gender personality type (Titova, 2023).

According to V.N. Myasishchev (1995, p. 48), personality is characterized as a system of relationships to the surrounding reality, which "represent a conscious, selective, experience-based, psychological connection of a person with various aspects of objective reality, expressed in his actions, reactions and experiences." Beliefs are an independent type of personality relationships, in which a system of requirements is combined with knowledge of reality – these are ideas about both the existing reality and what it should be (ibid., pp. 20–23).

Attitude to social interaction is a set of relatively stable, to varying degrees consciously perceived by the individual, features of perception, experience, understanding and organization of social interaction (Poznyakov, 2017). In forming his attitude to social interaction, the subject selectively relies on specific parameters that have different significance and relevance for him. In the study of attitude to social interaction on the Internet, we took into account: parameters of interaction analysis (Parsons & Shils, 1951), derivative characteristics of relationships (Lomov, 1984), principles of interaction identified in the resource-value approach (Poznyakov, Vavakina, 2016) and vectors of analysis of gender relations (Kletsina, Ioffe, 2018).

Based on the definition of D.V. Vorontsov (2008, p. 63), we define gender as a set of personal qualities and methods of social interaction fixed in culture, with which an individual of a certain sex correlates himself, organizes and typifies his individual experience and behavior as a man or a woman, and also organizes and typifies the behavior of other people as men or women.

Gender personality type is an integrative characteristic that determines differences between people associated with socio-psychological attitudes to men and women, manifested in subjective assessments of similarities or differences between men and women in their psychological characteristics (including emotional states and behavioral patterns), and in subjective assessments of hierarchy in the interaction of men and women in different spheres of life (politics, family, professional activity, intimate personal relationships, etc.) (Titova, 2023; Titova, Poznyakov, 2023).

The basis for identifying 4 gender types is: (1) the individual's attitude to gender polarization, their beliefs about how different or similar men and women are in their psychological characteristics; (2) the individual's attitude to the hierarchy in the interaction of men and women, whether their beliefs are characterized by the dominance of men in case of lower social status of women, or whether men and women are perceived as equal in status and influence in social interaction.

"High" and "low" values according to the specified criteria allowed us to describe and empirically verify 4 gender personality types (Titova, Poznyakov, 2023). At the subsequent stage of the study, their names were clarified as:

- patriarchal-polarized (characterized by beliefs about the pronounced differences in the psychological characteristics of men and women and about the dominance of men in interactions with women);
- patriarchal-similaritive (there are beliefs about the similarity of psychological characteristics of men and women and about the dominance of men in interactions with women);
- egalitarian-polarized (characterized by beliefs about the pronounced differences in the psychological characteristics of men and women and about the equality of men and women in social interaction);

- egalitarian-similaritive (characterized by beliefs about the similarity of psychological characteristics of men and women and the equality of men and women in social interaction).

We follow this terminology further in presenting the results of the study. We follow this terminology further in presenting the results of the study.

Methods

Participants

The study sample consisted of 182 people (33% men and 67% women) aged 18 to 70 years, including 75.8% of respondents aged 21 to 40 years, who indicated the Internet and social networks as their main sphere of interaction, indicating that it is in online communication that they mainly build relationships with people around them, make contacts and form social connections. The sample was random, formed on the basis of a voluntary desire to take part in the study.

Research methods

A questionnaire of gender personality type (the results of its validation are presented in the article by O.I. Titova (2024)), on the basis of which respondents were divided into 4 subgroups with different gender personality types.

Author's questionnaire for studying attitudes toward social interaction (Titova, 2024b). Attitudes to social interaction were studied based on the following parameters: emotionality – rationality, focus on one's own goals – focus on other people, awareness – spontaneity, dominance – submission, principles of interaction, frequency of competition and partnership, initiative – reactivity, restraint – directness, adherence to principles – situativeness, assessment by status – assessment by actions, etc. Respondents were offered 38 statements characterizing various aspects of interaction, the degree of agreement / disagreement with which was assessed on a 5-point Likert-type scale.

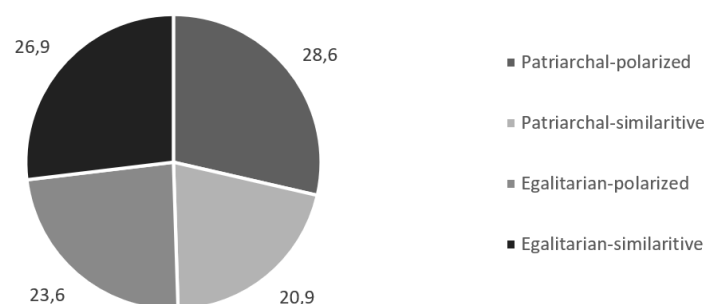
Methods of mathematical statistics: descriptive statistics, stepwise discriminant analysis (using the software IBM SPSS v. 27.0), Cohen's coefficient (d).

Results

The analysis of the data, according to the results of which 4 subgroups were identified, shows (Fig. 1) that among the respondents whose main sphere of interaction is the Internet and social networks, 28.6% have a patriarchal-polarized gender type, 26.9% have an egalitarian-similaritive type, 23.6% have an egalitarian-polarized type, and 20.9% have a patriarchal-similaritive type.

Figure 1

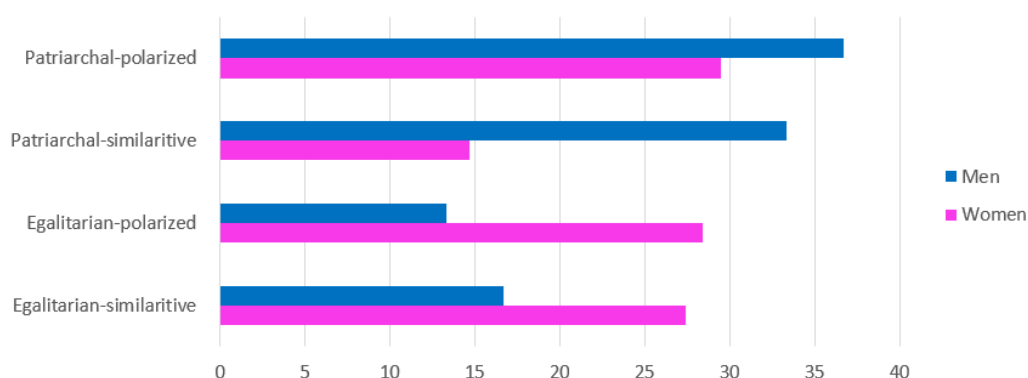
The share of representatives of gender types among respondents whose main sphere of interaction is the Internet and social networks



Men and women are unevenly distributed among the representatives of the studied gender types. As can be seen in Figure 2, men more often have a patriarchal-polarized and patriarchal-similaritive gender type, and women have an egalitarian-polarized and egalitarian-similaritive gender type.

Figure 2

The proportion of men and women among respondents with different gender types-whose main sphere of interaction is the Internet and social networks



Next, in each subgroup of respondents, a discriminant analysis was conducted using the stepwise method in order to identify for each gender type a set of parameters that significantly differentiate the attitude to social interaction in men and women.

Analysis of data from respondents of patriarchal-polarized type whose main sphere of interaction is the Internet and social networks revealed a set of 6 parameters (Table 1) that distinguish the attitude to social interaction of men and women with this gender type.

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Table 1

Parameters of differences in attitudes to social interaction in men and women of the patriarchal-polarized type

	Discriminant function coefficients
Focus on one's own goals	0,681
Dissimilarity of interactions in different spheres	-0,815
Displaying restraint in emotions and instincts	1,259
Focus on other people	-0,649
Clearness of emotional assessment of interaction	1,296
Respect for other people's adherence to principles	0,811

As follows from Table 1, the attitude to social interaction among men and women of the patriarchal-polarized type differs in how much they are focused on their own goals, as well as on society and other people, how they evaluate the norms and rules in building relationships, the role of specific circumstances and the influence of the situation, to what extent they respect the principles of other people and adherence to them. Most significantly, it differs in the understanding of one's own emotional attitude to the content of interaction and its results and the degree of emotional restraint.

Analysis of data from respondents of the patriarchal-similaritive type whose main sphere of interaction is the Internet and social networks showed 3 parameters that distinguish the attitude of men and women to social interaction (Table 2).

Table 2*Parameters of differences in attitudes to social interaction among men and women of the patriarchal-similaritive type*

	Discriminant function coefficients
Frequency of competition in interaction	1,168
The nature of interaction depends on the attitude towards the subject	0,926
Respect for other people's adherence to principles	0,777

As follows from Table 2, the attitude to social interaction among men and women of the patriarchal-similaritive type differs in assessments of how often interaction is perceived as competitive, to what extent interaction depends on the attitude to the subject on the part of other participants, and also in the degree of respect for the adherence to principles by other participants in the interaction.

Analysis of data from respondents of the egalitarian-polarized type whose main sphere of interaction is the Internet and social networks showed 3 parameters that distinguish the attitude of men and women to social interaction (Table 3).

Table 3*Parameters of differences in attitudes to social interaction among men and women of the egalitarian-polarized type*

	Discriminant function coefficients
Focus on one's own goals	-0,591

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	Discriminant function coefficients
Focus on other people	0,615
Adherence to one's own principles	0,715

As follows from Table 3, the attitude to social interaction among men and women of the egalitarian-polarized type differs in assessments of the extent to which people focus primarily on their own interests and goals in interaction, or whether they also take into account the interests of other people and society when constructing interactions, and the extent to which they strive to follow their own principles.

Analysis of data from respondents of the egalitarian-similaritive type the main sphere of interaction of which is the Internet and social networks discovered 4 parameters that distinguish the attitude of men and women to social interaction (Table 4).

Table 4

Parameters of differences in attitudes to social interaction among men and women of the egalitarian-similaritive type

	Discriminant function coefficients
Patterns of behavior and relationships in different spheres of a subject's life are interconnected	0,729
Respect for other people's adherence to principles	0,637
Interaction is based on generally accepted norms	-0,842
Passivity, lack of initiative of the subject in interaction	0,966

As follows from Table 4, the attitude to social interaction among men and women of the egalitarian-similaritive type differs in their assessments of the subject's passivity and lack of initiative in interaction, the perception of models of behavior and relationships in different spheres of life as closely interconnected with each other, and the extent to which interaction is based on generally accepted norms and is accompanied by respect for the adherence to principles by other participants.

In conclusion, we will evaluate the obtained results using Cohen's coefficient (d), which, together with descriptive statistics, will allow us to determine which characteristics most clearly distinguish the attitude to social interaction among men and women with different gender personality types whose interaction is concentrated on the Internet and social networks.

The attitude to social interaction of men and women with different gender types has the following most striking features (descriptive statistics data (M and SD), Cohen's coefficient (d) are provided):

Respondents of the patriarchal-polarized type: (1) women are more likely to perceive other participants in the interaction as focused on their own interests and goals ($M_{\text{male}} = 3.36$, $SD_{\text{male}} = 0.67$; $M_{\text{female}} = 3.86$, $SD_{\text{female}} = 0.8$; $d = 0.67$); (2) women rate the role of restraint in interaction higher ($M_{\text{male}} = 2.91$, $SD_{\text{male}} = 0.83$; $M_{\text{female}} = 3.54$, $SD_{\text{female}} = 0.74$; $d = 0.79$); (3) women are more inclined to believe that in interaction they can always understand whether they like it or not ($M_{\text{male}} = 3.64$, $SD_{\text{male}} = 0.8$; $M_{\text{female}} = 4.25$, $SD_{\text{female}} = 0.65$; $d = 0.84$).

Respondents of the patriarchal-similaritive type: (1) men significantly more often participate in competition, rivalry with other people ($M_{\text{male}} = 3.9$, $SD_{\text{male}} = 0.99$; $M_{\text{female}} = 1.79$, $SD_{\text{female}} = 0.8$; $d = 2.34$); (2) men are more likely to believe that the construction of interaction with other people largely depends on their attitude to the subject ($M_{\text{male}} = 3.7$, $SD_{\text{male}} = 0.82$; $M_{\text{female}} = 2.86$, $SD_{\text{female}} = 0.86$; $d = 0.99$).

Respondents of the egalitarian-polarized type: (1) men are more likely to perceive other participants in the interaction as focused on their own interests and goals ($M_{\text{male}} = 4.75$, $SD_{\text{male}} = 0.5$; $M_{\text{female}} = 3.7$, $SD_{\text{female}} = 0.87$; $d = 1.48$); (2) women are more likely to believe that the basis of interaction is focus on the other people ($M_{\text{male}} = 2.5$, $SD_{\text{male}} = 1.0$; $M_{\text{female}} = 3.44$, $SD_{\text{female}} = 0.64$; $d = 1.12$).

Respondents of the egalitarian-similaritive type: (1) men are more likely to perceive different spheres of life (work, family, friends, etc.) as interconnected and strongly influencing each other ($M_{\text{male}} = 3.9$, $SD_{\text{male}} = 0.9$; $M_{\text{female}} = 3.23$, $SD_{\text{female}} = 0.86$; $d = 0.73$); (2) women are more likely to be guided by generally accepted norms and standards of behavior and not deviate from them ($M_{\text{male}} = 2.6$, $SD_{\text{male}} = 0.9$; $M_{\text{female}} = 3.54$, $SD_{\text{female}} = 0.58$; $d = 0.82$); (3) men are more likely to react to the actions of other people than to take the initiative ($M_{\text{male}} = 4.4$, $SD_{\text{male}} = 0.5$; $M_{\text{female}} = 3.38$, $SD_{\text{female}} = 0.75$; $d = 1.54$).

Discussion

The conducted research allowed us to prove the main hypothesis – the attitude to social interaction of people whose main sphere of communication is the Internet really differs depending on their sex and gender personality type. Firstly, the parameters were established by which the attitude to social interaction among men and women with the same gender type differs. Secondly, the content of the attitude to social interaction among men and women is characterized by different sets of interaction parameters, which vary depending on the gender personality type of a particular man or woman.

The additional hypothesis was partially confirmed. On the one hand, the total number of parameters that distinguish the attitude of men and women to social interaction is higher among representatives of the two "polarized" types – patriarchal-polarized and egalitarian-polarized – than among the two "similaritive" types (9 versus 7). On the other hand, the number of parameters of differences in attitude to social interaction that are not only statistically significant, but also the magnitude of their difference between men and women is such that it will noticeably manifest itself in interaction, among representatives of the types who have beliefs about the high polarization of the psychological characteristics of men and women, coincides with their number among representatives of the types who are convinced of the similarity of the psychological characteristics of men and women (5 versus 5).

In other words, there are differences in attitudes toward social interaction between men and women whose interaction is concentrated on the Internet and social networks, but their beliefs about the polarization of psychological characteristics of men and women, according to our data, did not entail a significant increase in these differences. Perhaps this is due to the specifics of interaction on the Internet: virtual communication is often more impersonal, less personalized, unlike real communication. It is possible for an individual to position themselves in different ways and experiment with gender images (Erofeeva, 2018), but it is more difficult to form a holistic image of a partner and build effective interaction in the virtual space than in face-to-face communication, since this will require the subject to have more developed psychological competence (Weindorf-Sysoeva & Pankina, 2020; Viktorova, 2020; Martinez-Pecino & Garcia-Gavilán, 2019), imagination, analytical skills (Molchanov, Almazova & Poskrebysheva, 2018), communication skills (Vilovatykh, 2020), because the socio-psychological conditions of interaction on the Internet and in real relationships are different (Andreeva, Volodina & Shurakova, 2020; Pak, 2020; Bunker, Saysavanh & Kwan, 2021; etc.). A significant portion of people prefer the Internet as a space for communication and interaction due to difficulties in communication and introverted character traits, rightly believing that this will make their personality traits less noticeable to the interlocutor, and the communication conditions will be more comfortable (Bunker, Saysavanh & Kwan, 2021). The accumulating experience of Internet communication averages out the differences in the communication and interaction patterns of men and women, and deeper ones remain, due, for example, to neurophysiological characteristics

(Barabanshchikov, Suvorova, 2021; Eslinger et al., 2021; Farwaha & Obhi, 2019). Among the results obtained, these include, at a minimum, the level of emotionality and expression, the desire for predictability of interaction through the development of its principles and rules (Titova, 2024b).

The above is indirectly supported by the data we obtained in our dissertation research in relation to other spheres. Men and women, representatives of the same gender type, who indicate work, family or friends as the main sphere of interaction, differ in their attitude to social interaction based on completely different combinations of parameters.

Conclusion

Sets of parameters that significantly differ in the attitude to social interaction among men and women with different gender personality types whose main sphere of interaction is the Internet and social networks have been identified.

The most significant differences in attitudes to social interaction in the Internet environment among men and women with different gender personality types are associated with subjective assessments of the following parameters: focus on one's own goals; focus on other people; manifestation of restraint in emotions; clearness of emotional assessment; frequency of competition; dependence of the nature of interaction on the attitude to the subject; interconnectedness of behavior patterns and relationships in different spheres of life; reliance on generally accepted norms; passivity, lack of initiative of the subject.

Women of the patriarchal-polarized type are more likely than men to perceive other participants in the interaction as focused on their own interests, to believe that in an interaction they can always understand whether they like it, and to rate the role of restraint in the interaction higher.

Men of the patriarchal-similaritive type participate in competition with other people significantly more often than women, and they tend to believe that the nature of the interaction strongly depends on their attitude to the subject.

Men of the egalitarian-polarized type perceive other participants in the interaction as focused on their own interests, while women of this type, on the contrary, believe that the basis of interaction is focus on the other people.

Men of the egalitarian-similaritive type perceive different spheres of life (work, family, friends, etc.) as interconnected and strongly influencing each other, they are more inclined to respond to the actions of other people than to take the initiative; women of this type tend to be guided by generally accepted norms of behavior and not deviate from them.

The prospects for studying gender differences in social interaction on the Internet are associated with a comparative analysis of the attitude to social interaction among men and women with different gender personality types in the Internet and offline spheres

(e.g., work, family, friends), which will allow us to understand to what extent common psychological patterns regulate interaction in the online and offline spheres. In addition, in our study, we did not specifically specify what exactly respondents do on the Internet – communicate in chats and on forums with other people or search for information on a particular topic regardless of other people. Clarification of the nature of activity on the Internet and social networks will allow us to deepen our understanding of the reasons for the peculiarities of the attitude of men and women with different gender personality types to social interaction that we discovered. It is necessary to continue studying the principles and adherence to them in Internet interaction, according to which the opinions of men and women with different gender personality types turned out to be different. It seems interesting to continue studying the fact that some people perceive interaction as independent of the attitude of other participants, which will also allow us to understand the mechanisms of the transition of interaction from an online to an offline format (flash mobs, rallies, etc., by participants of online communities, continuation of online dating in the format of real marital or friendly relationships, etc.).

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Psychological Security of Urban Dwellers as a Predictor of Their Inclination to Continue Residing in The City

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Abstract

Introduction. A multitude of factors, ranging from social to emotional, influence the propensity to reside in urban areas and psychological security is likely to be one of them. The objective of this study was to analyze the characteristics of psychological security, as a factor which could predict a city dweller's desire to retain residence in their current domicile. **Methods.** The study was conducted on a sample of 272 residents of the city of Yekaterinburg, aged between 18 and 60 years. The methodology of measuring the psychological security of city residents, developed by O. Y. Zotova and L. V. Tarasova, was employed to assess the psychological security of city residents. To investigate the desire to remain living in the city where the respondent currently resides, a questionnaire survey was used. **Results.** The study revealed that the desire of a city resident to maintain their place of residence is based on the features of psychological security. The determinants of this choice are shown to be significant, with variables such as environmental influence, reliability, and self-efficacy being particularly salient for older individuals, whilst for their younger counterparts, comfort, trusting relationships, and freedom are more important. The motivation to remain in one's place of residence, as expressed by the older group, is underpinned by a desire to exercise agency over the surrounding environment (i. e. a perception of reliability and control). In contrast, the inclination among the younger group is motivated by a sense of assurance in the favorable nature of the environment (i. e. a perception of comfort and friendliness). The findings of the study also demonstrated a strong correlation between parental preference and their offspring's place of residence,

with older residents exhibiting a stronger inclination to have their children reside in the same city. **Discussion.** The results of the study indicate an overwhelming preference amongst the Yekaterinburg populace to maintain their residency in the city, irrespective of age. The psychological security indicators of Yekaterinburg city residents are found to be at average and above-average levels, indicating that residents have satisfied their basic needs in self-preservation and that their own perception of psychological security in the city is satisfactory. A sense of psychological security is conducive to the confidence of residents in the livability, predictability, convenience and manageability of the city. This study enabled the identification of discrepancies between the various age groups. Within the older age group, security is not associated with a desire to alter the environment or to invest resources. In the younger age group, a predictor of reluctance to reside in the city is such a variable as freedom. They do not perceive the security of life in their city within the context of freedom, defined as the ability to make their own decisions and choose their own behaviour.

Keywords

desire to stay in the city, psychological security, urban environment, environmental control, reliability, self-efficacy, comfort, trusting relationships, freedom, age differences

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Introduction

The majority of individuals have never changed their place of residence. Nevertheless, there is a paucity of research on the motivations for and the rationales behind the decision to remain in one's current domicile. Despite the frequently-cited statistic that one in seven people in the world move frequently from one place to another (IOM, 2015), the academic literature offers only limited attention given to the reasons why the remaining six out of seven people do not move.

The act of residing within a metropolitan area necessitates a certain level of dynamism, impetus and strategizing. This constitutes a deliberate option that is subjected to recurrent assessment and application throughout the life course (Stockdale & Haartsen, 2018; Mata-Codesal, 2018). The question of why some individuals remain in

their place of birth for their whole lives merits rigorous investigation. It has been argued that the extant body of research in contemporary scientific publications is inadequate in addressing the factors influencing the propensity of city dwellers to maintain their residence within their urban areas.

Psychological security of city dwellers

The notion of psychological security for urban residents represents a novel concept in the field of psychology. It is imperative to comprehend the nuances of this construct to ensure a proper understanding.

It is the opinion of many researchers that the psychological security of urban residents is a multifaceted, intricate construct. Research has found evidence to support the hypothesis that psychological security can be increased by a range of factors. These include economic factors (Van Hal, 2015), positive interpersonal relationships (Kagan, 2009), and similar cultural perceptions of city dwellers (Rohner, 1984).

The psychological security of the individual within the urban environment is determined by the interplay and reciprocal impact of various individual characteristics, actions, and environmental factors. These environmental factors, in turn, influence the behaviour of city residents and their attitude towards urban life. The state of psychological security, whether it is present or absent, is a factor which gives rise to emotions, feelings and attitudes, as well as expectations. It has been established that individuals who experience psychological security have a propensity to perceive others as trustworthy (Whitson & Galinsky, 2008), the environment as manageable (Zhao & Jing, 2015; Yu & Zhao, 2016), and city living conditions as stable and familiar (Gao, Ahern & Koshland, 2016; Zhou, Tan & Watanabe, 2021). In the absence of psychological security, the perception of the environment is likely to be perceived through a lens of threat and danger, resulting in heightened vigilance and distrust of others.

We consider the psychological security of an individual residing within a city as a state of personality wherein the fundamental human needs for self-preservation are fulfilled. This concept is further defined by an individual's ability to perceive their psychological security within their urban environment. Consequently, psychological security can be conceptualized as a measure of an individual's mental stability, which, in turn, determines their response to various situational challenges (Zotova & Tarasova, 2024).

Psychological security and the desire to stay and live in the city

The metanarrative concept of "rootedness of people" is posited as a fundamental element responsible for the establishment of a social order that is considered correct and beneficial. This concept is further argued to be a natural and desirable state of affairs, offering a sense of convenience and predictability to the world around us (Bakewell,

2008). From this standpoint, the reluctance to migrate is the prevailing norm, with migration being regarded as an "aberration" that necessitates explanation and research. Consequently, the examination of the factors that motivate individuals to reside in one place for extended periods, or even their entire lifetimes, frequently does not receive the requisite attention from researchers, who tend to take the phenomenon for granted (Gaibazzi, 2011).

The motivation to continue residing within a metropolitan area is impacted by a multitude of factors, including but not limited to emotional, economic, social, political and geographical considerations. The notion of emotional attachment to a place is predicated on the premise that the duration of residence in a given location is directly proportional to the strength of emotional ties to others in that place, and to the intensity of one's attachment to the locale (Fischer & Malmberg, 2001).

Social retention factors refer to the family and community relationships that an individual has in their place of residence. Researchers have proposed the "affinity hypothesis", which suggests that family and friends represent valuable aspects of life that tend to encourage individuals to remain in their current place of residence (Haug, 2008). Factors such as marriage, childbearing and the cultivation of robust social networks have a concomitant effect on the propensity of individuals to remain residing within the confines of their established social sphere (Mulder & Malmberg, 2014).

Furthermore, a multifaceted array of objective and subjective factors has been identified as exerting influence on the propensity of individuals to remain in their current place of residence. Objective indicators encompass job availability (Morais & Camanho, 2011), climatic factors, physical beauty, geographical proximity to mountains or bodies of water, the number and level of amenities available in the city (Mulligan & Carruthers, 2011), cultural infrastructure such as theatres, cafes, restaurants, parks, hospitals, stores and health and education services (Cheshire & Magrini, 2006), and low crime rates (Glaeser & Sacerdote, 1999). Public transportation is also a relevant indicator (Royuela, 2011).

A significant disparity in the priorities of young adults, defined as those aged between 18 and 24, and their older counterparts, specifically those above 30 years of age, has been identified. According to the findings of the VCIOM survey, the predominant concern for the 18–24 age group was a high level of well-being (64%), while for the older demographic, aged 30 years and above, their primary focus was on achieving a peaceful existence (65%), along with engagement in professional endeavors and the care for their family (VCIOM, 2022). Consequently, it can be hypothesized that different age groups may demonstrate varied degrees of commitment to their place of residence, contingent on their individual needs and opportunities in that particular locale.

In recent academic discourse, a growing emphasis has been observed on subjective indicators of quality of life, happiness, well-being, and life satisfaction in urban environments.

The state of psychological security also relates to subjective indicators of life in the city. It appears to be a rational phenomenon that individuals seek to attain psychological security within the context of their residential surroundings. As an internal psychological resource, feelings of security facilitate information processing, regulatory responses to stimuli, mobilization of social support, and enhancement of well-being (Canterberry & Omri, 2013).

Aim and objectives of the study

It is through the perception of the environment, events and conditions that individuals assess their sense of security. The analysis enabled the formulation of **the study's aim**: to investigate the characteristics of psychological security as a predictor of a city resident's aspiration to maintain their place of residence. Additionally, it was hypothesized that the features that function as predictors would vary depending on the age of the urban population. In order to achieve the intended aim, the following research objectives have been outlined:

1. To ascertain the intensity of the desire to maintain residence within the city among its diverse age demographics.
2. To compare the pronouncement of psychological security exhibited by city residents of differing ages.
3. To identify the characteristics of psychological security among the city's diverse age groups, with a focus on factors that predict their inclination to maintain their current place of residence.
4. To determine the features of psychological security among elderly city residents, with a view to identifying the factors that predict their inclination to encourage their children to reside in this city.

Methods

The study sample

The present study comprised a sample of 272 residents of the city of Yekaterinburg, with ages ranging from 18 to 60 years (mean age = 36 years; SD = 12.45). As delineated by the World Health Organization, these age limits are defined as the upper limits of the age at which individuals are considered to be engaged in fundamental activities within the professional and social domains. The generation of the research sample involved preliminary targeting of Internet sites, with the objective of determining the localization of target groups (adult residents of Yekaterinburg). In order to appeal to potential respondents, an online strategy was implemented that incorporated banner advertisements, promotional offers on various news portals within the city of

Yekaterinburg, and the utilization of online platforms such as social networks, blogs, and groups. The distribution of the survey invitation across a variety of thematic platforms enabled the formation of a representative sample from diverse communities and groups. The respondents of the target audience completed an electronic questionnaire via online access. This questionnaire contained, among other things, socio-demographic information and information regarding their desire to live in their city in the future. Consequently, the study encompassed respondents who exhibited a vested interest in the research subject and a modicum of motivation, and were subjected to a preliminary screening process. This resulted in a sample that included respondents from a variety of targeted socio-demographic groups who demonstrated a certain degree of interest and motivation to participate in the study, as opposed to those who were merely willing to take surveys in exchange for financial compensation.

The gender of the respondents in the sample is distributed evenly, with 54% of participants identifying as female and 46% as male. 10.2% of respondents had secondary education, 47.5% had secondary vocational education, and 42.3% had higher education.

The present study consisted of Yekaterinburg residents who had lived in the city for a period ranging from one to 60 years (with an average residence length of 25 years and a SD of 16.27).

In accordance with the objective of the present study, the sample was stratified into two comparison groups: older (40 years and older) and younger (18 to 22 years).

Research methodologies and techniques

The study was conducted in accordance with the ethical principles established by the Russian Psychological Society (RPS, 2012). The protocol was approved by the Ethics Committee of the Faculty of Social Psychology, Liberal Arts University – University for Humanities, Yekaterinburg. Prior to participation, written informed consent was obtained from all subjects in accordance with the Helsinki Declaration.

The present study employed the methodology developed by O. Y. Zotova and L. V. Tarasova – **Methodology for measuring psychological security of urban dwellers** – to assess the psychological security of urban residents (Zotova & Tarasova, 2025). The methodology encompasses 38 statements measured on a five-point scale relating to six subscales: "Freedom", "Comfort", "Self-efficacy", "Trustworthy relationships", "Control over the environment" and "Reliability". Additionally, an integral indicator of psychological security of city residents is included. The methodology has been shown to possess satisfactory psychometric characteristics, including the qualities of retest reliability and consistency, as well as convergent validity (Zotova & Tarasova, 2025).

Furthermore, the questionnaire documented respondents' demographic information, categorized into gender, age, educational attainment, duration of urban residence, and their inclination to reside in their current urban location. For this purpose,

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respondents were invited to rate the degree of desire to maintain their residence in the named city using a 5-point Likert scale. Furthermore, the older adult subjects were invited to provide a quantitative score, on a 5-point Likert scale, indicating their level of desire for their children to reside in the city.

The subsequent data processing and analysis were conducted utilizing multiple.

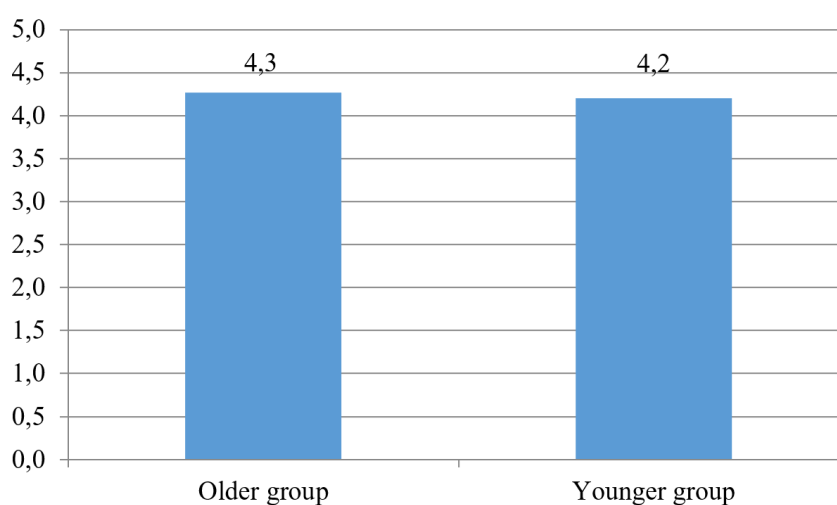
Results

Mean values by scales

In the initial phase of the study, a correlation analysis was conducted on the average indicators of Yekaterinburg residents expressing a desire to remain in the city in relation to their age (Figure 1).

Figure 1

The pronouncement of a desire amongst Yekaterinburg residents to remain in the city

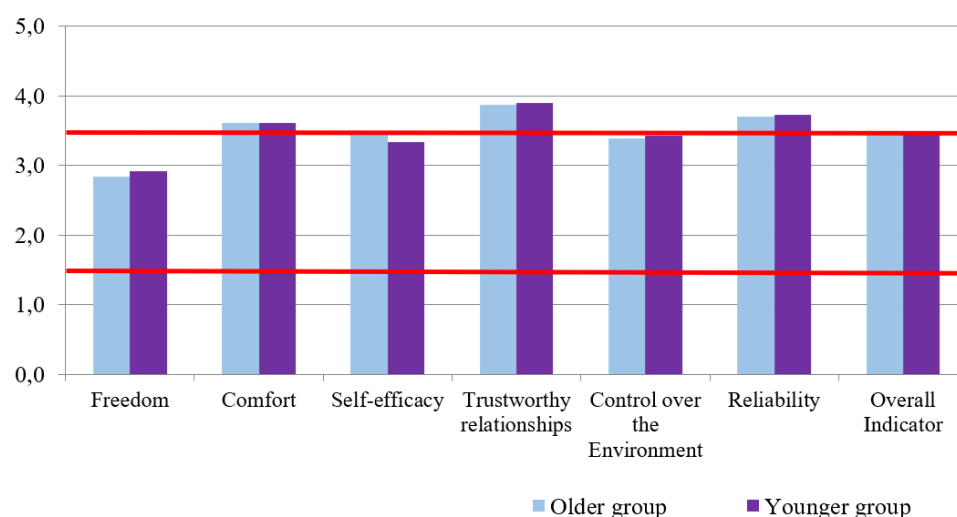


It should be noted that the indicators for both comparison groups are in the high range, i. e. representatives of both older and younger groups generally prefer to stay in their place of residence. The differences between the groups are not significant.

The theoretical analysis carried out led us to the conclusion that the factor that determines a person's desire to stay/leave their place of residence is their psychological security. In the next stage, we studied the characteristics of the psychological security of city dwellers and compared the data of the reference groups, divided according to age (Figure 2).

Figure 2

Indicators of psychological security of Yekaterinburg residents in comparison groups



The results obtained demonstrate that all private and integral indicators of psychological security of personality in the city in respondents from Yekaterinburg of both comparison groups are in the average range or tend to be high. In other words, the residents of Yekaterinburg are distinguished by their general psychological well-being, they are typically free from psychological distress, anxiety or frustration, and their adaptive capacities are uninhibited. The residents of Yekaterinburg have established reliable, open and trusting relationships with individuals who are willing to provide assistance and protection, as well as active listening. These individuals facilitate the expression of personal sentiments and behaviors, without the concern of being unduly influenced or exploited. In the case of residents of Yekaterinburg, there has been an evident positive experience of interaction with the environment (either stability and security of life, or successful overcoming of threats (in the past)). This experience produces a sense of predictability of upcoming situations and individuals see their future as positive, full of opportunities and free of insurmountable threats (the future). There were no significant differences observed between the groups.

Regression analysis

This study posited the hypothesis that psychological security features act as predictors of a city resident's desire to remain in their place of residence. To verify this hypothesis, a multiple regression analysis (method – forced inclusion) was performed on the data of the comparison groups – seniors and juniors. The following variables were used as independent ones: age of the interviewee, length of residence in the city of Yekaterinburg,

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scales reflecting the parameters of psychological security of the city residents – “Freedom”, “Comfort”, “Self-efficacy”, “Trustworthy relationships”, “Control over the environment” and “Reliability”.

The model that was obtained from the data set of the older sample demonstrates that 27.8% of the variance of the variable “Desire to remain in the city of residence” is attributable to the selected predictors (Table 1).

Table 1

Regression model for the dependent variable “Desire to remain in the city of residence” (older group)

R2	Adjusted R2	F	Predictors	β	t	p-value
0,278	0,256	12,325	Self-efficacy	-0,279	-2,357	0,019
			Control over the environment	0,159	2,107	0,036
			Reliability	0,677	3,226	0,001

Note. R2 – the coefficient of determination equal to the share of variance of the variable “Desire to stay in the city of one's residence” resulting from the influence of independent variables; F – the Fisher's F statistic, used to evaluate the significance of a regression equation; β – the standard regression coefficient which reflects the relative degree of influence of each predictor; t – the ratio of the unstandardized coefficient to its standard error; p-value – the value of p-level of significance, the probability that the result was obtained by random chance.

As illustrated in Table 1, the key factors influencing the older group's preference to remain in their current city include the following variables: “Control over the environment”, “Reliability” and “Self-efficacy”. Furthermore, there is a direct relationship between the first two variables and the desire to remain residing in the city of residence, while the third variable demonstrates an inverse relationship. The following factors are instrumental in determining the desire to remain in the city of residence:

1. The city resident possesses a subjective sense of control over the environment, awareness and environmental competence (the knowledge of the location, functionality and appropriate conduct required to achieve personal objectives within the environment).

2. The residents of urban areas generally feel that they are well-catered for by the authorities, police, social and medical institutions. They are confident that they can find suitable employment within their own city, and are satisfied with the environmental situation.

3. The city resident has not demonstrated a clear commitment to contributing towards the development of their immediate environment. Furthermore, there has been no indication from the individuals of their capacity to implement measures aimed at safeguarding against the adverse effects of external factors. The more residents perceive a greater capacity to modify their physical environment, the more they are inclined to relocate to other cities.

The regression model obtained for the younger sample indicates that 52.4% of the variance of the variable "Desire to remain in the city of residence" is subject to the influence of the predictors "Comfort", "Trustworthy relationships" and "Freedom" (Table 2).

Table 2

Regression model for the dependent variable "Desire to remain in the city of residence" (younger group)

R2	Adjusted R2	F	Predictors	β	t	p-value
0,524	0,506	29,358	Comfort	0,555	5,685	0,000
			Trustworthy relationships	0,227	2,316	0,023
			Freedom	-0,156	-2,018	0,047

Note. R2 – the coefficient of determination equal to the share of variance of the variable "Desire to stay in the city of one's residence" resulting from the influence of independent variables; F – the Fisher's F statistic, used to evaluate the significance of a regression equation; β – the standard regression coefficient which reflects the relative degree of influence of each predictor; t – the ratio of the unstandardized coefficient to its standard error; p-value – the value of p-level of significance, the probability that the result was obtained by random chance.

The following variables have been found to be significant predictors of the desire of representatives of the younger group to remain in the city of their residence: "Comfort", "Trustworthy relationships" and "Freedom". Of note is the direct relationship between the first two variables, concerning the wish of the subject to remain in their place of residence, and the inverse relationship observed between the third variable and the same, i. e. the desire of young people aged 18–21 to stay in their place of residence is the result of a combination of the following factors:

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1. A younger individual who is representative of this demographic perceives the urban environment as the most comfortable, finding urban logistics convenient due to factors such as the level of development of the transportation network and the quality of roads. When walking around the city, he experiences feelings of comfort and relaxation, and being able to live in the city allows him to satisfy most of his needs.
2. City residents between the ages of 18 and 21 demonstrate the ability to establish reliable, open, trusting relationships with a specific group of individuals within the urban environment.
3. A representative of the younger group is unable to experience a sense of autonomy, independence, freedom of life activity, development, self-realization, and freedom from external influence (or opportunity to protect oneself from external influence) within the context of an urban environment.

Thus, the parameters of psychological security of an urban resident, namely "Self-efficacy" and "Freedom", serve as the foundation not only for psychological security in a specific environment, but also as factors contributing to the adaptability of an individual's personality to different contexts. This, in turn, facilitates the expansion of an individual's social, behavioural and emotional repertoires.

Additionally, despite a uniform intensity amongst both samples in terms of a desire to remain in the city and psychological security parameters, these samples' desires were founded upon disparate factors (components) of psychological security.

The present study has demonstrated that 40.9% of the total variance in the variable "Desire for children to stay in the city of their residence" can be attributed to the influence of selected predictor variables "Self-efficacy", "Age" and "Reliability" (Table 3).

Table 3

Regression model for the dependent variable "Desire for children to stay in the city of their residence" (older group)

R2	Скорректированный R2	F	Предикторы	β	t	p-value
0,409	0,391	22,179	Самоеффективность	-0,366	-3,420	0,001
			Возраст	0,355	3,244	0,001
			Надежность	0,613	4,226	0,000

Note. R2 – the coefficient of determination equal to the share of variance of the variable "Desire to stay in the city of one's residence" resulting from the influence of independent variables; F – the Fisher's F statistic, used to evaluate the significance of a regression equation; β – the standard regression coefficient which reflects the relative degree of influence of each predictor; t – the

ratio of the unstandardized coefficient to its standard error; p-value – the value of p-level of significance, the probability that the result was obtained by random chance.

The results indicate that an increase in parental age is associated with a greater desire on the part of the parents for their child to remain in the city or town in which they currently reside. The remaining two variables are analogous to those identified in the analysis of the factors that influence the decision of representatives from the older age group to remain in their place of residence: "Reliability" and "Self-efficacy". And the relationship between self-efficacy and the dependent variable is once again found to be inverse.

Discussion

The study revealed that the majority of Yekaterinburg residents, regardless of age, expressed a desire to remain in their city. These findings are substantiated by the VCIOM survey, which indicates that the predominant proportion of respondents from Russia (71%) perceive their city or town as conducive to an enjoyable lifestyle, with a strong aversion to any notion of relocation (VCIOM, 2025). International colleagues recognize that megacities attract individuals with higher-paying jobs, high levels of living comfort, ample employment opportunities, and a superior quality of life (Borck, 2007; Puga, 2010), meet fundamental human needs and enable individuals to achieve their objectives (Shumaker & Taylor, 1983). In the event of the current residence being rated higher than the available alternatives, the individual is more likely to be inclined to remain in that location.

The psychological security indicators of Yekaterinburg city residents are at average and above-average level, which suggests that the residents have satisfied their most fundamental needs in terms of self-preservation, and that they perceive their own psychological security within the city as satisfactory. Psychological security fosters confidence among individuals regarding the livability, predictability, convenience and manageability of a city (Zotova & Tarasova, 2024). As indicated by E. Eizenberg, research has demonstrated that a sense of security can enhance sense of place and social cohesion (Eizenberg, 2012). Furthermore, E. Eizenberg and Y. Jabareen's study revealed that this sense of security can increase urban resilience (Eizenberg & Jabareen, 2017), with M. Bonaiuto and S. Alves' research highlighting its contribution to place satisfaction (Bonaiuto & Alves, 2012).

The findings of the present study demonstrated that amongst the private indicators of psychological security, the scales "Trustworthy relationships" and "Reliability" yielded the highest scores amongst the residents of Yekaterinburg city. T. P. Skripkina noted that "any entity, be it an object in the immediate environment or the world in its totality, engenders an attitude of trust only if it is characterized by security and reliability, and is useful" (Skripkina, 2000, p. 85). That is to say, the level of security is dependent upon the subjective, personal relationship that each individual has with the other people living

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in close proximity to them in this city, on the neighboring street, or in the apartment across the street... Scholars from overseas have observed that the presence of secure and nurturing social relationships is not only advantageous to the individual (Kagan, 2009), but also serves to encourage prosocial behaviour (Mikulincer & Shaver, 2007).

The study revealed that the predictors of the desire to stay in their city for the older group were the ability to have control over the environment and reliability. A conviction in an individual's capability to exercise control over their environment and to achieve desired outcomes is of importance for their psychological well-being. E. Steptoe and colleagues, as well as C.-L. Zhou and A. Zhi, believe that an individual's lack of confidence in their ability to manage and control their life can result in the onset of depressive symptoms (Steptoe, Tsuda & Tanaka, 2007; Chou & Chi, 2001). Individuals with a diminished sense of control often perceive their lives as being out of hand, unable to manage the unanticipated challenges that life presents. Consequently, they perpetually find themselves in a state of insecurity.

The present study revealed that there are differences between the various age groups. Representatives of more advanced age groups demonstrated a lack of association between security and the desire to pursue change within their environment or to allocate their resources. The prevailing assumption is that a strong sense of security among older adults is frequently associated with a state of inaction or passivity, a condition that is often provided by others. Conversely, action is often perceived as a source of danger. Thus, the Russian scientists A. Zaliznyak, I. Levontina and A. Shmelev, while discussing Russian culture, pointed out that the nation has absorbed a range of ecclesiastical concepts and New Testament principles regarding the vanity of all activity, the futility of worldly endeavors. They characterized these ideas as an argument in favor of inactivity (Zaliznyak, Levontina & Shmelev, 2002).

The predictor of reluctance to remain in the city, the aspiration to relocate among representatives of the older age group, is characterized by a desire for action and transformation in life.

In case with young people, the results of the survey show that they express satisfaction with several aspects of urban life. These include the convenience of urban logistics, the accessibility of basic needs within the city, and the quality and quantity of interpersonal relationships that contribute to a sense of security in the city. R. Whisler and colleagues, foreign scholars, have drawn similar conclusion that cultural and recreational amenities in urban areas are of particular importance to young people (Whisler et al., 2008).

The findings of the present study demonstrated that a variable such as freedom is a significant predictor of reluctance to remain in the city among the younger age group. They do not perceive the level of security afforded to them in their city in the context of personal liberty and the capacity to make independent decisions and adopt a range of behaviors. In other words, the security experienced by young people aged 18–21 in their city is closely associated with a perception of diminished personal freedom and

autonomy. This result is indicative of an increasing value placed on freedom at this particular age (Stepanova, 2022). Residing in one's place of origin and having ready access to abundant resources exact a toll: the younger generation are subject to close parental oversight and exhibit a marked degree of intergenerational involvement (Scabini, Marta & Lanz, 2006), dreaming of freedom from external influences and autonomy. However, Polish psychologists P. Pustulka and her colleagues noted, however, that even when young people notice something "restrictive" about their parents' control, they rarely prioritize freedom over developing relationships and resources (Pustulka, Sarnowska & Buler, 2021).

It is thus demonstrated that the desire to remain in the city of residence, as evidenced by representatives of the older group, is predicated upon the capability of controlling the environment (reliable and controlled). Conversely, the aspiration of the younger group is determined by their confidence in a favorable environment (comfortable and amicable).

Conclusion

The findings of the present study suggest that the motivation of urban inhabitants to maintain their current place of residence is founded on the characteristics of psychological security. The psychological security of an urban resident as a state of his personality constitutes a systematic assessment of external environment and corresponding intentions in relation to it. Concurrently, the predictors influencing a city resident's inclination to remain in their place of residence vary according to the age of the city population. It is shown that the desire of older representatives to remain in their place of residence is primarily driven by their capacity to manage the environment, while the motivation of younger representatives is predominantly influenced by their sense of environmental optimism.

Objective factors such as respondents' age and length of residence in Yekaterinburg were insignificant in the formation of the desire to stay in their city. It was only when respondents in the older group were asked "Would you like your children to live in this town" that the age factor showed its influence. The results revealed that the older the inhabitants of a city were, the more likely they were to want their children to live in the same city.

Furthermore, it is found that "Self-efficacy" and "Freedom" – the parameters of psychological security of a city resident – act as a basis of psychological security of the individual not only in the environment of a particular city, but are also factors of adaptive activity of the individual in other environments.

The findings of this study can be utilized by environmental psychologists and sociologists in their research, with a view to clarifying the psychological mechanisms that underpin an individual's decision to alter their place of residence. This understanding can facilitate an improved appreciation of phenomena such as sedentarization and the spatial mobility of the population.

This study does not claim to be universal and is subject to limitations related to the characteristics of the research sample. The total number of respondents and the place of their residence (within the boundaries of one city) allow this study to be considered as a pilot one, which provides opportunities for further hypotheses.

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Olga Yu. Zotova – general supervision of the research; development of the theoretical concept; review of domestic and foreign studies on the problem of the article; preparation of the literature review; preparation and scientific editing of the article's text; final approval of the version for publication.

Lyudmila V. Tarasova – research methodology design; statistical analysis conduct; preparation and scientific editing of the article's text; results visualization; final approval of the version for publication.

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Conflict of Interest Information

The authors have no conflicts of interest to declare.

Youth in Post-Conflict Regions: Socio-Psychological Problems and Attitudes Toward Higher Education (The Case of Armenia)

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Abstract

This study aims to analyze the functioning of the higher education system in post-conflict societies as perceived by young people, using the Armenian context as a case study. The article synthesizes findings from a range of international studies to identify key characteristics and challenges typical of post-conflict environments. It explores how long-term and short-term military conflicts affect higher education across different countries. **Methods.** The study involved 625 participants aged 18–35 residing in Armenia. An interdisciplinary approach was adopted, combining both qualitative and quantitative research methods, including group and individual interviews. A comparative analysis was conducted between higher education challenges in Armenia during the pre-war period and those observed after the conflict, emphasizing youth perceptions. Results: Issues present before the conflict (up to early 2020) have intensified in the post-war period (late 2020 to 2023), alongside new challenges linked to ongoing instability, psychological trauma, and health concerns. Despite this, the perceived value of higher education among young people has grown, with many viewing it as a critical means for overcoming personal and societal crises. **Discussion.** The findings provide a foundation for developing strategies to reform the higher education sector in post-conflict contexts. The study highlights the increasing importance of understanding youth perspectives in rebuilding educational systems and fostering societal recovery.

Keywords

Higher education, post-war society, socio-psychological challenges, student youth

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Introduction

The education system of any society is fundamentally shaped by the need to address specific social challenges. As a result, it is closely linked to both internal dynamics and external factors that influence societal functioning. Ultimately, the education system functions as a mechanism to meet the societal demand for shaping a particular type of citizen. Changes in educational goals, priorities, and instruments are often driven by political processes, including public debates and competition among political forces, which can lead to reforms, especially in higher education (Pashkov, 2015).

Transformations in Post-War Societies

Armed conflicts lead to profound societal transformations that directly affect the functioning of higher education institutions. Scholars such as Giddens (2009) and Kaldor (2007) argue that the nature of warfare has significantly changed over the past three decades. These so-called "new wars" place information technologies at the center of military strategy and operations, prioritizing them over traditional material resources (Kaldor, 2012; 2013; Chinkin et al., 2020).

Post-war societies exhibit a range of distinct socio-demographic characteristics (Höglund & Kovacs, 2010), including:

- significant demographic challenges;
- an increase in single-mother households and the emergence of so-called “women’s societies”;
- elevated crime rates;
- declining social cohesion and trust (Fiedler & Rohles, 2021).

In the Armenian context, societal transformations following the First Artsakh War (1992–1994) have been analyzed from sociological, psychological, historical, and ethno-political perspectives. Kotanjian (1992) highlights the rise of national and ethnic consciousness, the intensification of ethnic conflicts, and the spread of national movements during the 1990s. These developments underline the unique character of post-conflict societies and emphasize the importance of studying the adaptation mechanisms used by different social groups. Among the most common psychological consequences of armed conflict for children and youth are post-traumatic stress disorder (PTSD) and depression (War Child UK, 2013). Other frequent disorders include acute stress reactions, attention deficit hyperactivity disorder, panic disorder, childhood-specific anxiety disorders, and sleep disturbances. These conditions often co-occur, with older children being particularly vulnerable (War Child UK, 2013).

Woods (2011) identifies several key psychological effects of war on young people:

- trauma;
- post-traumatic stress disorder;
- decreased confidence in the future.

War negatively affects young people’s educational performance, peer relationships, and overall life satisfaction. Longitudinal studies confirm that both direct exposure to conflict and living in post-conflict environments can have detrimental effects on mental health. However, protective factors, especially support from family and community, can help mitigate these consequences (Betancourt et al., 2019).

Anthropological and ethnographic research conducted in post-conflict regions such as Sierra Leone, Kosovo, and Bosnia and Herzegovina reveals common patterns among youth. These include changes in employment practices and widespread use of avoidance and silence as coping strategies (Palmberger, 2018). Many young people view conflict-related experiences as oppressive and seek to distance themselves from politicized social discourse (Eastmond et al., 2012).

Studies on the impact of conflict on higher education systems highlight several critical disruptions: destruction of infrastructure, displacement of students and faculty, curriculum revisions, and heightened gender inequalities (Chinkin et al., 2020). Universities in countries such as Syria, Iraq, Ukraine, and Afghanistan have faced major challenges in maintaining academic continuity and quality. These disruptions often lead to long-term educational decline, with serious consequences for socioeconomic development (Mulatedzi, 2024).

Despite these difficulties, both students and academic staff have demonstrated significant resilience. International cooperation and support from global educational organizations have been crucial in maintaining access to education and rebuilding higher education systems after conflict. Such efforts are essential for promoting long-term peace, stability, and development (Kayyali, 2024).

Youth, in particular, are forced to revise their aspirations and strategies for achieving them in response to post-war social transformations. Therefore, analyzing how young people adapt within higher education in post-conflict contexts is vital for informing future development strategies and addressing educational challenges during crises.

Analysis of Youth Studies in Pre-War Armenia

Research on Armenian youth prior to the outbreak of armed conflict points to several systemic challenges in the education sector (Movsisyan, 2022; Avetisyan et al., 2023), including:

- rising school dropout rates, especially among boys;
- misalignment between educational content and labor market needs;
- delays in incorporating technological advancements into education;
- unequal access to vocational education, particularly in rural areas;
- weak integration of teaching, research, and practical training;
- low levels of student engagement in educational processes.

Studies show that both compulsory and higher education in Armenia suffered from serious quality issues even before the conflict (Movsisyan, 2022). The main contributing factors were:

- a disconnect between strategic management and quality assurance;
- limited involvement of stakeholders in quality assurance processes;
- weak impact of internationalization on curriculum development;
- lack of comprehensive internal and external evaluation mechanisms;
- underdeveloped internal documentation systems for quality control.

For students, "quality of education" primarily means labor market relevance and acquisition of competitive skills. By contrast, policymakers tend to emphasize compliance with national educational standards, while faculty focus on the effectiveness of teaching practices (Movsisyan, 2022).

Generally speaking, in youth studies, the issues of employment and education are typically examined in relation to one another. Many studies in Armenia also emphasize the disrupted connection between education and the labor market (Movsisyan, 2022). Higher education is not a guarantee of employment in Armenia, as a significant proportion of the unemployed hold university degrees (Statistical Yearbook of Armenia, 2024, p. 126).

Survey data from students in Yerevan between 2015 and 2019 (Grigoryan et al., 2017; Zaslavskaya, 2017, 2019; Berberyan, 2018) reveal strong feelings of alienation from the education system. Several categories of student alienation in the sphere of pre-war higher education can be identified. First, there are manifestations related to the educational process, including low levels of engagement in lectures and seminars, weak motivation for independent study, limited interest in coursework, and a focus on formal indicators such as obtaining high grades and acquiring a diploma in a purely formal manner. Second, there are forms of alienation connected to university life, such as a low sense of involvement in institutional activities, limited trust in university administration, and a perceived lack of participation in decision-making processes within the university. Third, manifestations related to professional preparedness and the labor market include an incomplete understanding of one's future professional competencies and a high level of anxiety regarding future employment. An important finding was students' limited understanding of the roles and functions within the higher education system. Many expressed a desire for greater involvement in curriculum development and academic decision-making, reflecting confusion about institutional responsibilities. Moreover, over 80% of students considered it acceptable for peers to obtain grades through informal means (e.g., bribes or personal connections), indicating a concerning normalization of academic misconduct.

Social alienation also contributed to emigration intentions: 67.3% of students reported a desire to eventually leave Armenia. Their main motivations included better job prospects, access to higher-quality education, and improved living standards. Notably, only 45.3% believed that Armenian higher education could ensure decent employment, while over 30% doubted the system's ability to produce competent professionals. Among those intending to emigrate, only 48% envisioned their future in Armenia. A strong correlation was observed between levels of student alienation and intensity of migration aspirations.

Purpose of the Study

The purpose of this study was to identify the main socio-psychological issues in the field of higher education among Armenian youth in the context of post-war societal transformations, and to compare these with pre-war issues where possible.

Methods

The following methods were employed in the study:

1. Traditional document analysis was conducted on materials related to the social adaptation of young people within the framework of the "person–environment" system. This included an examination of the current status of youth, statistics on social change, analytical reports, descriptions of the legislative framework, and other relevant documents.

2. Quantitative Survey. A representative sample of Armenia's youth population aged 18–35 was surveyed, with a sampling error of no more than 0.05 and a significance level of 0.05. A total of 625 young individuals from across the Republic of Armenia participated. A stratified, random, four-stage cluster sampling method was applied. The survey identified factors influencing young people's perceptions of problems in higher education in the post-war period.

3. In-depth interviews with key informants were conducted to explore young people's interpretations of higher education issues related to the military conflict and the pandemic, as well as their expectations and future plans. Expert interviews also provided practical policy suggestions for addressing the needs of young people.

4. Focus Group Discussions. The main objective of the focus groups was to examine young people's perceptions of the current situation, their expectations, potential behavioral changes, and dominant response patterns.

In total, 12 individual interviews and 8 group discussions with young people were conducted, along with 6 expert interviews involving university professors, researchers, psychologists, and sociologists working with youth. A purposive sampling method with combined and independent selection criteria was used. The combined criteria included the following typical groups:

- Three age groups: 18–22, 23–29, 30–35;
- Two gender groups: male, female;
- Three residential areas: village, regional city, Yerevan;
- Two employment statuses: employed, unemployed.

An additional criterion was participation in the military conflict: the sample included youth who had directly participated in the war and forcibly displaced young people from Artsakh.

Results

The pandemic and armed conflict had a profound impact on youth engagement in education. The transition to distance learning during the pandemic, alongside hostilities and security concerns, significantly hindered the realization of the right to education for many young people.

Following the military conflict, polarization became a defining feature of Armenian youth. As noted in the National Report (2022), "the human development of young people has been extremely uneven." According to the expert survey results, this inequality was evident in several domains: education, employment, health, political engagement, and civic participation.

It is particularly noteworthy that unemployment was cited as the most pressing issue by young people even before the war. However, in the post-conflict period, this problem gained new urgency. Unemployment was increasingly mentioned alongside emigration, financial hardship, and the lack of quality education as primary concerns. This shift likely reflects several factors: heightened migration intentions after the war, and a growing perception of education as a viable means of overcoming unemployment (see Table 1).

Table 1
Problems of youth in the post-conflict period

Issues raised by young people	Percentage of voters
Unemployment	70,9
Emigration	29,6
Difficult financial situation	24,6
Bad habits	22,9
Lack of quality education	16,0
Paid education	15,5
Lack of opportunity to spend free time	11,5
Lack of entrepreneurial mindset	9,3
Lack of opportunities for self-expression	9,1

Issues raised by young people	Percentage of voters
Uncertainty in everyday life and the future	7,0
Lack of civil liability	3,8
Strained relations with parents	3,7
Lack of sports facilities	3,5

It is no coincidence that, whereas in the past personal connections were prioritized when seeking employment, young people now place education at the forefront. According to the study, vocational education and qualifications have become more influential factors in youth employment than personal connections. Specifically, 35.2% of respondents identified vocational education as the primary factor in securing employment, while 19.1% cited knowledge of foreign languages. Interestingly, 12.7% mentioned physical appearance, and 30% still considered personal connections important (see Table 2). However, in the pre-conflict context, over 67% of respondents had named personal connections as the main factor in gaining employment, highlighting their previously dominant role (Galstyan, 2023).

Table 2

Factors of employment through the eyes of youth in the post-conflict period

Factors	I completely disagree	I disagree	I agree	Completely agree
Personal skills and social privity	14,6	9,7	44,9	30,7
Education, specialization and qualification	9,0	16,5	39,3	35,2

SOCIAL PSYCHOLOGY

Factors	I completely disagree	I disagree	I agree	Completely agree
Personal connections	12,4	30,0	27,7	30,0
Experience	15,4	36,0	30,0	18,7
Knowledge of foreign languages	27,3	34,8	18,7	19,1
Appearance	27,7	39,3	20,2	12,7

In 2021, 31% of young people in Armenia were unemployed and not engaged in education or training, with 63% of them being women. In 2020, both the pandemic and the armed conflict disrupted the full participation of youth in the education system (WB Data, 2021). The war exacerbated the challenges of distance learning caused by the pandemic. Youth respondents assessed the quality of education critically, particularly regarding survival in military conflict conditions. They emphasized the lack of training in media literacy, first aid, area orientation, basic weapons knowledge, and psychological preparedness to handle fear, tension, and stress.

Below are excerpts from interviews with respondents:

"Many people died in vain simply because they did not pay attention to education. They didn't think about the danger, didn't try to understand their location, the speech of locals if relocated, or which road went where and why... Many died because of this, nearly 25%."

(Group discussion, male, 18–22 years old, urban resident)

"We need to rethink all this. People should be more prepared. Even if they don't have a driver's license, they should know how to drive or use weapons if necessary. Most drivers were afraid to drive — that was a major problem in the army. I wasn't a designated driver, but I ended up driving because others refused out of fear."

(Personal interview, male, 20 years old, rural resident)

Fear has become a persistent condition for young people following the epidemic and the war. As Ulrich Beck notes, fear is a defining feature of the "risk society" (Beck, 1992). In such societies, the future appears uncertain, trust in the future diminishes, and actual risks are perceived as individual failures, undermining the potential for collective action. Emergencies tend to become normalized (Beck, 1992).

In 2020, the education of children and youth forcibly displaced from Artsakh faced serious difficulties. According to research, upon arrival in Armenia, they experienced challenges adapting to new living and learning conditions. Psychological stress and panic hindered their ability to study effectively. A socially secure environment was essential for adequate adaptation in the field of education (Abrahamyan, 2023; Berberyan, 2023). The study revealed clear signs of socio-psychological issues, especially among youth who had experienced personal loss. One of the key contributors to panic, stress, and trauma mentioned by participants was media — particularly news and misinformation spread through social networks. Notably, a pattern of social media withdrawal was observed among some younger participants (aged 18–19), which can be described as a form of digital retreatism in post-war societies. Respondents also stressed the importance of psychological and spiritual conversations, noting a lack of opportunities to engage in them.

"Psychological conversations are important. There are many doctors, but they need to talk to veterans. There are cases of psychological issues after the war."
(Group discussion, male, 18–22 years old, urban resident)

While youth research often suggests that religion plays a minor role in the lives of young people, several participants highlighted an increased engagement with faith and the church.

"I was in Artsakh during the war, and never in my life had I experienced such feelings—fear and loss. The first thing that has helped me begin to adapt to this situation after the war was that I became closer to the Church and to my faith. Previously, I did not fully realize its significance; I would go to church and light candles out of a sense of obligation. I stayed in Yerevan until November 7 and left Artsakh late, but I could not bring myself to go to church or pray. We had no information about my father until November 1, when we were told that they were under siege in Lachin. On the very day I finally went to the church in Abovyan, my father was the first to call me and said: "I'm okay, we are descending to Stepanakert." Since that day, I have come to value the role of the Church and my faith in my life even more deeply."

(Group discussion, female, 18–22 years old, Yerevan)

Young people strongly emphasized the need to address the consequences of the military conflict, particularly in relation to mental health recovery.

"I want to focus on people who were affected by the war — those who took part in it. I can say from my own experience that every moment lived freely reminds me of friends who died, and the health that was lost."

(Personal interview, male, 18–22 years old, urban resident)

Another post-war educational issue raised by respondents concerns the content of the curriculum. There was particular emphasis on revisiting how history is taught. Participants also expressed a desire to make education more pragmatic and solution-oriented, aimed at overcoming the specific challenges of post-war life.

Suggestions for curriculum updates included the introduction of mental health education, the promotion of healthy lifestyle practices, and information on avoiding harmful habits.

Youth unemployment remains a major issue in Armenia, consistently higher than in other age groups. The high rate of youth unemployment reflects underutilized potential, particularly among girls aged 15–24. Post-conflict data shows a general decline in youth employment, except among those aged 30–34 though even this group saw a decrease in employment in 2020. Employment distribution by sector also changed, with agriculture being a significant area (see Table 3).

Table 3

Comparative characteristics of employed youth in 2019 and 2022

Employment Rate	2019	2022
Number of employees in the 15-19 age group	14,000	12,900
Number of employees in the 20-24 age group	74,800	61,900
Number of employees in the age group 25 – 29 years	126,200	107,000
Number of employees in the age group 30 – 34 years	140,500	146,200

Employment Rate	2019	2022
Employment rate	37,2	35,3
Women's Employment Rate	29,4	26,6
Men's Employment Rate	44,8	43,5
Employment rate in the city	36,5	32,8
Rural Employment Rate	38,2	39,3
Percentage of youth employed in agriculture	19	16
Percentage of young people employed in construction	10	11
Percentage of young people employed in industry	9	9
Percentage of youth employed in services	63	64

Employment Rate	2019	2022
Percentage of people with higher education among employed 42 youth	42	36
Percentage of people with basic general education among employed youth	5	6
Percentage of people with secondary, secondary specialized and vocational education among employed youth	53	58

Note. Sources: *Labor Market in Armenia, 2021*, Statistical Committee, <https://armstat.am/am/?nid=82&id=2447>, *Labor Market in Armenia, 2023*, Statistical Committee, https://armstat.am/file/article/lab_market_2023_9.pdf

It is noteworthy that unemployment had long been identified by young people as a key problem even before the military conflict. However, in the post-war period, this issue has taken on new dimensions. Alongside unemployment, young people increasingly mention emigration, difficult financial conditions, and the lack of quality education as primary concerns. This shift may be attributed to several factors: migration intentions intensified after the conflict, and education came to be viewed as an effective means to overcome unemployment. Notably, while personal connections used to be a priority in job seeking, young people now place education first.

In the study, vocational education and professional qualifications emerged as stronger factors influencing employment than personal connections. Specifically, 27.7% of respondents identified vocational education as the main employment factor, 27.3% noted knowledge of foreign languages, and 27.6% mentioned appearance. Meanwhile, only 12.4% of young people identified personal connections as a key factor. This contrasts sharply with pre-war data, where over 67% of respondents cited personal connections as the primary employment factor.

The proportion of young people seeking formal and non-formal education to enter the labor market has increased compared to pre-war times. Prior to the conflict, fewer young people actively pursued education as a pathway to employment. Thus, it can be concluded that education as an adaptive practice has become more widespread among

youth in post-war Armenia. Approximately 15.7% of young people now plan to pursue a profession, compared to 8.2% before the conflict (Abrahamyan, 2023).

During the COVID-19 quarantine, most Armenian youth participated in online courses and engaged in self-directed learning. The growing popularity of non-formal education following the conflict may be linked to this pre-existing trend toward self-education and online learning during the pandemic.

Gender differences emerged in perceptions of personal agency in overcoming the consequences of military conflict: young women tend to assess the importance of their own personality in coping with post-conflict challenges lower than young men do. Additionally, with increasing education levels, young people tend to attribute less influence to their personal traits in overcoming these consequences.

Discussion

Summarizing the findings, the transformations in young people's perception of higher education and its role in adaptation practices in post-war Armenia appear complex and somewhat contradictory. While many pre-war problems persist, they are now overlaid with new challenges linked to the military conflict, security concerns, and future uncertainty. Issues such as access to education and its quality remain relevant. In addition, post-war realities have introduced new challenges, including uncertainty, the constant threat of renewed conflict, mental health problems, and incomplete realization of the right to education. These factors compel young people to continuously seek new adaptive strategies in conditions of persistent uncertainty (Berberyan, 2023; Avetisyan et al., 2022).

Whereas pre-conflict problems of higher education mainly concerned unemployment and the mismatch between curricula and labor market demands (Berberyan, 2018), the post-war period highlights mental health concerns and the need for education to address survival, stress management, and psychological trauma. Furthermore, the perceived importance of higher education has increased among youth after the conflict. If pre-war students exhibited relatively high alienation from higher education (Zaslavskaya, 2019), post-war students demonstrate greater engagement and instrumental valuation of education as a means to overcome material and psychological hardships.

In the post-war context, young people emphasize the importance of aligning higher education with modern information technologies. One of the major concerns is the lack of media literacy education, which is seen as critical.

Comparing these findings with studies from other countries affected by conflict, it is evident that prolonged wars can severely damage or even collapse higher education systems, as seen in Syria and Afghanistan (Kayyali, 2024). In contrast, shorter conflicts create a unique educational environment where, despite disruptions, new factors emerge that contribute to the development and increased social value of higher education in post-war societies (Alkol, 2024; Fanthorpe & Maconachie, 2010; Mysak,

2021). Maintaining this positive trajectory requires institutional reforms that address the evolving educational needs of young people amid contemporary transformations (Ermakov et al., 2022; Denisova et al., 2022).

Conclusion

Researching and developing effective mechanisms for implementing institutional innovations in higher education systems is one of the most urgent tasks for many countries in post-war contexts. These mechanisms will largely determine how quickly and effectively societies can overcome post-war challenges that might otherwise impede the development of critical social institutions. Youth research plays a vital role in identifying and addressing these challenges in post-war societies.

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Conflict of Interest Information

The author has no conflict of interest to declare.