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Russian Psychological Journal

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Russian Psychological Journal accepts theoretical, methodological and empirical contributions relating to scientific research results and achievements in implementation of these results and other innovations in the field of psychology and education.

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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 and education.

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Meaning-in-Life Orientations in Individuals With Different Levels of Fear of Death

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Abstract

Introduction. This paper examines meaning-in-life orientations in individuals with different levels of fear of death and provides a theoretical overview of the phenomenon of death in the context of studies of meaning-in-life orientations. Attitudes towards death and their associations with the value and meaning sphere are insufficiently developed in Russian psychological studies. The phenomenon of death should be studied in the context of meaningfulness of life and the formation of a conscious attitude towards life. This study is first to examine associations among the meaningfulness of life, life satisfaction, and attitudes towards death in individuals for whom the issues of death and dying are not relevant in their current life situation.

Methods. These were psychodiagnostic techniques, including the Life Satisfaction questionnaire, the Meaning-in-Life Orientations test, MLO (Russian-language version of the Purpose-in-Life Test modified by D. A. Leont'ev), and the Death Attitude Profile-Revised (a modified version by T. A. Gavrilova) and methods of mathematical statistics for data processing (descriptive statistics, Pearson's correlation coefficient, and Mann–Whitney test).

Results. This section contains data from an empirical study involving 148 individual participants aged 18–50 years. The findings indicate that respondents with a high level of fear of death are characterized by a lower level of vital involvement and meaningfulness of life.

Discussion. The results suggest that there are associations between the level of fear of death and meaning-in-life orientations. Significant differences in the levels of vital involvement, meaningfulness of life, and attitudes towards death were found among individuals with different levels of fear of death. Attitudes towards death are directly related to the meaningfulness of life and life satisfaction.

Keywords

meaning-in-life orientations, fear of death, neutral acceptance, approach acceptance, death avoidance, escape acceptance, thanatic anxiety, suicidology, life satisfaction, meaningfulness of life

Highlights

- Attitudes towards death are associated with the level of meaningfulness of life and life satisfaction.
- Compared to individuals with a low level of fear of death, those with a high level of fear of death are characterized by a lower level of meaningfulness of life and life satisfaction.

► Individuals with a high level of fear of death are characterized by approach acceptance of death – belief in an afterlife. Neutral acceptance of death as an inevitable step in human development is the dominant attitude towards death in those with a low level of fear of death.

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Introduction

In recent decades, the existential approach to psychological research has been actively developing. The findings obtained in this field are not only of great scientific relevance, but also of great importance for psychotherapeutic practice. Studies of attitudes towards life, definitions of meaning-in-life strategies and orientations, metaphorical representation of the image of the world and self-image are widespread (Abul'khanova-Slavskaya, 1991; Leont'ev, 2003; Abdulgaliimova, 2011; Abakumova, Ermakov, & Rudakova, 2014; Koromyslov, 2019; etc.). However, the concept of life is inextricably linked to the concept of death. We should note that most studies represent the issues of death in the framework of palliative medicine, grief theory, and suicidology (Kyubler-Ross, 2001; Gnezdilov, 2002; Lipetskii, 2013; Chistopol'skaya et al., 2014; Bakanova, 2015; Kukina, 2015; Pinegina, 2017; etc.). Nevertheless, death is an event that every person faces, and not only in the case of a serious illness or difficult life situations. Thus, there is an obvious discrepancy between a too narrow specialization of the study of the phenomenon of death within certain groups of population, for whom the issues of death are relevant in current life situations (serious illness, attempted suicide, loss of loved ones, aging, situations that threaten life, etc.) and the objective breadth of this phenomenon that covers all the categories of the population, regardless of age, health status, level of well-being, and any other factors.

Issues of death are the most important existential issues that individuals face not only during difficult life situations and that may affect all the spheres of human life, in particular the value-meaning sphere. For the most part, the study of these issues is presented in the areas related to psychology (anthropology, sociology, and cultural studies) and is not sufficiently developed in Russian psychology in the context of attitudes towards death among individuals staying outside difficult life situations. Nevertheless, an analysis of previous research provides the basis for studying the phenomenon of death in the context of meaning-in-life orientations.

According to a number of researchers – psychologists, sociologists, anthropologists, culturologists (Aries, 1992; Grof, 2002; Wong, 2013; Gor'kovaya & Bakanova, 2014; Klenina & Peskov, 2015; Mokhov, 2016; Soldatova & Zhukova, 2018), the attitude towards death is a marker of the maturity of an individual and a society, which accepts certain types of attitudes towards death and their symbolic representation in the form of rituals, ceremonies, monuments, and symbols. Consequently, the attitude towards death in the form of its acceptance is an indicator of psychological maturity and health.

At the same time, the theory of managing fear of death that have been put forward by Greenberg, Pyszczynski, & Solomon (1986) assumes the presence and maintenance of fear of death in society

through its ignoring and denial, which determines individuals' awareness of the value of life and makes death an instrument for regulating social life. Thus, avoiding thoughts about death is an acceptable type of attitude towards death for healthy individuals. Current studies address this idea (Kornev & Smirnov, 2018; Andrievskaya, 2017).

The psychoanalytic approach asserts that healthy individuals may have fear of death, which, however, can underlie most neuroses and neurotic states.

Frankl (1990), Aries (1992), Feifel (2001), Fromm (2006) and other researchers argue that modern society denies death, while the awareness of death is the strongest stimulus for life. Thus, suppressing thoughts about death, individuals deprive themselves of "the catalyst, without which joy and enthusiasm lose intensity and depth" (Fromm, 2006, p. 250).

Thus, the question arises: what type of attitude towards death is more 'healthy' and corresponds to a more mature state of personality, a higher level of comprehension and awareness? This study examines characteristics of the attitude towards death in individuals for whom the issues of death and dying are not relevant in their current life situation.

In all these works fear is considered as a prevailing emotion towards death. Hence, another question arises: is fear of death and its acceptance associated with the level of life satisfaction, awareness, and meaningfulness?

Therefore, the hypothesis is formulated that fear of death is associated with the level of meaningfulness of life and life satisfaction.

This study *aims* (a) to identify the presence or absence of associations between fear of death and the level of meaningfulness of life and life satisfaction and (b) to determine the type of attitude towards death corresponding to a higher level of meaningfulness of life and life satisfaction.

Methods

In our study we used the following psychodiagnostic techniques: (a) the Life Satisfaction questionnaire, (b) the Meaning-in-Life Orientations test, MLO (Russian-language version of the Purpose-in-Life Test modified by D. A. Leont'ev), and (c) the Death Attitude Profile-Revised (a modified version by T. A. Gavrilova), as well as methods of mathematical statistics for data processing (descriptive statistics, Pearson's correlation coefficient, and Mann–Whitney test).

The study involved 148 individual participants aged 18–50 years (89 girls (61 %), 57 boys (39 %), mean age 25.9 years, standard deviation 6.8), citizens of the Russian Federation, residents of Rostov-on-Don and the Rostov region. Using the Mann–Whitney test we compared male and female respondents by the scales of the Death Attitude Profile-Revised. We found no significant differences, which indicated that there were no gender differences in attitudes towards death among respondents. We found no correlations with age and no significant differences between age groups. Therefore, we combined all the respondents into a single group.

Results

Using the Pearson correlation coefficient we identified significant direct and inverse associations (at 0.01 significance level) of the 'death fear' scale with the scales of 'vital involvement' ($R = -0.259$), 'worry about the future' ($R = -0.381$), 'general satisfaction with life' ($R = -0.330$), 'purpose' ($R = -0.272$), 'process' ($R = -0.224$), 'result' ($R = -0.234$), 'life internally determined' ($R = -0.372$), 'life externally determined' ($R = -0.280$), 'meaningfulness of life' ($R = -0.309$), 'death avoidance' ($R = 0.550$), 'neutral acceptance' ($R = -0.266$), 'approach acceptance' ($R = 0.469$), 'escape acceptance'

($R = 0.300$), and significant association (0.05 significance level) with the 'disillusionment with life' scale ($R = -0.211$). Compared to all other types of attitudes towards death presented in the Death Attitude Profile-Revised, fear of death showed the greatest number of associations with other scales in terms of strength and the level of significance.

Further, according to the results on the 'death fear' scale (the Death Attitude Profile-Revised) we divided the sample into three groups as follows: (a) group with a low level of fear of death ($n = 37$), (b) group with a high level of fear of death ($n = 32$), and (c) group with an average level of fear of death ($n = 79$).

These groups were compared in pairs using the Mann–Whitney test.

The groups with low and average levels of fear of death showed significant differences in the scales of 'worry about the future' (at 0.01 significance level), 'life internally determined' (at 0.05 significance level), 'death avoidance', 'neutral acceptance', and 'approach acceptance' (at 0.01 significance level).

The groups with average and high levels of fear of death showed significant differences in the scales of 'vital involvement', 'worry about the future', 'general satisfaction with life' (at 0.05 significance level), 'purpose', 'life internally determined', 'general meaningfulness', 'death avoidance', and 'approach acceptance' (at 0.01 significance level).

The groups with low and high levels of fear of death showed significant differences in the majority of scales – 'vital involvement' (at 0.01 significance level), 'disillusionment with life' (at 0.05 significance level), 'worry about the future', 'general satisfaction with life', 'purpose', 'process', 'result', 'life internally determined', 'life externally determined', 'meaningfulness of life', 'death avoidance', 'neutral acceptance', 'approach acceptance', 'escape acceptance' (at 0.01 significance level).

Scale	Value	High – low level	Average – low level	High – average level
Vital involvement	Mann–Whitney U test, asymptotic significance (2-tailed)	380.000 0.010	1357.000 0.532	881.000 0.012
Disillusionment with life	Mann–Whitney U test, asymptotic significance (2-tailed)	409.500 0.026	1181.500 0.093	1122.000 0.351
Tiredness of life	Mann–Whitney U test, asymptotic significance (2-tailed)	437.500 0.056	1330.000 0.423	1029.500 0.120

Table 1

Pairwise comparison of values in the groups with different levels of fear of death (Mann–Whitney U test)

<u>Scale</u>	<u>Value</u>	<u>High – low level</u>	<u>Average – low level</u>	<u>High – average level</u>
Worry about the future	Mann–Whitney U test, asymptotic significance (2-tailed)	281.500 0.000	1010.000 0.007	910.000 0.019
General satisfaction	Mann–Whitney U test, asymptotic significance (2-tailed)	316.500 0.001	1196.000 0.112	882.500 0.012
Purpose	Mann–Whitney U test, asymptotic significance (2-tailed)	327.500 0.001	1176.500 0.091	832.500 0.005
Process	Mann–Whitney U test, asymptotic significance (2-tailed)	377.000 0.010	1229.500 0.169	972.000 0.057
Result	Mann–Whitney U test, asymptotic significance (2-tailed)	357.000 0.005	1182.000 0.097	992.500 0.076
Life internally determined	Mann–Whitney U test, asymptotic significance (2-tailed)	253.500 0.000	1073.000 0.021	758.000 0.001

Table 1

Pairwise comparison of values in the groups with different levels of fear of death (Mann–Whitney U test)

<u>Scale</u>	<u>Value</u>	<u>High – low level</u>	<u>Average – low level</u>	<u>High – average level</u>
Life externally determined	Mann–Whitney U test, asymptotic significance (2-tailed)	321.500 0.001	1144.000 0.060	966.500 0.052
General meaningfulness	Mann–Whitney U test, asymptotic significance (2-tailed)	309.500 0.001	1184.500 0.101	858.500 0.008
Death avoidance	Mann–Whitney U test, asymptotic significance (2-tailed)	175.000 0.000	770.500 0.000	788.000 0.002
Neutral acceptance	Mann–Whitney U test, asymptotic significance (2-tailed)	296.500 0.000	863.000 0.000	1187.500 0.617
Approach acceptance	Mann–Whitney U test, asymptotic significance (2-tailed)	181.500 0.000	802.000 0.000	798.500 0.002
Escape acceptance	Mann–Whitney U test, asymptotic significance (2-tailed)	378.000 0.010	1029.000 0.010	1110.500 0.317

Note: significant differences between groups are shown in bold.

We compared mean values of the scales for each questionnaire and presented our findings in histograms (Fig. 1–3).

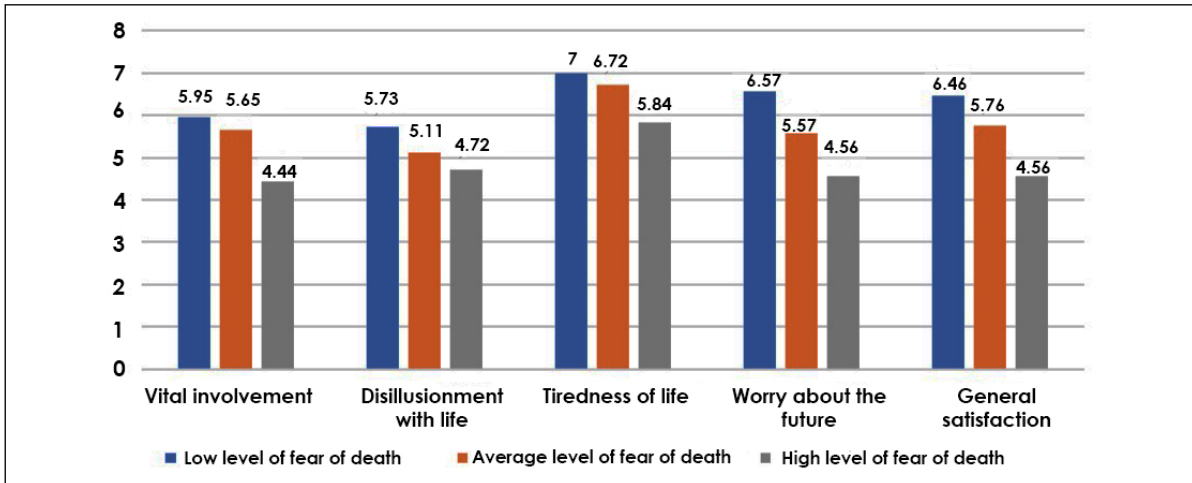


Figure 1. Histogram for the scales of the Life Satisfaction questionnaire

Note: significant differences were found for the following scales: 'vital involvement', 'general satisfaction' (groups with low and average levels of fear of death significantly differ from the group with a high level of fear of death, $p = 0.01$), 'disillusionment in life' (group with a low level of fear of death significantly differs from the group with a high level of fear of death, $p = 0.26$), 'worry about the future' (all the groups differ significantly from each other, $p = 0.01$); no significant differences were found for the 'tiredness of life' scale.

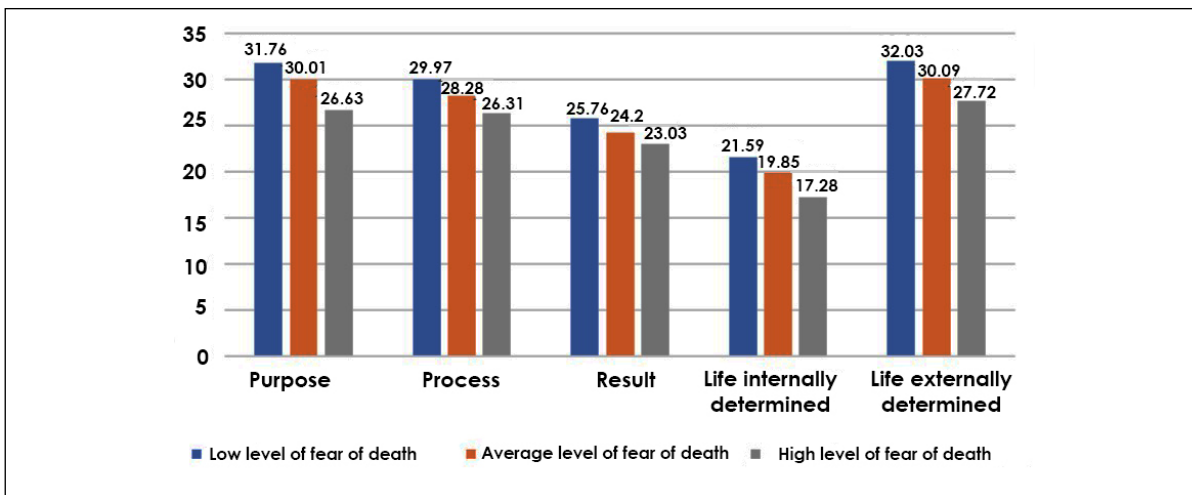


Figure 2. Histogram for the scales of the Meaning-in-Life Orientations test

Note: significant differences were found for the following scales: 'purpose' (groups with low and average levels of fear of death significantly differ from the group with a high level of fear of death, $p = 0.001$), 'process', 'result', 'life externally determined' (group with a low level of fear of death significantly differs from the group with a high level of fear of death, $p = 0.01$), and 'life internally determined' (all the groups differ significantly from each other, $p = 0.001$).

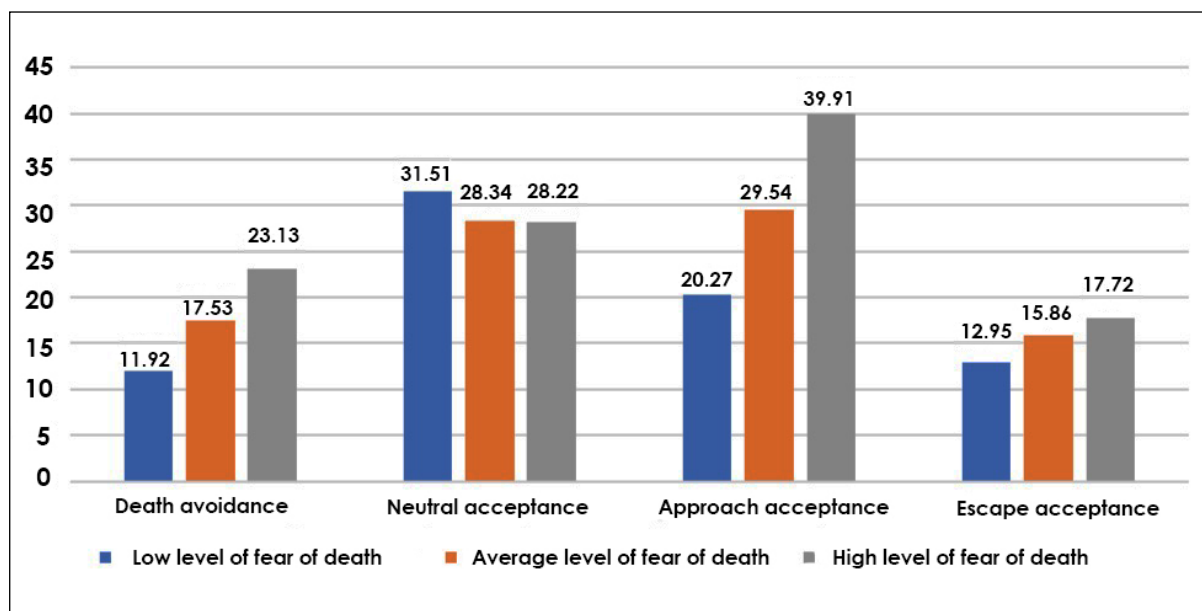


Figure 3. Histogram for the scales of the Death Attitude Profile-Revised

Note: significant differences were found for the following scales: 'neutral acceptance', 'escape acceptance' (groups with high and average levels of fear of death significantly differ from the group with a low level of fear of death, $p = 0.001$), 'death avoidance' ($p = 0.01$), 'approach acceptance' (all the groups differ significantly from each other, $p = 0.001$).

Our findings indicate that respondents with a high level of fear of death are characterized by the lowest level of vital involvement as a feeling of fullness of life, activity, and the presence of positive emotional states. In addition, respondents with a high level of fear of death are less disappointed with life and less anxious in response to the future as anxious expectations of unfavorable events. This may be explained by a low level of vital involvement and meaningfulness of life, which entails attitudes of approach and escape acceptance of death. According to the authors of the technique, escape acceptance of death is associated with a tendency towards suicidal and auto-aggressive behaviors.

A study by Hayes, Ward, & McGregor (2016) provided similar findings indicating the presence of associations among life dissatisfaction, decrease in orientations towards future, pessimistic attitudes towards life, and thanatic anxiety. Compared to respondents from other groups, those from the group with a high level of fear of death demonstrated significantly lower results for all the scales the Meaning-in-Life Orientations test. This indicates a general decrease in the meaningfulness of life in the subjective experience of its purpose, process, result, and abilities to control and manage life. In addition to fear, the leading type of attitudes towards death is its approach acceptance, which is characterized by P. T. P. Wong and colleagues as a belief in a pleasant 'life after death'; that is, death is perceived as a transition to another life (Wong, Reker, & Gesser, 1994). This confirms the idea of Feifel & Branscomb (1973) and Zhelatelev (2016) that belief in an afterlife contributes to neurotization and increases the level of fear of death as an event leading to suffering.

The results obtained in this study are of particular interest. Thus, according to the studies of Kornev & Smirnov (2018), and Andrievskaya (2017), belief in an afterlife is one of the most powerful

strategies of dealing with fear of death and corresponds to a neutral acceptance of death. Harding, Flannelly, Weaver, & Costa (2005) and Nazarzadeh, Sarokhani, & Sayehmiri (2015) argue that belief in the existence of God and afterlife negatively correlates with the level of fear of death. Figure 4 presents the 'approach acceptance' scale (Fig. 4).

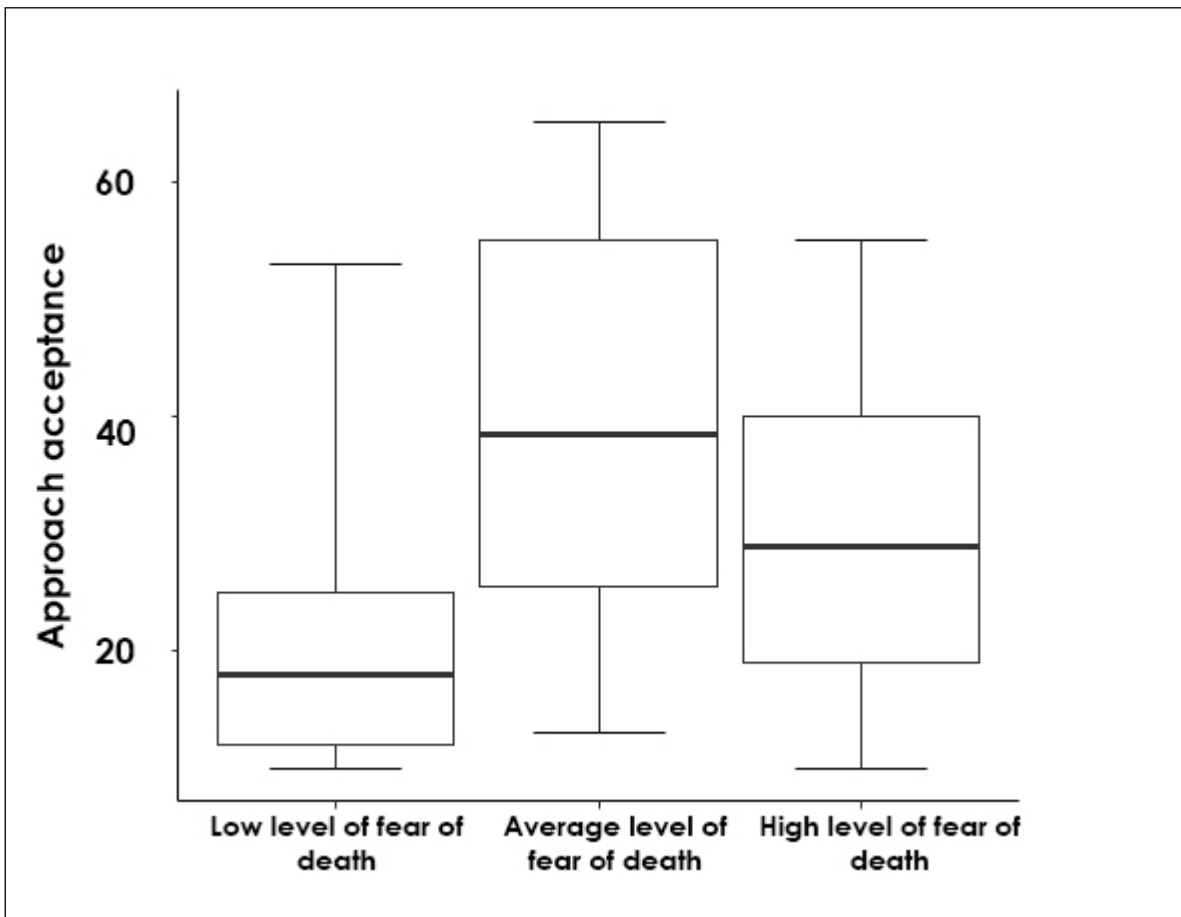


Figure 4. Diagram of the range of results for the 'approach acceptance' scale in groups with different levels of fear of death

Legend: ———— – median; □ – 25–75%; | – minimum and maximum values.

Our findings indicate that respondents with an average level of fear of death are the most similar to those with low levels of fear. We observed significant differences in lower indices for the scales of 'worry about the future' and 'life internally determined', as well as for all the scales characterizing attitudes towards death, where the values for the scales of 'death avoidance', 'approach acceptance' and 'death avoidance' increased and those for the 'neutral acceptance' scale – decreased.

Respondents with a low level of fear of death are characterized by significantly higher values of the level of vital involvement and meaningfulness of life. Table 2 shows the median, mean, and standard deviation for these and other scales.

Table 2

Descriptive statistics for the groups with different levels of fear of death

Scale	Low level of fear of death			Average level of fear of death			High level of fear of death		
	\bar{M}	σ	Me	\bar{M}	σ	Me	\bar{M}	σ	Me
Vital involvement	5.95	2.25	6	5.65	2.32	6	4.44	2.18	5
Disillusionment with life	5.73	1.74	6	5.11	2.12	5	4.72	2.30	4.5
Tiredness of life	7	2.38	8	6.72	2.37	8	5.84	2.55	5
Worry about the future	6.57	1.77	6	<u>5.57</u>	1.87	5	4.56	2.11	4.5
General satisfaction	6.46	1.98	7	5.76	2.20	6	4.56	2.30	4
Purpose	31.76	7.54	32	30.01	6.17	30	26.63	5.26	27
Process	29.97	6.75	31	28.28	6.22	29	26.31	5.24	25.5
Result	25.76	5.41	26	24.2	4.70	24	23.03	3.75	23
Life internally determined	21.59	4.00	22	<u>19.85</u>	3.84	20	17.28	3.41	17
Life externally determined	32.03	5.86	33	30.09	5.72	31	27.72	4.87	28
General meaningfulness	103.32	19.27	104	97.96	15.85	96	89.50	13.63	85
Death fear	13.49	2.78	14	25.87	4.41	27	38.78	4.14	38
Death avoidance	11.92	7.35	10	<u>17.53</u>	7.39	17	23.13	8.23	24.5

Table 2

Descriptive statistics for the groups with different levels of fear of death

Scale	Low level of fear of death			Average level of fear of death			High level of fear of death		
	\bar{M}	σ	Me	\bar{M}	σ	Me	\bar{M}	σ	Me
Neutral acceptance	31.51	3.88	32	<u>28.34</u>	4.94	29	<i>28.22</i>	4.20	29
Approach acceptance	20.27	10.38	18	<u>29.54</u>	12.14	29	<i>39.91</i>	16.17	38.5
Escape acceptance	12.95	7.48	10	<u>15.86</u>	5.83	16	<i>17.72</i>	8.15	17.5

Note: different font types indicate significant differences between the groups – bold font indicates significant differences with the group with a low level of fear of death; underlined font indicates significant differences with the group with an average level of fear of death; italic font indicates significant differences with the group with a high level of fear of death.

Discussion

The data obtained in our study indicate a statistically significant relationship between fear of death and meaningfulness of life and life satisfaction. A low level of fear of death corresponds to a greater vital involvement, purposefulness, satisfaction with the process and the result, and confidence in the ability to manage life events. In this case, neutral acceptance as individuals' acceptance of the finiteness of the human being represents the leading type of attitudes towards death.

On the contrary, a high level of fear of death is associated with less satisfaction with life, less involvement and meaningfulness, with a reduced level of anxiety towards the future, which can be interpreted as a lack of meaning and, accordingly, anxiety towards its realization. These findings are consistent with the results of a study by Bolt (1978), who found a negative correlation between thanatic anxiety and the pursuit of meaning in life. We find similar data in P. T. P. Wong's study, who argues that the presence of a subjective meaning in life reduces the level of fear of death (Wong, 2013). Besides fear, approach acceptance as a belief in life after death is the leading type of attitudes towards death in this group. This fact confirms the opinion of Feifel & Branscomb (1973) and Zhelatelev (2016) that belief in an afterlife contributes to neurotization, and, on the contrary, contradicts the position of Kornev & Smirnov (2018) that belief in life after death is one of the most powerful strategies of dealing with fear death. The findings of our study indicate that belief in an afterlife does not help overcome fear and does not contribute to life satisfaction and meaningfulness of life.

Thus, attitudes towards death are directly related to life satisfaction and meaningfulness of life. This fact can be of great practical importance in psycho-correctional work. Therefore, further studies of attitudes towards death are important.

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No conflict of interest

Students' Social and Psychological Adjustment to Studying at the Pedagogical University

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Abstract

Introduction. This paper presents the results of the ascertaining stage of the experimental study and aims to identify the level of first-year students' adjustment to studying at the pedagogical university and the characteristics of successful social-psychological adjustment among first-year students studying at the pedagogical university. The authors identified the components of social-psychological adjustment (success in educational activities, success in communication) and the criteria for assessing the level of adjustment in first-year students, including their awareness of the new role of a student, a future teacher (manifests itself through educational performance) and interaction with fellow students and teachers (manifests itself through a student's individual behavioral style, the ability to express his/her opinion and take into account the opinions of others; the ability to support views and interests of his/her fellow students).

Theoretical Basis. The article presents a retrospective view of the phenomenon of adjustment, a comparative analysis of theoretical views on understanding the essence of the concept of 'adjustment'. This study is the first to clarify the concept of social and psychological adjustment among students of the pedagogical university, taking into account the process of communication of first-year students with their teachers and fellow students and the presence of a future teacher's individual behavioral style.

Results. The findings indicate the presence of high and average levels of adjustment to studying at the pedagogical university among first-year students, which enabled authors to formulate recommendations for organizing educational activities with first-year students at the pedagogical university to more rapidly coordinate their behavior in accordance with the requirements of the university.

Discussion. First-year students showed a high level of adjustment to the educational group and an average level of adjustment to educational activities. Consequently, in order to overcome difficulties in mastering certain academic disciplines, the educational environment should be favorable for self-evaluation of educational performance, asking questions for introspection, and developing the ability to self-organize individual activities.

Conclusion. The findings of this study are of direct practical relevance in the work of teachers with first-year students and may help choose the most effective forms of work, including interactive ones, contributing to successful adjustment to educational activities.

Keywords

adjustment, adjustment level, professional self-determination, independence, interactive methods, self-organization, first-year students, adjustment period, personality traits, professional requirements

Highlights

- ▶ The teachers working at the pedagogical university with first-year students should understand the essence of the adjustment process, the need to create conditions for the successful manifestation of their potential and personality traits for self-organization during the adjustment period.
- ▶ To successfully overcome difficulties in mastering academic disciplines among first-year students of the pedagogical university, teachers should develop students' independence and self-organization through interactive forms of education.
- ▶ Considering the period of study at the pedagogical university as a stage of professional self-determination, it is necessary to use the adjustment period to build up first-year students' professional development trajectory, taking into account the correlation between personality traits and professional requirements.

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Introduction

Individual life stage – from birth to death – goes hand in hand with a continuous process of adjustment (Roslyakov, 2003). Individual adjustment is a rather difficult process in the society of constant changes; a person does not always keep up with rapidly changing events (Nalchadzhyan, 2008). The modern world requires for individuals who are able to realize and understand their values, to use their inner potential most effectively (Koeslag-Kreunen, Van der Klink, Van den Bossche, & Gijsselaers, 2018). This largely depends both on individuals and their ability to quickly respond to changing conditions, and on external conditions, for example, the environment of the pedagogical university, the characteristic of which is that it is important for teachers to understand the mechanisms of building the learning process aimed at developing students' professional competencies (Cabello, Sorrel, Fernández-Pinto, Extremera, & Fernández-Berrocal, 2016).

According to Bredun et al., the effectiveness of modern students' education is determined by the degree of the development of metasubject competencies, the level of readiness and ability to self-organize individual activities (Bredun, Balanev, Vaulina, Krasnoryadtseva, & Shcheglova, 2020). Lazarev (2011) considers the conceptual model of the formation of professional skills, built on the basis of the principles of the activity approach, as an effective mechanism for effective learning at a university. However, the effectiveness of the educational process among first-year students studying at the pedagogical university is primarily influenced by their successful adjustment (Spaustinaitis, 2015). Therefore, the need for scientific understanding of the issue of social and psychological

adjustment of students to studying at the pedagogical university is obvious. By examining the criteria of social and psychological adjustment among first-year students studying at the pedagogical university, we need to clarify when the process of their adjustment may be considered successful. When considering this issue, we should bear in mind that the process of education at a university is understood by many scientists as a stage in the professional self-determination of future teachers (Pryazhnikova & Pryazhnikov, 2013).

Distinguishing adjustment and adjustment efficiency, Tolstykh (2011) refers adjustment criteria to the process and the criteria of adjustment efficiency to the result of this process. The researcher proves associations and interdependence between the level of first-year students' adjustment to studying at university and the efficiency of the system of adjustment measures. Moreover, the author suggests criteria for assessing the efficiency of the system of adjustment measures, including satisfaction with university education, education performance, activity in the educational and social life of university, and self-satisfaction.

We share the opinion of Pryazhnikova & Pryazhnikov (2013) and consider the process of studying at a university as a stage of professional self-determination, which is characterized by the following: students' awareness of their new social role, awareness of the meaning of their future profession, correlation of their desires with opportunities, and awareness of the need for professional development. Therefore, during the adjustment period, teachers should create conditions that would contribute to the full manifestation of these qualities in students. When studying adjustment of first-year students, Verchenko & Grineva (2015) identified the following criteria: the level of entry into a new environment, behavior in an educational institution, knowledge about profession, and value orientations.

Keeping in mind our understanding of the content of the concept of social and psychological adjustment of first-year students in the pedagogical university and considering the process of education at a university as a stage of professional self-determination, let us distinguish the criteria and indicators for social and psychological adjustment among first-year students (Table 1).

<u>Adjustment components</u>	<u>Criteria</u>	<u>Indicators</u>
Success in educational activities	Students' awareness of their new role as a student and a future teacher	Educational performance based on students' understanding that university education is a new stage in life and their search for new meanings in pedagogical work
Success in communication	Interaction with fellow students and teachers	Individual behavioral style based on confidence in a professional choice; the ability to express individual opinion, take into account opinions of others; the ability to support the views and interests of fellow students

Theoretical Basis

Currently, the issues of personal adjustment are urgent, especially concerning youth at the first stage of vocational training (Artunduaga, Munoz, & Rojas, 2018). In their previous works K. Rogers, R. Diamond, A. Bandura, G. Hartmann, A. Bass, L. Berkovitz, G. Eysenck, K. Levy, K. Lorenz, Z. Freud and other scholars considered adjustment issues. Various aspects of social and psychological adjustment are considered in the works of Russian psychologists, including A. G. Maklakov, S. V. Chermyanin, V. V. Grishchenko, N. E. Shustova, T. V. Barlas, A. G. Ambrumova, & A. G. Asmolov. When considering social and psychological adjustment, we rely on a number of concepts of personal adjustment. From the humanistic perspective, adjustment issues are analyzed in the context of the ideal human interaction with the environment (Beneyto-Seoane & Collet-Sabé, 2018). In the works of J. Allport, A. Maslow, K. Rogers, V. Frankl, the goal of adjustment is to achieve positive spiritual health and harmonize the values of individuals and society. Humanistic psychology presents the dispositions of the ideal personality-environment interaction in dynamics (Kim & Klassen, 2018).

Referring to the concept of interactive adjustment developed by L. Phillips, Osnitskii (2004) emphasizes that types of adjustment that meet minimum requirements and social expectations can be generated by environmental and intrapsychic factors.

Examining the behavior of individuals during the adjustment period, Hartmann (2010) puts forward the idea about relations of adjustment between an individual and the environment, which includes processes associated with the conflict-free sphere and conflict situations.

Adjustment efficiency can be represented by various criteria. Among the variety of criteria presented in the psychological literature, we are impressed by ideas of K. Mechnkov and O. F. Gefele, who distinguished the following criteria for effective social and psychological adjustment: commensurability, timeliness, conformity (Mechnkov, 1993) and moral orientation, the principle of interpersonal contacts, and neuro-psychic stability (Gefele, 2003).

Human activity is, in fact, transforming. Therefore, Markaryan (1971) considers the whole society is both an adaptive (similar to biological society) and an adaptive-adjusting system. Sharing the ideas of the American researcher W. Buckley, E. Markaryan believes that in the process of its development society as an adaptive-adjusting system acquires the ability to make significant structural and functional changes in order to preserve itself. The concept of adjustment is the key for understanding the laws of self-organization of all living systems and determining the criteria for evaluating the concepts of self-organization.

The level of adjustment is the result of the process of adjustment. Some authors distinguish these concepts. However, the others consider them synonymous. For example, considering the urgent issue of adjustment of students to new conditions, Sereva & Andonova (2016) distinguish two components of adjustment – social-psychological and vocational-educational.

Studying the characteristics of the process of adjustment among first-year students studying at the pedagogical university, Ermachenko, Zaitseva, & Sereda (2017) point to the necessity of considering numerous factors affecting the degree of adjustment, including individual psychological characteristics of students, personal, professional and behavioral qualities, value orientations, academic performance, health status, social environment, etc. The authors argue that when determining the levels of adjustment of first-year students studying at the pedagogical university, it is important to take into account the adjustment of students to the new education system and to a change in the educational regime.

Adaptive abilities of individuals largely depend on their psychological characteristics, which determine the ability to adequately regulate the functional states of the body in various conditions of life. The high level of adjustment level is associated with high likelihood of normal functioning of the body and the efficiency of activity with an increase in the intensity of the impact of psychogenic environmental factors (Sveshnikova, 2019). According to Lyz & Shostak (2016), the efficiency of the adjustment process directly depends on studying conditions in a particular university.

Social and psychological adjustment to studying in higher education is determined by psychological characteristics of adolescence (Maltese, Simpson, & Anderson, 2018). At this age, it is important to form the ideal of the future profession and understand its nature (Cabello et al., 2016).

Unfortunately, we often observe a loss of trust in others, a lack of interpersonal support, and uncertainty about the future among young people (Fan, 2016). In this regard, the process of social and psychological adjustment to the university environment is accompanied by the following psychological difficulties: adjustment to the university education system – independent organization of study, learning more information, acquisition of new values, adoption of norms, and the lack of attention (Vlasova, 2009).

The definition of an individual's view of the world contains his/her social orientation, organization of life plans, formation of value orientations and individual intellectual research (Semmler, Uchinokura, & Pietzner, 2018). Therefore, we consider students' professional self-determination as a process that aims to manifest their individuality, develop the ability for self-education and the ability to make individual choices, and form their personal and professional qualities.

While developing personality traits, students strive for an independent life (With, 2017). They consider themselves adults and full members of society, participate in almost all types of social activities and fulfill many social roles, which initiates the process of adjustment to the pedagogical sphere, adoption of ethical norms, professional activities, professional communication, and awareness of the importance of the future profession and their participation in it (Ranga & Etzkowitz, 2015).

We consider students' social and psychological adjustment to studying at the pedagogical university as a process of internal changes in future teachers, which outcomes manifest themselves in effective communication with teachers and fellow students on the basis of their individual behavioral style. First-year students' social and psychological adjustment to studying at the pedagogical university is associated with the success of professional self-determination, their awareness of meaning in chosen professional activities, and their needs for further professional development.

Keeping in mind our understanding of the essence of students' social and psychological adjustment to studying at the pedagogical university, we examined its types, including students' adjustment to the conditions of educational activities, their educational groups, and their future profession (Taylor, 2017).

Results

To determine characteristics of social and psychological adjustment among first-year students studying at the pedagogical university, we carried out an ascertaining stage of the experimental study. The results of our diagnostic study are presented by the Students' Adjustment to University methodological toolkit (Dubovitskaya & Krylova, 2010).

This diagnostic technique is designed to identify students' level of adjustment to the university environment using two scales – (a) the level of adjustment to the educational group and (b) the level of adjustment to educational activities.

The empirical sample involved 104 first-year students of Surgut State Pedagogical University, Psychology and Pedagogy Faculty, which is 87 % of the total number of all first-year students at the faculty. We made the conclusions about the presence of reliable characteristics of social and psychological adjustment among first-year students studying at the pedagogical university on the basis of the percentage and quantitative correlations in the scales of the technique. Figures 1–4 show the results of our diagnostics.

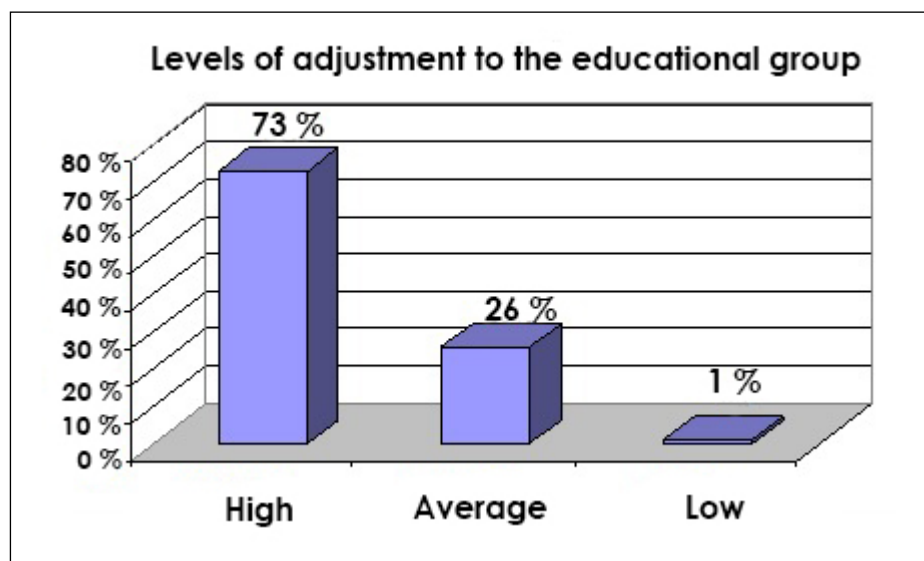


Figure 1. Distribution of the levels of adjustment to the educational group in the study sample

Our findings indicate that the majority of the faculty students (73 %, $n = 76$) showed a high level of adjustment to interaction in the educational group. Students feel comfortable, can easily seek help from fellow students, actively express their opinions, which enables them to take the initiative in the group. Students of Psychology and Pedagogy Faculty are able to support the views and interests of their fellow students.

The average level of adjustment was observed among 27 individual participants (26 %) of the study group. The characteristics of adjustment include a relatively comfortable feeling. In addition, students tend to show restraint in relationships and find it difficult to make decisions in certain situations.

Only one individual participant (1 %) had a low level of adjustment to the educational group. This student is restrained in communication, cautious, does not share the rules adopted by the group. Accordingly, his fellow students do not share his views; he finds it difficult to seek help from them. Working with such a student requires more attention from the psychological service, the curator, the student group, and teachers. The teacher should pay attention to the content of the situation in which such a student found himself in the university. The reasons may be as follows: (a) an insufficient level of knowledge and skills necessary for mastering academic disciplines and professional competencies and (b) an insufficient level of the development of skills of independent work, self-organization, inability to plan individual actions. This leads to the student's misunderstanding of

the meaning of educational activities necessary for mastering a future profession, emotional stress, insufficiently serious attitude to the performance of educational tasks, divergence in the views and interests with his fellow students, and disappointment in the professional choice. Such a student requires assistance which can be provided from the psychological service, fellow students, when performing tasks in groups in training sessions, from the curator of the educational group, who may include the necessary information on the time management of his own activities in the subject of curatorial hours, and from the teacher, who should be given clearer instructions when organizing students' independent work.

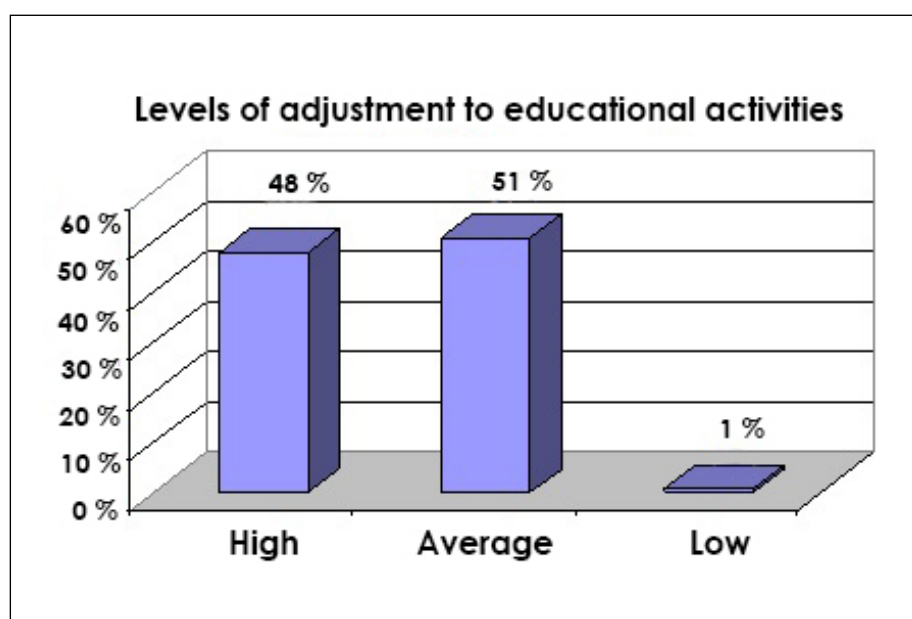


Figure 2. Distribution of the levels of adjustment to educational activities in the study sample

One of the most important conditions for students' successful social and psychological adjustment to studying at the pedagogical university is their satisfaction with the organization of the educational process, which makes it possible to fully acquire pedagogical knowledge.

For the scale of adjustment to educational activities we observed high diagnostic results among 50 individual participants (48%). Our findings indicate that these students can easily master academic subjects, complete tasks in academic disciplines on time and successfully, find it easy to seek help from the teacher, can freely express their thoughts and show their abilities.

The average level of adjustment to educational activities was observed among 53 students (51%). This is manifested in the fact that they find it difficult to master certain academic disciplines; they cannot express their thoughts and find it difficult to answer in the classroom.

A low-level adjustment to educational activities was characteristic of 1 student (1%), which indicates his difficulties in interacting with teachers and mastering academic disciplines. As a result, the student feels himself uncomfortable during classes and needs additional consultations. It is necessary to plan individual work with such a student, since he cannot show his abilities in the classroom.

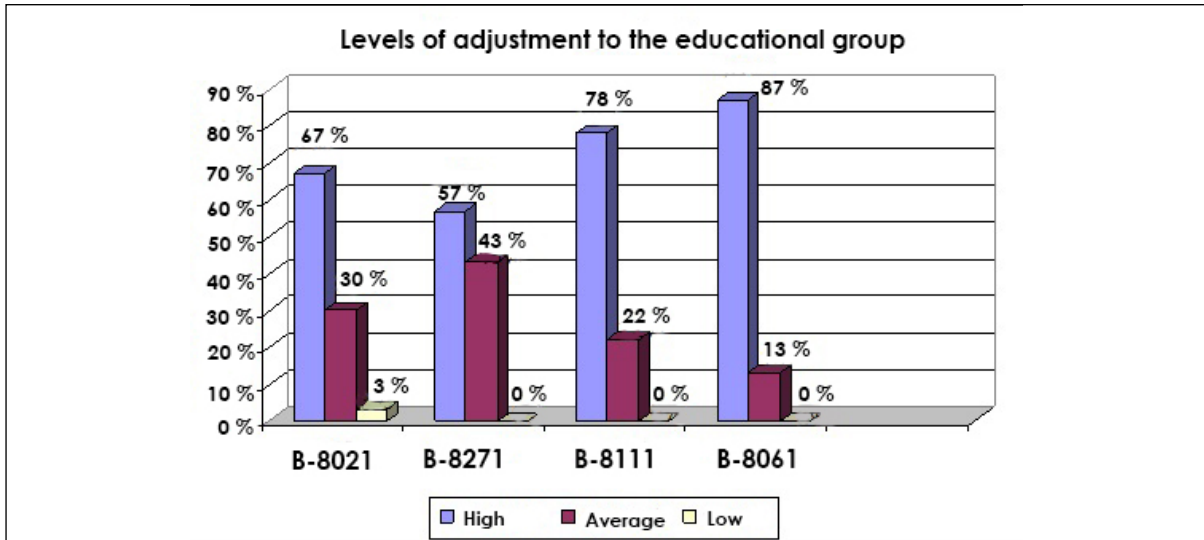


Figure 3. Distribution of the levels of adjustment to the educational group in different groups

The highest level of adjustment to the educational group was observed among students of group B-8061 (educational direction of Preschool Education). Group B-8271 (educational direction of Psychological and Pedagogical Education) showed the lowest scores by the high level of adjustment to the educational group and the highest scores by the average level of adjustment to the educational group.

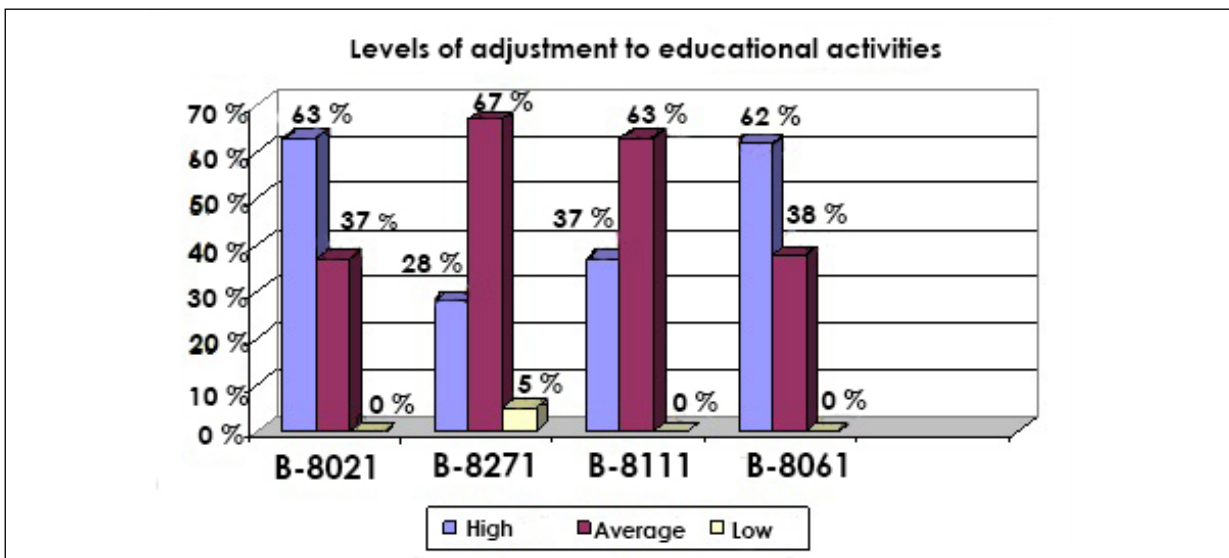


Figure 4. Distribution of the levels of adjustment to educational activities in different groups

Students of groups B-8021 (educational direction of Primary Education) and B-8061 (educational direction of Preschool Education) demonstrated the highest levels of adjustment to educational activities. The lowest levels of adjustment to educational activities were observed among the students of group B-8271.

Thus, our findings indicate that the first-year students of the Faculty of Psychology and Pedagogy showed generally high and average levels of adjustment to the educational group and educational activities. These students are active during classes, ask questions, and actively engage in classroom dialogue. This result is explained by the fact that the educational group is a group of individuals having common professional interests. Therefore, they are interested in academic disciplines, easily interact with each other, and try to present themselves in a professional field. The diagnostic indices for adjustment to the educational group are generally higher in comparison with those for the adjustment to learning activities. However, there are students with a low level of adjustment. For these students additional work is required to activate internal resources and increase the level of adjustment, which should be organized, first of all, by the curator of the educational group in order to involve students in active interaction with fellow students through curatorial hours, controlling their educational activities.

Discussion

The use of diagnostic techniques during our experimental work enabled us to confirm the characteristics of the process of students' social and psychological adjustment to studying at the pedagogical university, associated with adjustment to educational activities and the educational group. Therefore, students' adjustment to studying at the pedagogical university manifests itself in their ability to construct their individual behavioral style. Students are confident in their professional choice and actively search for meaning in chosen professional activities. We should note individuals search for meanings in work throughout their lives. However, a psychological support should be organized with first-year students during the adjustment period, which may help them understand the meaning of professional self-determination.

1. Students' adjustment to studying at the pedagogical university is the result of social and psychological adjustment, which manifests itself through a positive attitude towards profession and self-organization.

2. High and average levels of students' social and psychological adjustment to studying at the pedagogical university are most important for their self-organization.

3. With students' successful social and psychological adjustment to studying at the pedagogical university, teachers should use interactive forms of interaction in the educational process, which enables students to search for their individual meanings in chosen professional activities, increases internal motivation to the pedagogical direction of training and independence in decision-making (Rotova, 2018).

4. Successful social and psychological adjustment is characterized by students' effective communication with teachers and fellow students based on their individual behavioral style. In our opinion, this indicates the degree of students' awareness of individual attitudes towards their professional choice. During the adjustment period, a teacher observes communication among first-year students, analyzes the likelihood of their self-realization in the chosen profession, and, consequently, the nature of motives for future professional activity.

5. Successful social and psychological adjustment forms students' ability to self-organization and to overcome difficulties in educational activities.

Conclusion

Consequently, the process of professional self-determination of students in the pedagogical university depends on the success of the process of social and psychological adjustment. Social and psychological adjustment, which has its structure and logic of development and success factors, activates the potential of students' personality traits and influences the organization of educational activities in the pedagogical university. We propose the following measures to increase the level of adjustment among students in the pedagogical university: (a) first-year students' involvement in the work of student associations; (b) involvement in volunteer activities; (c) coordinated work of the curators and the psychological service of the university; (d) conducting trainings by specialists of the psychological service to unite first-year students; (e) involvement of co-curators from among senior students; (f) conducting thematic curatorial hours on time management and effective communication; (g) use of interactive forms of education (Sedova, 2017); (h) first-year students involvement to active career-guidance work with high school students as a part of career-guidance activities, such as master classes during the Open Days, which will help overcome difficulties during the adjustment period.

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Readiness for Innovative Activities Among Students of Technical Universities

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Abstract

Introduction. Nowadays innovations determine the success of breakthrough transformations in the country. This article examines readiness for innovative activities among student youth studying at technical universities.

Methods. The study used the following techniques: (a) the techniques by Sh. Schwartz and R. Inglehart to measure individual values; (b) the questionnaires for assessing activity self-organization and styles of responding to changes; (c) the scales for self-assessing innovative personality traits, needs for autonomy, competence and relatedness, life satisfaction, and academic motivation; (d) 'openness' scale of the Big Five questionnaire; and (e) the index of personal readiness for activities. Factor analysis and regression analysis of diagnostic results were carried out. The sample comprised 160 students of Tomsk Technical Universities.

Results. The findings identified the most significant factors influencing the manifestation of students' innovative characteristics. These include, first of all, personality values, styles of responding to changes, and openness to experience. The study of values as a significant predictor of innovative activities showed the heterogeneity of the value system of students studying at technical universities. The simultaneous manifestation of traditional values, values of survival, and the values of openness to change, self-transcendence, and self-determination is characteristic of them. Regression analysis showed that the innovative style of responding to changes is not characteristic of students.

Discussion. This study represents the first attempt to measure the main psychological characteristics that affect the manifestation of innovativeness among students of technical universities, and also the parameters of their personal readiness for innovative activities. In the context of readiness for innovative activities personal characteristics of young people are contradictory. However, there are positive tendencies towards self-development and professional improvement. The findings speak in favour of the transitivity of social reality in society and indicate the need to create the educational environment focused on personal development and innovative competencies of students.

Keywords

innovativeness, innovation activities, personality development, openness to experience, values, motivation, university students, predictor, innovativeness index, personality

Highlights

- 'Openness to experience', 'index of personal readiness for activities', and 'innovativeness index' are the main indicators of students' readiness for innovative activities.
 - The value system of young people is inconsistent as a predictor of innovation activities.
 - Students of technical universities are not fully prepared to carry out innovative activities.
 - An innovative style of responding to changes is not predominant for students when assessing their personal readiness for innovative activities.
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Introduction

The near-future transition to an innovative development model is a key strategic goal of the country. The rapid pace of change, complex multidisciplinary challenges of our time focus the attention of researchers from various branches of knowledge on the issues of innovation.

For all the importance of the organizational, economic, technological components of transformations, issues related to the influence of the human factor and the socio-cultural foundations of society as a whole on the process of introducing innovations are no less significant (Lebedeva & Yasin, 2009). In this situation, social demands for higher education in terms of the quality of training specialists for professional activity in the context of the country's transition to an innovative path of development acquires special relevance. Psychological studies examining personal characteristics of young people in terms of their readiness for innovative activities are becoming fundamentally important.

In recent years, there were several studies of the specific characteristics of innovation activities and innovation behavior. They are based on the idea that readiness for activities is one of the integral characteristics of and individual as a subject of activity, a manifestation of individual personality traits that ensure the effectiveness of activity (Leont'ev, 2005; Derkach, 2004; Yuan & Woodman, 2017; Atamanova, Bogomaz, & Filippova, 2018; Buravleva, Prokhorenko, & Budakova, 2019; Perikova, Atamanova, & Bogomaz, 2020). Readiness for activities indicates, on the one hand, an individual's decision to act, and on the other, the presence of resources that ensure the implementation of such a decision (Tyklyuk, 2007; Scott & Bruce, 2017).

According to Krasnoryadtseva (2012), psychological readiness for innovation activities reflects the dynamic characteristics of the multidimensional human life world. Considering various aspects of innovation behavior, Klochko & Galazhinsky (2009) believe that it is carried out beyond the established attitudes and behavioral stereotypes, and its "significant psychological characteristic is the innovative potential of a person, which is understood as an integral systemic characteristic of a person, determining its ability, firstly, to generate new forms of behavior and activity... and, secondly, to provide a mode of self-development" (Klochko & Krasnoryadtseva, 2010, p. 154).

Ponukalin (2010) emphasizes that the psychology of innovative activities is focused on personality traits of an individual, the subject of innovative activity. The aims of training a professional as an innovative person follow from the basic structures of the model of an innovator's personality.

The study of psychological characteristics of student youth that are related to their readiness for innovative activities is necessary to expand approaches to predicting the success of transformations in the country. It may help to adequately answer many questions related to the challenges facing Russian society, to assess human capital in the innovative development of the country, and to examine socio-cultural dynamics of society. Personality traits of students of technical universities, who have to create high-tech equipment, work in the field of artificial intelligence, and carry out technical improvements are of particular interest.

Therefore, our study aims to examine readiness for innovative activities among students of technical universities and, consequently, to identify the most significant predictors of innovative activities and psychological characteristics of students in terms of their readiness for innovative activities.

Methods

The study used the following techniques:

1. Scale for Self-assessment of Innovative Personality Traits, SIPT, with the following indicators: 'creativity', 'risk taking disposition', 'orientation towards the future', 'index of innovativeness' (Lebedeva & Tatarko, 2009).
2. Styles of Responding to changes questionnaire with the following indicators: 'innovative style', 'conservative style', 'reactive style', and 'implementing style' (Bazarov & Sycheva, 2012; Kolantaevskaya, Grishina, & Bazarov, 2016).
3. Questionnaire for assessing self-organization of activities with the indicators of 'goal setting' and 'planning' (Mandrikova, 2010).
4. Life Satisfaction Scale (E. Diener; modified by D. A. Leontyev & E. N. Osin) with the indicator of 'life satisfaction' (Diener, Emmons, Larsen, & Griffin, 1985; Osin & Leontiev, 2020).
5. The Index of Personal Readiness for Activities, which is the arithmetic mean of the normative indicators of 'goal setting', 'planning', 'reflection' and 'life satisfaction' (Bogomaz, 2014).
6. The 'openness' scale of the Big Five questionnaire (Big Five Questionnaire, BFQ – G. V. Caprara, C. Barbaranelli, L. Borgogni, M. Perugini) with the indicators of 'openness to knowledge (culture)', 'openness to experience', 'openness index' (Caprara, Barbaranelli, Borgogni, & Perugini, 1993; Osin, Rasskazova, Neyaskina, Dorfman, & Aleksandrova, 2015).
7. The scale for assessing the Needs for Autonomy, Competence, and Relatedness (K. M. Sheldon, J. C. Hilpert, tested by D. A. Leont'ev) with the 'self-determination index' as the arithmetic mean of these three indicators (Sheldon & Hilpert, 2012).
8. The Academic Motivation Scale (AMS) by Vallerand, modified by T. O. Gordeeva, O. A. Sychev, & E. N. Osin, with the following indicators: 'motivation for learning', 'achievement motivation', 'self-development motivation', 'self-respect motivation', 'introjected motivation', 'external motivation', 'amotivation', 'motivation index' (Gordeeva, 2016).
9. Inglehart World Values Survey (modified by R. K. Khabibulin) with the indicators of 'traditional/rational – secular values (values of modernism)' (T/S-RV) and 'survival/self-expression values' (S/S-EV) (Khabibulin, 2015).
10. Portrait Values Questionnaire-Revised – PVQ-R (Schwartz et al., 2012, modified by K. V. Sugonyaev)

with meta-values of ‘openness’, ‘self-affirmation’, ‘maintaining’ and ‘self-determination’ (Schwartz et al., 2012; Karandashev, 2004; Schwartz et al., 2017; Sugonyaev, 2018).

Thus, in our study, we used 10 techniques to measure 26 indicators and indices.

For statistical processing of the data obtained in our study, we carried out factor and regression analysis (principal component analysis) using the Statistica and SPSS software packages.

Our empirical study involved students of the School of Non-Destructive Testing & Security, National Research Tomsk Polytechnic University and the Department of Control Systems, Tomsk State University of Control Systems and Radioelectronics (mean age = 19.0 ± 0.7 years; N = 160, girls – 32 %, boys – 68 %).

Results

In accordance with the objectives of our study, the results were subjected to factor analysis. The criteria for the analysis quality were the percentage of variance of the original correlation matrix, the number of variables, the Cattell scree test, and the number of respondents. As a result, we identified a factor structure that included 160 observations using the principal component method with Varimax rotation; the number of variables is 14; the number of factors is 5, explaining 64.5 % of the variance of the original correlation matrix. A factor loading of more than 0.40 was used as a significance criterion. Table 1 shows the results.

Table 1
 Factor analysis

<u>Indicators and indices</u>	<u>Factor 1</u>	<u>Factor 2</u>	<u>Factor 3</u>	<u>Factor 4</u>	<u>Factor 5</u>
Innovative style	0.944	0.042	0.157	0.014	0.015
Conservative style	-0.944	-0.042	-0.157	-0.014	-0.015
Innovativeness index	0.482	0.306	0.439	0.267	0.150
Index of openness	0.433	0.443	0.244	0.394	-0.101
Self-determination	-0.071	0.839	0.124	0.128	-0.205
Openness to change	0.354	0.771	0.257	0.066	0.075
Self-affirmation	0.199	0.609	-0.099	0.155	0.503

Indicators and indices	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Maintaining	-0.398	0.575	-0.082	0.455	0.039
Reactive style	-0.177	-0.087	-0.960	-0.070	0.055
Implementing style	0.177	0.087	0.960	0.070	-0.055
Traditional values	-0.103	-0.007	-0.002	0.769	0.257
Motivation index	0.182	0.138	0.020	0.747	-0.091
Index of personal readiness for activities	0.058	0.319	0.327	0.691	-0.046
Survival values	-0.011	-0.078	-0.036	0.030	0.917

The most significant factor combined *the innovative style of responding to changes* (0.944; hereinafter, factor loading is indicated in parentheses), *the index of innovativeness* (0.482), *the index of openness* (0.433), as well as *the conservative style of responding to changes* (-0.944). The leading factors of personal readiness for innovation activities are *the innovative style of responding to changes*, *the index of innovativeness*, *the index of openness*; *the conservative style of responding to changes* has a negative value.

Factor 2 combined the meta-values assessed by the Schwartz technique (modified by K. Sugonyaev): *self-determination* (0.839), *openness to change* (0.771), *self-affirmation* (0.609), *maintaining* (0.575), and *the openness index* (0.443). *Values* and *the index of openness* are significant factors in the context of students' personal readiness for innovative activities. At the same time, the values of self-determination and openness to change are of paramount importance.

For factor 3, the most significant were *the realizing style of responding to changes* (0.960), *the index of innovativeness* (0.439), and *the reactive style of responding to changes* (-0.960).

Factor 4 combined *traditional values* (0.769), *motivation* (0.747), *the index of personal readiness for activities* (0.691), and *the values of maintaining* (0.455).

For factor 5, the most significant were *the value of survival* (0.917) and *the value of self-affirmation* (0.503).

Thus, the factor analysis and factor structure showed that are *the innovative style of responding to changes*, *the index of openness*, and *the personality values* of self-determination, openness to change, self-affirmation, and maintaining are the most significant in describing innovative activities among university youth studying in technical specialties.

In addition to examining the factor structure, we carried out a regression analysis to determine the degree of determinacy of the dependent variable from predictors and the contribution of each independent variable to the variation of the dependent one. Therefore, we used direct stepwise regression analyze with inclusion. The regression analysis indicated that the leading parameters are 'openness to experience' (adjusted $R^2 = 0.567$), 'index of personal readiness for activities' (adjusted $R^2 = 0.489$) and 'index of innovativeness' (adjusted $R^2 = 0.380$). These are parameters that we considered sequentially as dependent variables.

In regression analysis, when considering the 'openness to experience' dependent variable, we observed 4 significant predictors: 'openness to change', 'index of personal readiness for activities (PRA)', 'index of personal innovativeness', 'conservative style of responding to changes'. Table 2 presents the final regression model with 4 predictors.

Indicators and indices	Beta	Std. error	B	Std. error	t (155)	p
Intercept			6.193	3.206	1.932	0.055
Openness to change	0.409	0.063	3.713	0.571	6.503	0.000
Index of personal readiness for activities, PRA	0.241	0.062	2.130	0.544	3.917	0.000
Index of personal innovativeness	0.174	0.069	1.560	0.623	2.502	0.013
Conservative style of responding to changes	-0.189	0.061	-0.255	0.082	-3.104	0.002

Note: dependent variable – openness to change.

The regression model turned out to be significant ($F(4, 155) = 53.0$; $p < 0.000000$), explaining 56.7 % of the variance (adjusted R^2). In this case, 'openness to experience' has an average value of the variance. The regression analysis showed that 56.7 % of the variance of the 'openness to experience' dependent variable is explained by significant predictors of the meta-value of 'openness to change' (has the highest coefficient $\beta = 0.409$), 'index of personal readiness for activities' ($\beta = 0.241$), 'index of personal innovativeness' ($\beta = 0.174$), 'conservative style of responding to changes' with a negative value ($\beta = -0.189$).

Further, we analyzed the regression model, where the 'index of personal readiness for activities' was used as the dependent variable. Table 3 presents the final regression model with 7 predictors.

Table 3
 Regression analysis

<u>Indicators and indices</u>	<u>Beta</u>	<u>Std. error</u>	<u>B</u>	<u>Std. error</u>	<u>t (152)</u>	<u>p</u>
Intercept			0.506	0.357	1.418	0.158
Index of innovativeness	0.315	0.073	0.321	0.075	4.293	0.000
Traditional values	0.286	0.064	0.189	0.042	4.488	0.000
Openness to experience	0.277	0.075	0.031	0.009	3.684	0.000
Motivation index	0.146	0.065	0.030	0.013	2.243	0.026
Maintaining	0.117	0.068	0.130	0.076	1.724	0.087
Innovative style of responding to changes	-0.140	0.072	-0.021	0.011	-1.960	0.052
Survival values	-0.131	0.058	-0.099	0.044	-2.263	0.025

Note: dependent variable – index of personal readiness for activities.

The regression model turned out to be significant ($F(7, 152) = 44.7; p < 0.00000$). The regression analysis showed that 48.9% of the variance of the 'index of personal readiness for activities' is explained by the following predictors: 'index of innovativeness' ($\beta = 0.315$), 'traditional values' ($\beta = 0.286$), 'openness to experience' ($\beta = 0.277$), 'motivation index' ($\beta = 0.146$), and 'maintaining' ($\beta = 0.117$). *Personal readiness for activities* is negatively affected by individual adherence to the values of 'survival' ($\beta = -0.131$) and 'innovative style of responding to changes' ($\beta = -0.140$).

Further, we analyzed the regression model, where we used the 'index of innovativeness' as the dependent variable. Table 4 presents the final regression model.

Table 4
 Regression analysis

<u>Indicators and indices</u>	<u>Beta</u>	<u>Std. error</u>	<u>B</u>	<u>Std. error</u>	<u>t (157)</u>	<u>p</u>
Intercept			1.277	0.215	5.929	0.000
Openness to experience	0.462	0.070	0.051	0.008	6.635	0.000
Implementing style of responding to changes	0.260	0.070	0.037	0.010	3.741	0.000

Note: dependent variable – *innovativeness index*.

The regression model turned out to be significant ($F(2, 157) = 49.7; p < 0.00000$). When conducting regression analysis, we considered the 'innovativeness index' as a dependent variable. The regression analysis showed that 38.0% of the variance was explained by the following predictors: 'openness to experience' ($\beta = 0.462$), 'implementing style of responding to changes' ($\beta = 0.260$). Thus, *the index of innovativeness* is determined by the severity of such characteristics as 'openness to experience' and 'implementing style of responding to changes'.

Discussion

When assessing the findings of our study, we considered it important to identify the maximum number of indicators of the variability in the analyzed series. At the same time, they were organized according to 5 factors. Factor analysis identified the following significant factors of the readiness for innovative activities among students of technical specialties: *styles of responding to changes, the index of openness, personality values, indices of innovativeness, personal readiness for activities, and motivation*.

The regression analysis helped identify the main indicators of students' readiness for innovative activities, including 'openness to experience', 'index of personal readiness for activities', and 'index of innovativeness'.

The fact that openness to experience is the most significant component in the regression analysis may be explained by the characteristics of this parameter. They indicate a person's ability to perceive new ideas, feel comfortable in an unfamiliar environment, a preference for diversity and intellectual curiosity, the broad range of interests, the ability to make decisions in situations of uncertainty.

The regression analysis showed that 'openness to experience' is largely determined by the value of 'openness to change', 'the index of personal readiness for activities', 'the index of personal innovativeness', that is, the desire for transformation, novelty, independence of thought and choice of modes of action, creativity, research activity, the need for independence and self-government. These are parameters that determine the sensitivity to problem situations, search, problem formulation,

generation of hypotheses, and finding of solutions. At the same time, *the conservative style of responding to changes* interferes with the manifestation of *openness*.

The regression model with the dependent variable of the 'index of innovativeness' showed significant predictors of 'openness to experience' and 'implementing style of responding to changes'. Moreover, compared to *openness to knowledge*, *openness to experience* is more significant. In our opinion, this indicates students' need to gain experience in solving professional problems, to develop professional competencies. Openness to experience is important in the process of professional and personal development. In the context of our research, this gives grounds for a positive outlook on the ability of young people to perceive new ideas, personal development, and becoming a specialist.

In the regression analysis of the index of innovativeness as a dependent variable, the importance of *the implementing style of responding to changes* can be explained by such its characteristics as quick transition from plans to actions, 'step-by-step' implementation of plans, bringing the project to completion, focus on results, willingness to change the situation in order to reach the result.

When analyzing the regression model with the 'index of personal readiness for activities' as a dependent variable we found that it depends on the following parameters: 'index of innovativeness', 'traditional values', 'openness to experience', 'index of motivation', and 'maintaining'. The individual's adherence to the values of survival negatively affects the manifestation of personal readiness for activities.

We should note that *the index of personal readiness for activities* has a negative relationship with *the innovative style of responding to changes*. This may be explained by the fact that the constituents of the parameter of 'index of innovativeness' include the respondents' self-assessment of such characteristics as 'creativity', 'risk for the sake of success', 'orientation towards the future'. There is a positive relationship between the 'index of personal readiness for activities' and the 'index of innovativeness'. At the same time, at the level of students' style of responding to changes, the innovative style of responding to changes is not characteristic of them. If we take into account that the style of responding to changes represents a habitual model of behavior characteristic of the subject, then we can argue that students do not prefer an innovative style of response in a situation of choice. Therefore, stability and preset rules are still more important for them in their activities. They find it difficult to be initiators of changes, to cope with the unknown and uncertainty. Regression analysis shows that the innovative style of responding to changes is not predominant for students in assessing their personal readiness for activities.

Our findings show the inconsistency in the parameters and multidirectional characteristics that determine the personal readiness for activities. Along with the index of innovativeness, openness to experience and motivation, traditional values and values of maintaining are significant, i. e., intolerance to dissent, the choice of standards and social conformism, and the acceptance of authoritarianism. The relationship of indicators in this regression indicates that the orientation towards traditional values and values of maintaining is combined with motivation, which largely determines the efficiency and quality of activities. Individuals with characteristics of traditional values and values of conservation, rarely experience the need for changes, react negatively to transformations; stability is above all for them. Innovative behavior is difficult for this category of individuals.

Having studied a significant number of personal characteristics of students of technical specialties regarding their readiness for innovative activities, we should conclude that they are contradictory, although there are positive trends.

Our findings indicate that innovativeness is not a leading parameter, but only an important variable, and the innovative style of responding to changes is not at all included in the category of important variables in regression analysis. Apparently, for the students of technical specialties who participated in our study, the innovative style of responding to changes is a rare phenomenon and is not preferable in situations of choice of actions.

Reflecting on this, we should agree that the emergence of innovations, new technologies and products is largely determined by the environment, social attitudes and beliefs that are common among people (Lebedeva, 2008; Lebedeva & Yasin, 2009). For example, Manokhina (2011) believes that the traditional values prevailing in the mass consciousness of Russians – adherence to the habitual, fear of change, paternalistic expectations – do not contribute to the formation of consciousness oriented towards innovative changes. They have a deforming impact on individuals' activities and represent an 'institutional trap' of the psychological unreadiness for innovations in society. The researcher emphasizes that "serious intentions of the state run into no less serious traps of innovative development, many of which have rather deep-lying psychological reasons" (Manokhina, 2011, p. 47). They are based on values that take a long time to develop and cannot be changed in a flash. Traditional values and values of survival that many researchers consider prevalent in our society (Inglehart, Foa, Peterson, & Welzel, 2008; Inglehart, 2018; Lebedeva & Yasin, 2009; Atamanova & Bogomaz, 2018) represent a factor when studying the personal readiness for innovative activities among young people. Therefore, we assume that they may impede its implementation.

At the same time, students' characteristics of a bipolar orientation reflect the transitivity of social reality (Martsinkovskaya, 2018). As a result, personal characteristics of young people are a kind of psychological markers of changes taking place in society, culture, economy, when the most significant characteristics of the previous period are preserved and the characteristics of the next stage, which has not yet come, begin to appear (Chagdurova, 2014). They reflect the ongoing changes, as well as the stability and conservatism of traditional values. At the same time, as Guseltseva (2017) argues, the values of modern young people reflect a transnational trend – a movement from the values of security to the values of development, from the values of survival to the values of self-realization. The significant predictors of 'openness to experience', 'openness to change', 'index of personal innovativeness' identified during the regression analysis indicate that young people have a strong and stable demands for self-realization, professional improvement, and active participation in social transformations.

Conclusions

The findings of our study indicate that students studying at technical universities are not fully ready to carry out innovative activities after graduating from the university. When considering the diagnostic parameters, we identified that the innovative style of responding to changes is not predominant for students when assessing their personal readiness for activities. We believe that this fact should be taken into account when discussing the issues of qualitative changes in the country, its transition to an innovative path of development, since organizational and economic components of transformations are important along with psychological characteristics of future specialists.

The most significant factors influencing the manifestation of innovative personality characteristics are, first of all, the values of respondents, styles of responding to changes, and openness to experience.

According to regression analysis, 'openness to experience', 'index of personal readiness for activities', and 'index of innovativeness' are among the leading indicators of students' readiness for innovative activities.

When analyzing values as significant predictors of innovative activities, we observed the heterogeneity of the value system of young people studying at technical universities, a simultaneous manifestation of their values of survival, traditional values, as well as the values of openness to change and self-transcendence. These results speak in favour of transitivity in social reality. Young people have the most significant characteristics of the previous period, which are preserved, and the characteristics of the next stage, which begin to appear. We believe that this will inevitably affect the subsequent professional activities of young people and their personal self-realization.

At the same time, the values of self-transcendence and openness to change, as significant predictors of innovation activities, indicate that young people have a desire for self-development, professional improvement, and active participation in transformations.

Our findings indicate the need to create the educational environment aimed at developing innovative competencies of university students and searching for training models that meet the requirements of the time (Bogomaz, Kozlova, & Atamanova, 2015). They can serve as a psychological basis for design programs for the professional development of future specialists (Atamanova, Bogomaz, & Filippova, 2018; Bogomaz, Klochko, Krasnoryadtseva, & Podoinitsina, 2018).

In addition, the results obtained in our study indicate the importance of personal development in the professional educational process, the importance of psychological and pedagogical support for the development of students' personal potential, formation of the future specialists' experience of innovative activities in higher professional education.

Our findings can be useful in studying the sociocultural dynamics of society and serve as prognostic parameters for future changes when considering the prospects for the future, since these are young people who will have to implement plans for the modernization of the country.

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Ideas About Serving Among Representatives of Various Professional Groups

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Abstract

Introduction. This paper examines the ideas about 'serving' among representatives of various professional groups, including civil servants, servicemen of the National Guard of the Russian Federation, and firefighters and rescuers of the Ministry of the Russian Federation for Civil Defense, Emergencies and Elimination of Consequences of Natural Disasters (EMERCOM of Russia).

Methods. The study used expert evaluations to collect and to structure information (expert opinions) about the concept of 'serving' and involved civil servants, servicemen of the Russian National Guard, and firefighters and rescuers of EMERCOM of Russia. Content analysis was used to carry out a qualitative and quantitative analysis of the content of experts' responses concerning the concept of 'serving'.

Results and Discussion. The linguistic units from the experts' responses were combined into 5 categories of content-analysis: 'attitude towards work', 'fulfillment of civic and official duties', 'helping others', 'personality traits', and 'serving God'. In ideas of civil servants, serving is associated with the categories of 'helping others', 'attitude towards work', 'fulfillment of civic and official duties'. Servicemen characterize serving using the categories of 'fulfillment of civic and official duties' and 'attitude towards work'. The categories of 'personality traits', 'helping others', 'attitude towards work', 'fulfillment of civic and official duties' are the most significant in ideas about 'serving' among firefighters and rescuers of EMERCOM of Russia. All the experts understand serving as a professional activity aimed at helping others and fulfilling civic and official duties, which is accompanied by an emotional and value attitude towards work. Differences in the understanding of serving by representatives of various professional groups may be explained by the content of their professional activities. This study expands our understanding of the concept of 'serving' as a psychological phenomenon. The findings obtained in the study can be readily used for psychological and motivational support of specialists from these professional groups.

Keywords

serving, understanding of serving, idea of serving, professional groups, experts, linguistic units, civil servants, servicemen, firefighters, rescuers

Highlights

► Similarities and differences in ideas about 'serving' among representatives of various professional groups are determined by the content of their professional activities.

- ▶ The categories of 'attitude towards work', 'fulfillment of civic and official duties', and 'helping others' are the main categories in the experts' understanding of the concept of 'serving'.
- ▶ Civil servants, servicemen, and firefighters and rescuers of EMERCOM of Russia understand serving as a professional activity, accompanied by an emotional and value, positive attitude towards work, aimed at fulfilling civic and official duties and helping others by a person having certain qualities.
- ▶ Research in social ideas about serving expands our understanding of serving as a psychological phenomenon.

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Introduction

Research in the issues of serving is important because of the limited resources and effectiveness of monetary motivation on employees in socially significant professional spheres and much need for new methods of non-material motivation of professional activity, in particular, based on actualizing serving motivation.

Today, the concept of serving as a psychological phenomenon is understudied. A literature overview has shown that the theoretical and practical aspects of issues of serving are insufficiently developed. In Russian scientific literature the concept of serving is mainly considered by representatives of religious studies, historical, philosophical knowledge in the context of charity traditions and the practice of social service (Antonova, 2009; Doinikova, 2006; Zubanova, 2012, 2013; Zubanova, Stepanov, Patyulina, & Ruzanova, 2013; Krasnobaeva, 2013; Levchenko & Cherkasova, 2013; Stepanov, 2012; Subaeva, 2004; Ustinenko, 2008; etc.). Global experience speaks in favour of the prevalence of social service mainly by such non-profit associations as the People Serving People Foundation (<https://www.pspfoundation.org/>), People Serving People (<https://www.peopleservingpeople.org/>) and private persons (McNeely, n.d.).

Certain works examine the phenomenon of serving in the context of various professions in relation to librarians, scientists, foresters, poets, lawyers, musicians, medical workers, agronomists, etc. (Zolotukhina & Smirnova, 2013; Stukov, Osyaeva, & Shashkina, 2013; Kulik, 2017; Selikhovkin, 2009; Reshetnyak, 2017; Panyushkin, 1997; Karpov, 2013; Blozen, 2018; Hurst-Wahl, 2014; Khan, 2017; Langsley, 1989; Sims & Openshaw, 1980). Malik, Yamamoto, Souares, Malik, & Sauerborn (2010) show that intrinsic and sociocultural factors, such as serving, are important motivators for the professional practice of physicians.

Research in social ideas about serving is important because of the popularity of the concept of 'serving' in the common practice of Russians, the diversity and ambiguity of definitions of the concept of serving, instability of content perception and ideas about this concept, as well as the lack of a scientific psychological view of this phenomenon (Barykina & Shutova, 2018). The study of social ideas of serving may open up new opportunities for studying the very phenomenon of

serving, and for predicting the processes occurring in the value-meaning sphere of representatives of various professional groups and society as a whole.

The theory of social representations by Moskovici (1995), suggests that social representations are any forms of beliefs, ideological views, knowledge of members of a social group in relation to a changing life. Social representations are potentially conscious, are widely shared by members of a certain socio-cultural group, and play a special role in maintaining and regulating intragroup relations (Mustafina, 2012). The concept of social representations enabled us to examine the way our contemporaries understand the concept of serving and formulate our definition of this concept.

Aims

We conducted the present study in order to identify the characteristics of ideas about serving among representatives of various professional groups: civil servants, servicemen of the Russian National Guard, and firefighters and rescuers of EMERCOM of Russia.

Methods

The study was carried out using the method of expert evaluations aimed at obtaining information (expert opinions) expressed in quantitative and/or qualitative form, its processing, analyzing, and summarizing. Along with other mathematical and statistical methods, the method of expert evaluations has become widespread in psychological science (Artyukhov et al., 2012; Karpova, Sochivko, & Pastushenya, 2019; Maksimenkova, 2018; Benini et al., 2017; Neal & Grisso, 2014; Zondervan-Zwijnenburg, van de Schoot-Hubeek, Lek, Hoijtink, & van de Schoot, 2017).

Study Participants

1. Civil servants – 30 experts (67 % females, 33 % males; higher and specialized secondary education; mean working experience of 12 years).

2. Servicemen of the Russian National Guard – 28 experts (11 % females and 89 % males; higher education; mean working experience of 24 years).

3. Firefighters and rescuers of EMERCOM of Russia – 32 experts (3 % females and 97 % males; higher education; mean working experience of 17 years).

In total, the study involved 90 experts aged 24–59 years (mean age = 42.7, standard deviation = 9.98; 27 % females, 73 % males).

Research Procedure

The expert survey card (inquiry form) provided the instructions and indicated the purpose of the examination and the procedure for working with the form.

The expert survey card included an open-ended item – ‘I understand serving as...’ This item is aimed to examine the ideas of the concept of ‘serving’.

The procedure for conducting the survey was classical: after reading the instructions each expert, filled in the inquiry form, and put the date and signature. The experts signed their consent to participate in the survey and to store the data.

During the study, few experts ($n = 2$, 1.08 %) had difficulty in defining the concept ‘serving’. Meanwhile, the majority of participants in the study clearly understood the meaning of the task and gave full answers to the questions.

In total, we analyzed 90 expert survey cards. All the inquiry forms were found to be valid.

To analyze the experts' responses we used *the method of content analysis* and the methods of mathematical statistics using Pearson's χ^2 test.

The categorization system underlying the content analysis method enabled us to carry out a qualitative and quantitative analysis of the content of experts' responses (Denisenko & Chebotareva, 2008).

Our study represents a kind of 'extracting meaningful trends from diffuse expert knowledge' (Bazarov, Erofeev, & Shmelev, 2014). Recognizing the fact that experts' responses are determined by professional orientation, in this study we aimed to describe the experts' ideas about the concept of serving as social creativity that has the potential to reflect the professional culture.

Research Stages

The stages of the content analysis were as follows:

Determining the system of categories of content-analysis (categories of analysis); these were the most general, key concepts corresponding to the research task.

Distinguishing the units of analysis – linguistic units (elements of the content of the text).

Calculating the frequency of occurrence of linguistic units related to various categories of content-analysis (Table 1). The last stage enabled us to generalize the results obtained in the study and formulate the conclusions (Baiborodova & Chernyavskaya, 2018).

We distinguished 98 linguistic units of the analysis (elements of the content of the text) are combined them into 5 categories of content-analysis (Table 1):

1. Attitude towards work (25 linguistic units, 26 %);
2. Fulfillment of civic and official duties (27 linguistic units, 27 %);
3. Helping others (25 linguistic units, 26 %);
4. Personality traits (18 linguistic units, 18 %);
5. Serving God (3 linguistic units, 3 %).

Results and Discussion

Table 1 and Figure 1 present the results obtained in the study and the analysis of ideas about 'serving' among civil servants, servicemen, firefighters and rescuers of EMERCOM of Russia.

The analysis showed that the frequency of occurrence of linguistic units (elements of the text content) (Table 1) in the category of '**attitude towards work**' is 25 units, or 26 % of the total number of responses. This category includes the following linguistic units: '*working effectively*'; '*devotion to any goal or idea*'; '*devotion to activities*'; '*perform tasks efficiently*'; '*being honest, responsible for work*'; '*professional dedication*'; '*favorite work*'; '*honor and dignity of the profession*'; '*execution of orders*'; '*voluntary submission another person*'; '*obeying orders or instructions implicitly*'; '*subordination*'; '*discipline*'; '*order*'; '*activity that implement moral values*'; '*following ethical and legal standards*', etc.

The category of '**fulfillment of civic and official duties**' included the following 27 linguistic units of analysis (27 % of the responses): '*fulfill duty to the Motherland*'; '*fulfill civic duty to the state*'; '*fulfill duty to someone*'; '*fulfill duty*'; '*fulfill civil, state, military, service duty to the Motherland, Fatherland*'; '*duty to the country*'; '*certain duty to the state and society*'; '*defend the Motherland*'; '*loyalty to the Motherland*'; '*serve the Fatherland*'; '*selflessness*'; '*not sparing yourself, lay down souls for the Fatherland*'; '*not sparing your life, put your souls on the altar of the Fatherland*'; '*to work*

for the good of the Motherland'; 'work for the state'; 'work for the good of the Motherland, yourself and your family'; 'military duty'; 'military service'; 'work in hazardous conditions'; 'to fulfill the tasks'; 'to perform service and combat missions'; 'complete all assigned tasks', etc.

The '**helping others**' category included the following 25 linguistic units of analysis (26 % of the responses): 'helping others'; 'to do good'; 'giving others'; 'improving others' lives'; 'be useful'; 'working for others'; 'protect others'; 'serving others'; 'observing interests of others'; 'acting for the good of society'; 'participating in the improvement of living conditions of others'; 'being responsible for the life and peace of others'; 'respect for others'; 'gratuitous selfless help', etc.

The '**personality traits**' category (18 linguistic units, 18 %) included the following personality traits: *responsibility, honesty, honor, conscience, dignity, pride, probity, professionalism, patriotism*, etc.

Separately, we distinguished the category of '**serving God**', which included the following expressions 'serving God', 'the process of serving the church', 'worship, temple'. In total, this category included 3 linguistic units, or 3 % of the total number of expert responses.

Table 1

The frequency of linguistic units in experts' responses concerning the concept of serving and their distribution by the categories of content-analysis

Experts, n	Frequency of linguistic units n	Categories of content-analysis									
		Attitude towards work		Fulfillment of civic and official duties		Helping others		Personality traits		Serving God	
		n	%	n	%	n	%	n	%	n	%
Civil servants, n = 30	28	9	32	6	22	11	39	2	7	0	0
Servicemen, n = 28	31	9	29	14	45	5	16	2	7	1	3

Table 1

The frequency of linguistic units in experts' responses concerning the concept of serving and their distribution by the categories of content-analysis

Experts, n	Frequency of linguistic units	Categories of content-analysis									
		Attitude towards work		Fulfillment of civic and official duties		Helping others		Personality traits		Serving God	
		n	%	n	%	n	%	n	%	n	%
Firefighters and rescuers, n = 32	39	7	18	7	18	9	23	14	36	2	5
Sum of frequencies	98	25	26	27	28	25	26	18	18	3	3

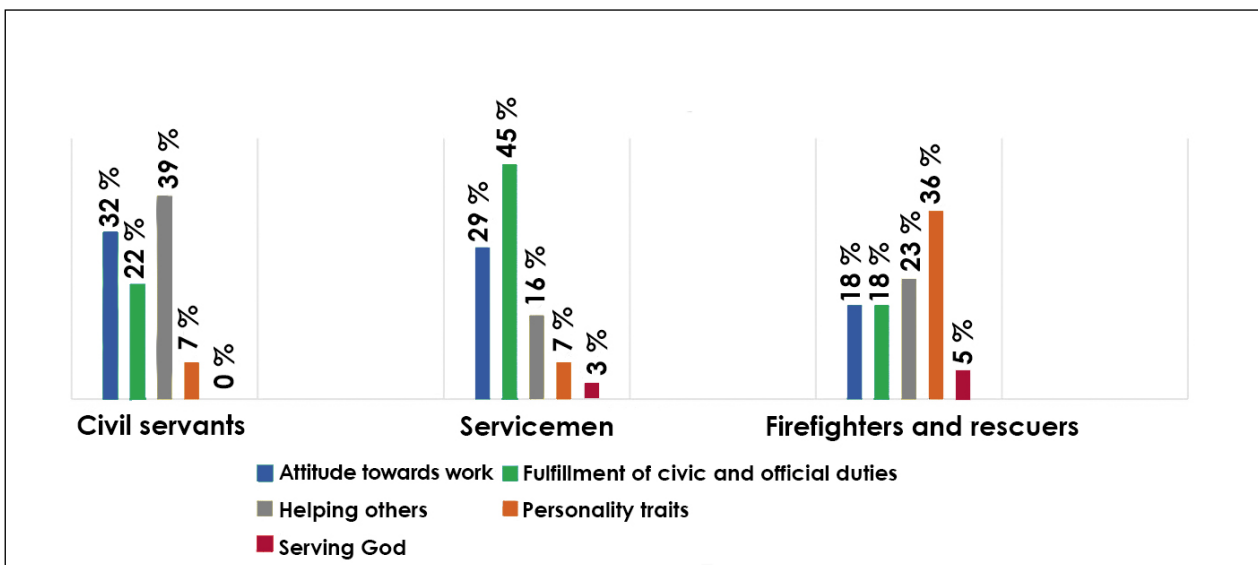


Figure 1. The frequency of linguistic units in experts' responses concerning the concept of 'serving' and their distribution by the categories of content-analysis, %

Ideas about serving among civil servants

When analyzing understanding of the concept of ‘serving’ among civil servants (n = 30), we identified a linguistic hierarchy, where the dominant position was occupied by responses from several categories: ‘helping others’ (39 % of statements), ‘attitude towards work’ (32 % of statements) and ‘fulfillment of civil and official duty’ (22 % of statements). The statements from the category of ‘personality traits’ were most rare (7 % of statements). Linguistic units from the category of ‘serving God’ were absent in the lexicon of experts (0 %) (Table 1; Fig. 1).

We observed significant differences (Pearson χ^2 test, $\chi^2 = 5.455$; $p < 0.05$) between the categories ‘helping others’, ‘attitude towards work’, ‘fulfillment of civic and official duties’ (referred to the 1st level) and the category of ‘personality traits’ (referred to the 2nd level) (Table 2). Thus, the 1st level includes the categories that are most frequently associated with the concept of ‘serving’, and the 2nd level – the least frequently associated ones. No significant differences existed between the categories within the levels (Table 2).

Table 2	
<i>Ideas about serving among civil servants (n = 30)</i>	
<u>Levels of significance of categories</u>	
1st level	2nd level
Helping others	Fulfillment of civic and official duties
Attitude towards work	Personality traits
Fulfillment of civic and official duties	
Note: $p < 0.05$.	

The analysis showed that civil servants most often defined the concept of serving as ‘*activities for the good of society*’, ‘*improvement of others’ living conditions*’, ‘*responsible implementation of tasks*’, ‘*simplification of obtaining public services*’, classified as ‘helping others’ (39 % of statements). They also understood serving as an opportunity ‘*to benefit others and society without the goal of personal enrichment*’, ‘*work for the good of others*’, personal efforts to improve the people’s life (‘*my efforts are aimed at improving the lives of citizens*’), personal attitude towards work (‘*my attitude towards work that I do responsibly and conscientiously*’), etc. (the ‘attitude towards work’ category).

Our findings indicate that a special place belongs to the definitions of the concept of serving referred to the category of content-analysis of ‘fulfillment of civic and official duties’ (22 % of statements). The mathematical analysis showed that there are no significant differences between the linguistic units of this group and the statements related to the categories of ‘helping others’ and ‘attitude towards work’ (Pearson’s χ^2 test, at $p < 0.05$).

Meanwhile, we observed no statistical difference between linguistic units belonging to the category of ‘fulfillment of civic and official duties’ and the lexical components of the category of

content-analysis of 'personality traits', which much less frequently define the concept of 'serving' (Pearson's χ^2 criterion, $p < 0.05$).

According to several civil servants, serving should be understood as '*dedication to work*', '*professionalism*'; '*a man of word and deed*' should be considered as the subject of serving. Therefore, certain personality traits, a positive attitude towards work, and competencies necessary for successful solution of professional tasks could be a kind of psychological resource that allows the subject of professional activity to fulfill his civic and official duties and help others. However, our findings from this group of experts enabled us to interpret serving, first of all, as a personal, personally significant activity of an employee, aimed at achieving a socially useful result. Such activities are helping others and fulfillment of duty, which are motivated by a certain attitude. Although the latter may also be considered as the result of the employee's consciousness and activity. With regard to the work of civil servants, both the activity itself and its result are reflected in 'protecting human and civil rights and freedoms' (On the state...: Federal law of July 27, 2004, no. 79-FL; On the system...: Federal law of May 27, 2003, no. 58-FL; Christensen & Opstrup, 2018), taking care of others' safety, and creating conditions for cultural development and growth of economic well-being.

In the field of social protection of the population, civil servants participate in the development, management and implementation of programs aimed at social protection of mothers and children, are engaged in demographic policy, provide assistance to citizens in connection with their age, health, social status, and insufficient means of subsistence. Civil servants provide social assistance (social protection, social security) to needy social groups, concrete families, and individuals. This often takes place in the form of serving the sick and the elderly, taking care of children, targeted social assistance to the poor, providing them with benefits in solving vital problems of nutrition, health care, education, pensions, material assistance, etc. In the field of culture, civil servants organize work with children and youth, identify and support talents, help people of the art create and promote their works, support industry and enterprises.

Therefore, by serving civil servants understand helping others, attitude towards work, fulfillment of civic and official duties; serving is personally significant activity of an employee aimed at achieving a socially useful result while respecting the priority of human and civil rights and freedoms, consolidated by professional job responsibilities.

Ideas about serving among servicemen

The analysis showed that linguistic units from the categories of 'fulfillment of civic and official duties' (45 % of statements) and 'attitude towards work' (29 % of statements) (Table 1; Fig. 1) occupy the dominant position in the hierarchy of ideas about 'serving' among servicemen ($n = 28$).

The analysis of the frequency of occurrence of linguistic units within the categories of 'fulfillment of civic and official duties', 'attitude towards work', 'helping others', 'personality traits', and 'serving God' showed that there are statistically significant differences between these categories (Pearson's χ^2 test, at $p < 0.05$). Thus, the above categories were divided into 3 levels. The 1st level includes the categories that are the most frequently associated with the concept of 'serving'; the 3rd level – the least frequently associated ones. There are statistically significant differences in the frequency of attribution of concrete linguistic units to the concept of 'serving' between the categories of the 1st, 2nd, and 3rd levels of the hierarchy, ($\chi^2 = 6.452$; $\chi^2 = 5.543$,

at $p < 0.05$). No statistically significant differences existed between the categories within each level (Table 3).

Table 3		
<i>Ideas about serving among servicemen (n = 28)</i>		
<u>Levels of significance of categories</u>		
1st level	2nd level	3rd level
Fulfillment of civic and official duties	Attitude towards work	Helping others
Attitude towards work	Helping others	Personality traits
		Serving God

Note: $p < 0.05$.

The analysis showed that 45 % of servicemen understand the concept of 'serving' as 'fulfillment of civil and official duty', that is, through the contractual and voluntary moral obligations (Shchipakov, 2017). For example, servicemen gave the following definitions of serving: '*fulfillment of service and combat missions*'; '*assistance, benefit to the state*'; '*loyalty to the Fatherland*'; '*serving for the good of the Motherland*'; '*loyalty to military duty*'; '*fulfillment of military duty to defend the Motherland*'; '*implementation of the Russian officer's code*'; '*strict fulfillment of their duties for the good of the state*'; '*protecting the interests of the country*'; '*defending the Motherland*'; '*... defending the Motherland, peaceful sky overhead*'; '*loyalty to the Fatherland, Motherland*'. Therefore, the servicemen associated the concept of serving with military service and protection of state interests.

At the same time, we should not ignore the evidence of scientists (Britt, Adler, & Castro, 2006; Castro & Hassan, 2016) that the nature and conditions of military service can affect the mental health and well-being of military personnel. In this regard, the results of this study are significant, since servicemen understand serving through the category of 'attitude towards work' (29 % of statements): '*giving themselves, all their strength, not sparing their lives, put their souls on the altar of the Fatherland*', etc.

Clause 1, Article 59 of the Constitution of the Russian Federation, adopted by a popular vote on July 4, 2020, states that 'defense of the Fatherland is the duty of citizens of the Russian Federation', and it is extremely important and extremely honorable. Awareness of the importance of military service evokes feelings of '*pride*' and '*patriotism*' in servicemen, desire '*not to spare their lives, put their souls on the altar of the Fatherland*', '*serve honestly and conscientiously, work*

for the good of the country, to strengthen our state', 'devote themselves to protecting the interests of the country', which, in turn, become motives for effective activities.

We share the opinion of V. Ya. Gozhikov that understanding of military service as an honorable duty determines a special attitude towards the process of its performance, that is, as something very important: the sociocultural and value-meaning imperative of serving (in the format of military professional development of cadets) manifests itself in the fact that servicemen as active subjects 'cannot think of themselves without a value attitude towards officer service, which determines the foundations of life and is a system-forming component of their personal and professional identity' (Gozhikov, 2017, p. 64).

Therefore, the results of the study enable us to assume that certain individual participants associate serving with emotional and value attitude towards activities, since they define the concept of 'serving' using formulations classified under the category of 'attitude towards work'. Moreover, one of the experts proposed the following definition, 'Service is a type of a person's attitude to his/her activities, when he/she feels responsible, obliged to faithfully execute his/her job and feels pride'.

The analysis also showed the least frequency of the linguistic units categorized as 'helping people' (16 %), 'personality traits' (7 %), and 'serving God' (3 %) in definitions of the concept of serving among servicemen.

In relation to the ideas about 'serving' among servicemen, we consider important the results of Zhilyaev's (2017) study of the image and components of the positive image of a Russian officer. According to the researcher, 30 % of the officers surveyed believe that a true officer should serve the Fatherland, protect the freedom of men and citizens, protect public order and ensure the safety of citizens, help citizens in difficult situations, which means that an officer must be brave, decisive, courageous, responsible, and disciplined. Moreover, this is behavior that the civilian population associates with a positive image of a serviceman and expects from an officer of the National Guard troops (Zhilyaev, 2017). Zhilyaev associates the concept of 'service' with the categories of 'helping others' and 'personality traits'; serving means helping others, protecting and showing courage and heroism.

Thus, the analysis showed that servicemen characterize 'serving' in the categories of 'fulfillment of civil and official duty' and 'attitude towards work' and understand serving as the duty of the Russian Federation citizens to defend the Fatherland, which is coupled with an emotional value attitude towards officer service as a system-forming component of their personal and professional identity.

Ideas about serving among firefighters and rescuers of EMERCOM of Russia

Firefighters and rescuers of EMERCOM of Russia (n = 32) most often use the statements related to the categories of 'personality traits' (36 % of statements), 'helping others' (23 % of statements), 'fulfillment of civic and official duties' (18 % of statements), and 'attitude towards work' (18 % of statements). Least of all the statements ('church service', 'serving God') entered the 'serving God' category (5 % of statements) (Table 1; Fig. 1).

Table 4	
<i>Ideas about serving among firefighters and rescuers of EMERCOM of Russia (n = 32)</i>	
<u>Levels of significance of categories</u>	
1st level	2nd level
Personality traits	
Helping others	
Attitude towards work	Serving God
Fulfillment of civic and official duties	
Note: $p < 0.05$.	

We observed significant differences (Pearson's χ^2 test, $\chi^2 = 5.379$; $p < 0.05$) among the categories of 'personality traits', 'helping others', 'attitude towards work', 'fulfillment of civic and official duties' (referred to the 1st level) and the category of 'serving God' (referred to the 2nd level). Thus, the 1st level includes the categories which are the most frequently associated with the concept of 'serving', and the 2nd level – the least frequently associated ones. No statistically significant differences existed between the categories within the 1st level (Table 4).

For firefighters and rescuers of EMERCOM of Russia the concept of 'serving' was most frequently associated with the category of 'personality traits', including 'honor', 'dignity', 'responsibility', 'discipline', 'courage', 'conscience', and 'professionalism'. Official activities of firefighters and rescuers of the Ministry of Emergency Situations are associated with threats to their life and health; the cost of professional mistakes is too high. Accordingly, in order to act effectively, they need not only special knowledge and practical skills, but also certain personality traits, mental states, motivation, which determine the qualitative implementation of professional tasks to save people and property, to provide first aid to victims, to protect population in case of emergencies, etc. (On fire safety: Federal law of December 21, 1994). Moreover, the activities of firefighters and rescuers are regulated by regulatory and statutory documents that determine the goals, objectives of professional activity, functional duties of officials of divisions, control over the performance of tasks, the rights and obligations of employees, prescribe ways of behavior, strict subordination in relations to participants in collective activities and relationships between them.

Besides, firefighters and rescuers of EMERCOM of Russia understand serving through the category of 'helping others' (23 % of linguistic units): *'being responsible for the life and peace of others'*, *'saving others'*, *'protecting others'*, etc. In 18 % of statements, the concept of 'serving' correlates with *'duty'*, *'service to the Motherland'*, *'service to others'*, *'protection of the population'*, which entered the category of 'fulfillment of civil and official duty'; 18 % of statements were classified as 'attitude towards work' and defined serving as *'working in the name of someone or something'*, *'responsible attitude towards official duties'*, etc. We believe that high moral responsibility and discipline, stress resistance, heroism, readiness and ability to quickly mobilize resources, take risks, act thoughtfully in conditions of multitasking, lack of information and lack of time, attitude towards duties as a socially useful activity and civic, official duty, etc. play a significant role in the behavior of firefighters and rescuers of EMERCOM of Russia. This may explain the fact, that in this group of experts the concept of serving was associated with the categories of 'personality traits', 'helping others', 'attitude towards work' and 'fulfillment of civic and official duties' (no statistically significant differences, Pearson's χ^2 test, $p < 0.05$).

Thus, the analysis showed that firefighters and rescuers of EMERCOM of Russia understand serving as regulated activities to save lives in emergency situations, associated with the presence of certain personality traits and an emotional-value attitude towards work. The categories of 'personality traits', 'helping others', 'attitude towards work', and 'fulfillment of civic and official duty' were the most significant categories in the concept of 'serving' of firefighters and rescuers of EMERCOM of Russia.

Conclusions

Thus, the qualitative and quantitative analysis of the categorical data indicate that the experts' ideas about 'serving' have certain similarities and differences, probably due to the content of their professional activities and personal characteristics.

According to the results of the survey of experts and the data of statistical analysis, the categories 'attitude towards work', 'fulfillment of civic and official duties' and 'helping others' are statistically the most frequent definitions (26 %, 28 % and 26 % of linguistic units, respectively) and, as a consequence, the main ones in the experts' understanding of the concept of 'serving' (Table 1).

The rest of the categories – 'personality traits' (18 % of responses) and 'serving God' (3 % of responses) – play a secondary role and are much less frequently used as a definition of the concept of serving.

We draw a conclusion, that, despite specific characteristics of various fields of activities, the experts (civil servants, servicemen, firefighters and rescuers of EMERCOM of Russia) turned out to be common in their understanding of serving as a professional activity aimed at helping others, associated with an emotional-value attitude towards work, and as a process of fulfilling civil and official duties.

The present study expands our understanding and ideas about serving, fills the gaps in information about the phenomenological foundations of serving as a psychological category, and provides possibilities for using its results in the practice of psychological services for moral, psychological, and motivational support of service activities, for example, for actualizing serving motive.

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Barykina

Ideas About Serving Among Representatives of Various Professional Groups

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Factor Structure Specificity of Intercultural Competence Among International Relations Students: A Gender Perspective

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Abstract

Introduction. This study focuses on intercultural competence of students of international relations and aims to determine the characteristics of intercultural competence in the group of Russian male and female students of international relations.

Methods. The ideas of the Council of Europe document on key competencies underlying the culture of democracy were the source material for the study of intercultural competence. We interviewed 54 students of international relations aged 17–23 years using the technique of M. Barrett who operationalized this conceptual model of the Council of Europe. This paper represents a first effort in comparing the factor structure of theoretical and empirical models of Russian respondents' intercultural competence (taking into account their gender) in relation to their values, behavioral attitudes, practical skills, and knowledge necessary for intercultural interaction.

Results. The study involving Russian respondents confirmed the hypothesis that there are no differences in the number of factors in the theoretical and empirical models of intercultural competence. In the group of Russian female students the rating of factors of intercultural competence was as follows: 1 – practical skills, 2 – tolerance, 3 – empathy, and 4 – civic consciousness. In the group of Russian male students the rating of factors of intercultural competence was as follows: 1 – respect and responsibility, 2 – adaptability, 3 – empathy, and 4 – tolerance.

Discussion. The findings obtained from the Russian sample suggest that while maintaining the four-factor structure in the theoretical and empirical models of intercultural competence, the content of factors differs significantly from the theoretical model. In our research, the respondents showed semantic and instrumental diversity in the components of intercultural competence. Women associate the success of intercultural interaction with skills, self-education, skills for listening and understanding, willingness to cooperate, and tolerance. For men, the success of intercultural interaction depends on respect and responsibility, adaptability, knowledge and its critical understanding. The conceptual model for the development of intercultural competence should be improved taking into account gender and professional characteristics of students and should be implemented in educational programs.

Keywords

intercultural competence, competence model, intercultural interaction, education, students of international relations, gender, factor analysis, values, behavioral attitudes, professional activity

Highlights

- The development of intercultural interaction is especially relevant for students of international relations.
- There are various approaches to understanding intercultural competence.
- The most operationalized model of intercultural competence proposed by M. Barrett suggests the following four factors: values, attitudes, skills, knowledge and its critical understanding.
- A four-factor model of intercultural competence is characteristic of Russian students of international relations. However, its meaning content differed from the model of M. Barrett.
- In the group of female students the factors of intercultural competence were as follows: practical skills, tolerance, empathy, and civic consciousness. In the group of male students these were respect and responsibility, adaptability, empathy, and tolerance.

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Introduction

The theory of professional education has been transforming in recent years, which has far-reaching consequences (Liferov & Kostikova, 2017; Gonina, 2017). The aspect of intercultural interaction is considered to be very important in a future specialist's professional culture. The ability of specialists to understand people with different cultural backgrounds is recognized as a part of professional culture (Griffith, Wolfeld, Armon, Rios, & Liu, 2016; Voevoda, 2016). They should be able to better interpret and coordinate the phenomena in the field of their professional communication (Kostikova, 2018; Chuganskaya, 2018).

Migration and global processes in the world are of scientific interest for specialists in intercultural interaction (Berry, 1997), which results in numerous studies of intercultural dimension in higher education (Lantz-Deaton, 2017). Academic adaptation of students of international relations to the culture and educational environment of universities has gained increasing attention. Psychological, social, linguistic, and cultural adaptation of students of international relations are considered from various points of view (Barrett, Byram, Lázár, Mompoin-Gaillard, & Philippou, 2014; Makhmutova, 2019).

In modern society there is a trend towards gender depolarization, which manifest itself in the variability of male and female behavioral models and various levels of implementation of gender norms and values (Aivazova, 2017; Kletsina & Ioffe, 2017). Values disclose the true meaning of gender roles both in a wide context at the level of large social groups and in the form of

individuals' self-realization, their personality traits (Bartel-Radic & Giannelloni, 2017). In some European countries, the humanization and mutual enrichment of public relations are facilitated by the convergence of standards of behavior in terms of male and female gender roles (Bowen, 2020). Along with family roles, professional activity is an important part of life of many modern women; it has significantly expanded the possibilities (capabilities) for personal self-realization and, accordingly, subjective well-being of women (Radina, 2012). Thus, the studies of intercultural interaction that construct the knowledge of intercultural competence indicate the influence of global social, professional, educational, and gender factors.

A theoretical and methodological analysis of the studies dealing with the models of intercultural competence showed that these studies differ in the degree of universality of considering the issues of intercultural interaction. In Russian literature, the works of T. G. Stefanenko, V. S. Ageev, N. M. Lebedeva, L. G. Pochebut, G. U. Soldatova, and O. E. Khukhlaev are fundamental for the concepts and theories of intercultural competence. T. G. Stefanenko examined ethno-cultural identity and ways of improving intercultural communication (Stefanenko, 2009; Stefanenko & Kupavskaya, 2010). L. G. Pochebut considered intercultural competence as a part of general communicative competence with cognitive, emotional, and behavioral components; it contains the following constituents: cultural knowledge and skills, adequacy in cross-cultural contacts, tolerance, assertiveness, and sensitivity (Pochebut, 2007, 2017).

Constructing a comprehensive model of intercultural competence, O. E. Khukhlaev et al. also emphasize an important role for intercultural communication and interaction (Khukhlaev & Chibisova, 2010; Khukhlaev et al., 2020). 'Intercultural competence is a combination of knowledge, personality traits, motives, and specific skills that contribute to effective goal achievement in intercultural interaction' (Soldatova & Panteleev, 2007, pp. 12–13). However, the theories of intercultural competence either consider a procedural aspect of intercultural communication (Soldatova & Shaigerova, 2015) or an utilitarian purpose of such a theory as a methodological basis for designing various programs of intercultural training (Kornilova, 2012).

Current dissertation researches in intercultural competence are carried out in the field of humanities. With all the variety of theoretical and methodological approaches, culturologists, sociologists, political scientists, teachers, and psychologists consider intercultural interaction within intercultural contacts (Sadokhin, 2009), within professional activity introducing the concept of professional intercultural competence (Pisarenko, 2011), within pedagogical activity forming intercultural competence as an educational result of personal integration (Yankina, 2006), or as an attempt to diagnose psychological characteristics of intercultural competence by constructing "psychological profiles of intercultural competence" (Gridunova, 2018). Regarding psychological components of intercultural competence, all these studies focused on certain aspects, for example, value orientations (Yankina, 2006), stable motivation for intercultural communication (Pisarenko, 2011), self-control, self-consciousness, locus of control, empathy (Logashenko, 2015), etc. Contemporary Russian psychologists are highly interested in tolerance of ambiguity in the context of a specialist's professional culture (Soldatova & Panteleev, 2007). In intercultural contexts, researchers investigate complex situations and subjects who work well in poorly predicted or extreme conditions, cope with uncertainty in a positive and constructive manner, and feel themselves comfortable in unfamiliar situations (Oreshkin, Shlykov, Shevchenko, Kostikova, & Belogurov, 2019).

Tolerance for ambiguity is usually analyzed in the following two ways: (a) acceptance of ambiguous conditions and avoidance of ambiguity in order to achieve clarity and (b) varying

intolerance for ambiguity (Kornilova & Chumakova, 2014). However, V. S. Ageev's idea about the lack of psychological knowledge, special research, and elaborations in the field of regulation of interethnic interaction (Ageev, 1990, p. 134) as the basis for intercultural competence remains relevant. Analyzing the processes of acculturation and intercultural relations, N. M. Lebedeva and co-authors carry out consistent development of the issues of intercultural competence (Lebedeva, Luneva, Stefanenko, & Martynova, 2003; Lebedeva, Tatarko, & Berri, 2016). Current works of Russian authors concentrate on various skills that are important for the development of intercultural competence. Thus, the skills of analytical and critical thinking are important for decision-making in situations of dialogue of cultures (Kostikova, Cherniavskaya, Balakhovskaya, & Zakharchenko, 2019), the skills of cooperation, reaching consensus, and maintaining optimistic attitudes among other group members are important for achieving the goals of professional activity in a multi-cultural society (Stepanov, Andreev, Gavzov, Novikov, & Kostikova, 2019).

A more detailed analysis of scientific research in the field of intercultural competence shows the presence of the following specific features. Firstly, intercultural competence is considered in the general object field of intercultural interaction with the designation of cultural, pedagogical, psychological and other professional subject orientations. Secondly, intercultural competence appears to be a form of implementation, a consequence and a result of various processes of intercultural communication. Thirdly, a comprehensive understanding of psychological foundations of intercultural competence has not been formed. Fourthly, the operationalization of the concept of intercultural competence, including its components and integrative qualities, is still understudied.

In order to develop theoretical aspects and expand the possibilities for applications of the concepts of intercultural competence, we examined complex studies of British psychologists and teachers who investigate the development of intercultural competence in the context of civic identity, citizenship, and democratic culture (Barrett, 2018). Borghetti (2017) explores the importance of ethical issues for assessing intercultural competence. Byram (2008) shows how intercultural competence and citizenship can be formed through language teaching. Byram, Golubeva, Hui, & Wagner (2016) also examine various educational practices that develop intercultural competence and citizenship. In the analyzed literature, the principles of a democratic society are mainly considered through the ideas of intercultural competence and citizenship (Deardorff, 2011; Porto & Byram, 2015). This approach is methodologically justified, since it is based on the international document of the Council of Europe – Competences for Democratic Culture. This document concentrates on interdependence between the culture of democracy and cultural dialogue in today's society characterized by social diversity, where intercultural competence, as a constant dynamic process, is based on the actively and flexibly used psychological resources of individuals in order to respond to new circumstances and to adapt (Council of Europe, 2016). Certainly, the concept of the culture of democracy used in the Council of Europe document is not equivalent to the concept of intercultural competence. However, intercultural competence may be considered as a fundamental criterion for a democratic society. For Russian researchers, the reference to this document of the Council of Europe became the starting point for developing a resource approach to the formation of intercultural communicative competence among university students (Bolshakova, 2019).

In *theoretical terms*, our study was intended to show the relationship of intercultural competence with other factors of intercultural interaction, primarily gender. In our study we understand

gender as a social gender that correlates with conventional manifestations of male and female gender roles. *The aim of our research* was to operationalize the principles of the Council of Europe document and the works of foreign researchers in relation to Russian students of international relations and their more adequate professional training.

We have chosen M. Barrett's model as the most complete and well-operationalized one (see the assessment of this model in Barrett et al., 2014; Wagner, Perugini, & Byram, 2017). In his work, he defined intercultural competence as 'a complex of values, attitudes, skills, knowledge and its critical understanding, which are necessary for understanding and respecting those who are perceived as culturally different from us, for effective interaction and communication with them, for establishing positive and constructive relationships with them' (Barrett, 2018, p. 95). The author identified 20 main statements that were combined into 4 factors: values, attitudes, skills, knowledge and its critical understanding (Barrett, 2018).

The preliminary use of the technique for assessing intercultural competence among Russian students in previous Russian works contributed to our study. Researchers examined students' understanding of cultural values in the context of their professional culture (Ilyushina, Prishvina, Shevchenko, Kostikova, & Belogurov, 2018) and concluded that it is necessary to improve higher education to facilitate many-sided personal and professional development (Kostikova, Prishvina, Ilyushina, Fedotova, & Belogurov, 2018). Job-oriented teaching provides both intercultural and professional competence (Kostikova, Prishvina, Ilyushina, Krutova, & Fedotova, 2018).

The *object* of our research is intercultural competence as a socio-psychological phenomenon of a democratic society.

Characteristics of the components of intercultural competence in the group of Russian female and male students represent the *subject* of our research. Intercultural competences were considered as components of intercultural competence.

The aim of our study was to examine the characteristics of intercultural competences in the group of Russian male and female students of international relations. We formulated the following objectives: (a) development of a plan for the study of intercultural competence in the Russian sample; (b) formation of a group of respondents who meet the requirements of the study; (c) preparing necessary materials for conducting surveys and interviews; (d) carrying out statistical processing of the data obtained from the study; and (e) interpretation of findings and formulation of conclusions.

In accordance with the aims and objectives of the study, we formulated the following hypotheses:

Hypothesis 1: there are differences in the content of factors of intercultural competence between M. Barrett's theoretical model empirical data in two groups of Russian male and female students of international relations.

Hypothesis 2: there are differences in the content of factors of intercultural competence in groups of Russian male and female students of international relations.

Methods

The model of M. Barrett (Barrett, 2018), developed according to the recommendations of the document of the Council of Europe (Council of Europe, 2016) was the basis for our empirical study of intercultural competences. This choice was a consequence of the sufficient operationalization of the model of intercultural competence in the questionnaire of M. Barrett, which contains 20 statements that should be evaluated using a 10-point scale. This helps to measure the degree

of manifestation of each of the 20 components of intercultural competence in Russian students. We offered the respondents a Russian-language version of the questionnaire of M. Barrett, which was previously used in the works of Russian authors (Ilyushina et al., 2018; Kostikova, Prishvina, Ilyushina, Fedotova, & Belogurov, 2018; Kostikova, Prishvina, Ilyushina, Krutova, & Fedotova, 2018). The instruction was formulated as follows: 'Dear respondents! Here are 20 statements presented in 4 blocks, which characterize the level of development of your intercultural competence. Rate your level of each of the qualities using a 10-point scale, where 1 and 10 correspond to the minimal and maximum degrees of their development'.

The study involved 1st year students of the Department of International Economic Relations of the Moscow State Institute of International Relations (MGIMO). These students already have a certain understanding of the importance of social and intercultural interaction, which they acquired during general education. However, this understanding has not yet reached the level of the development of intercultural communication skills in the form of professional competencies. We carried out a pilot study of the factor structure of intercultural competence in the group of students of international relations, due to the high importance of data for the development of professional skills among future specialists in this field. The respondents were 54 individual participants: 31 women (aged 17–19 years, median = 18 years, mean age = 18.22 years) and 23 men (aged 17–23 years, median = 18 years, mean age = 18.52 years). Thus, the sample comprised 57 % of women and 43 % of men, which corresponds to the ratio of students of international relations.

The statistical analysis of data was carried out using the Statistica 6.0 software. To compare the determining parameters of intercultural competence in the theoretical model of M. Barrett and empirical data in the group of Russian students of international relations, we performed factor analysis using maximum likelihood estimation and the Varimax rotation procedure. Data factorization was carried out for 2 groups – ratings for each of the 20 statements of the questionnaire in the groups of female and male students.

The research design consisted of two stages:

1. Analysis of the components of intercultural competence based on the M. Barrett model in groups of Russian female and male students.
2. Determination of the components of intercultural competence by factoring empirical data in groups of Russian students of international relations taking into account their gender.

Results

The results of the empirical exploratory study were obtained in two groups of Russian female and male students of international relations. Using factorization ranks for each of the 20 statements (variables) of the M. Barrett questionnaire, we identified factor structures of intercultural competence for each gender group of students of international relations.

In the group of female students of international relations, we identified 4 factors with a total explained variance of 68 %. The factor structure of intercultural competence in this group corresponds to the number of factors in the theoretical model of M. Barrett. However, their content is different. In the group of female students of international relations, we obtained the following factors:

- factor 1 – 'skills' (43 % of the total explained variance);
- factor 2 – 'tolerance' (9 % of the total explained variance);
- factor 3 – 'empathy' (8 % of the total explained variance);
- factor 4 – 'civic consciousness' (6 % of the total explained variance).

The component composition of each of the factors included from one to five variables (statements of the questionnaire) with a significant factor loading value (Table 1). The table shows the most significant variables that make up at least 70 % of the variance contribution to the factor.

Factor	Variable (questionnaire statement)	Factor loading
1	10. Ability for self-education	0.743048
	11. Ability for analytical and critical thinking	0.879278
	12. Skills of observation and listening	0.727269
	14. Flexibility and adaptability	0.806847
	15. Communication skills, linguistic abilities, communication skills in different languages	0.724481
2	2. Respect for cultural diversity	0.820015
	4. Openness towards other cultures, beliefs, worldviews, and customs	0.804075
	5. Respect	0.787560
3	13. Empathy	0.782121
	19. Knowledge and critical understanding of language styles in communication	0.725262
4	6. Civic consciousness	0.766050

We should note that in the group of female students the *first factor* included statements 1–3 and 5–6 of the *'practical skills'* factor in the Barrett questionnaire. The factor is identical to Barrett's theoretical model and empirical data, with the exception of item 4 of the questionnaire.

The *second factor* included statements 1–2 of the *'attitudes'* factor of the Barrett questionnaire, which relates to respect, recognition and openness to cultural diversity. In general, it can be defined as *'tolerance'*.

The *third factor* relates to the emotional and evaluative component of intercultural competence – empathy, understanding of communication and critical judgment. We treated it as *'empathy'*; it is included in the *'practical skills'* factor in the theoretical model of M. Barrett. However, within the framework of empirical research in the group of Russian female students of international relations, it was independently developed.

The *fourth factor* was designated as *'civic consciousness'*. It represents an independent factor in the analysis of empirical data in the Russian sample of female students of international relations

and is important in the group of respondents, reflecting their desire for a more complete civic identity.

Our findings enabled us to present a model of correlating the content of factors in the theoretical model of M. Barrett and empirical data in the group of female students of international relations (Fig. 1).

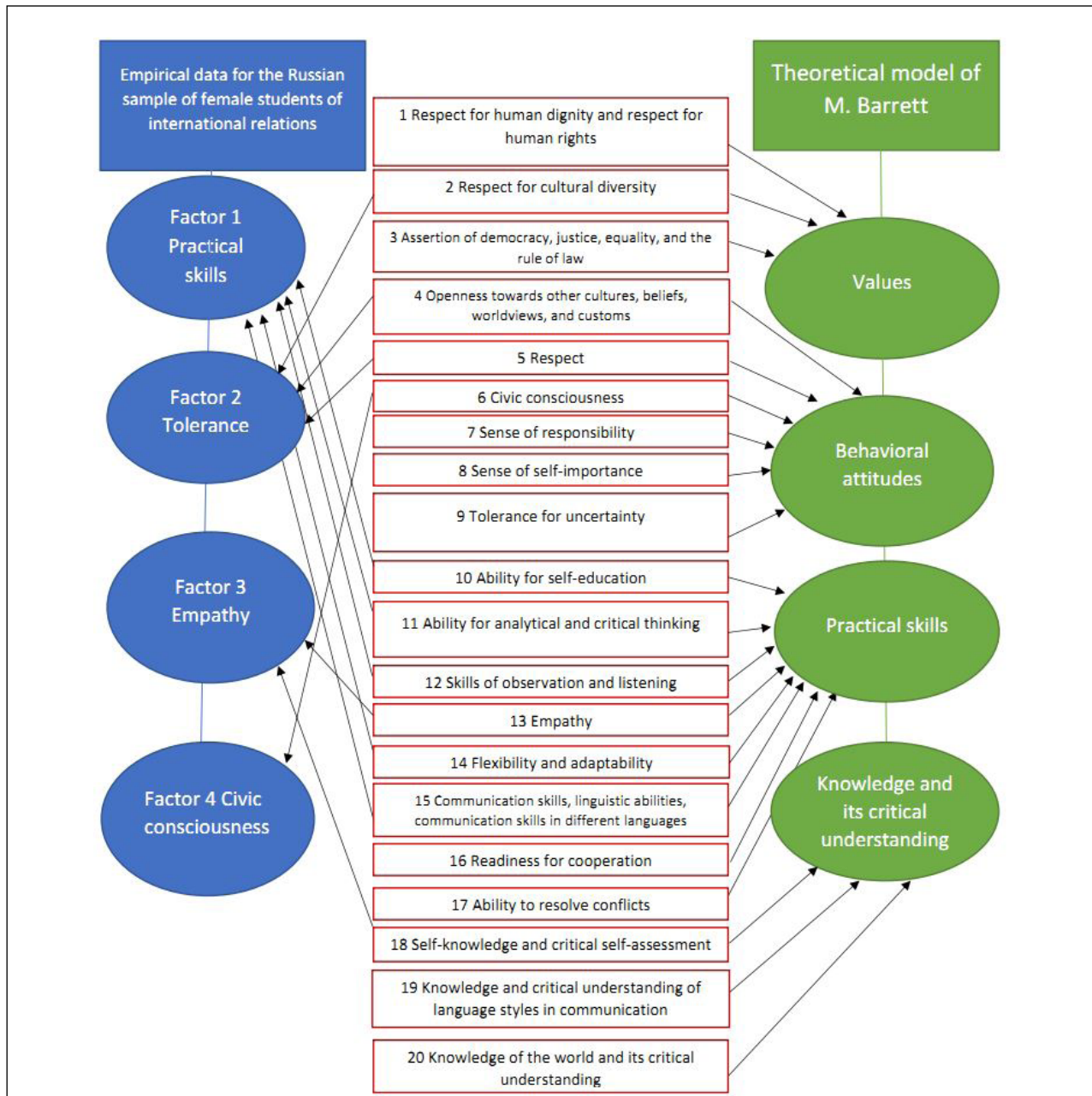


Figure 1. Correlation of the content of variables in the theoretical model and empirical data in the sample of Russian female students of international relations

Thus, factorization ranks for the group of Russian female students of international relations confirms hypothesis 1 of the study about differences between factor structures in the theoretical model of M. Barrett and empirical data due to the presence of their different component content with the same rank (4 factors).

The next stage was rank factorization in the group of male students of international relations. We identified four factors with a total explained variance of 71 %:

- factor 1 – ‘responsibility and respect’ (42 % of the total explained variance);
- factor 2 – ‘adaptability’ (11 % of the total explained variance);
- factor 3 – ‘empathy’ (9 % of the total explained variance);
- factor 4 – ‘tolerance’ (7 % of the total explained variance).

Similarly to the group of female students, the component composition of each factor differed from the theoretical model of M. Barrett and included from one to eight variables (statements of the questionnaire) with a significant factor loading (Table 2).

Factor	Variable (questionnaire statement)	Factor loading
1	1. Respect for human dignity and respect for human rights	0.715361
	2. Respect for cultural diversity	0.748787
	5. Respect	0.751309
	6. Civic awareness	0.829318
	7. Sense of responsibility	0.935726
	10. Ability for self-education	0.796722
	11. Ability for analytical and critical thinking	0.746110
17. Ability to resolve conflicts		0.739508
2	14. Flexibility and adaptability	0.742992
3	13. Empathy	0.876721
4	4. Openness in relation to other cultures, beliefs, worldviews, and customs	0.946386

The *first factor* demonstrated the most informative data. We designated this factor as ‘*responsibility and respect*’; it refers to respect, responsibility, human dignity, self-awareness, critical thinking, and ability to resolve conflicts.

The *second factor* contained statements relating to flexibility, adaptability, knowledge of the world, and critical judgment. This factor may be designated as ‘*adaptability*’.

The *third factor* may be termed as 'empathy'. This factor is formed as an independent one in both groups of students.

We designated the *fourth factor* as 'tolerance'.

Correlation of the components of factors in the theoretical model and empirical data shows differences in the content of the variables in the group of male students of international relations (Fig. 2).

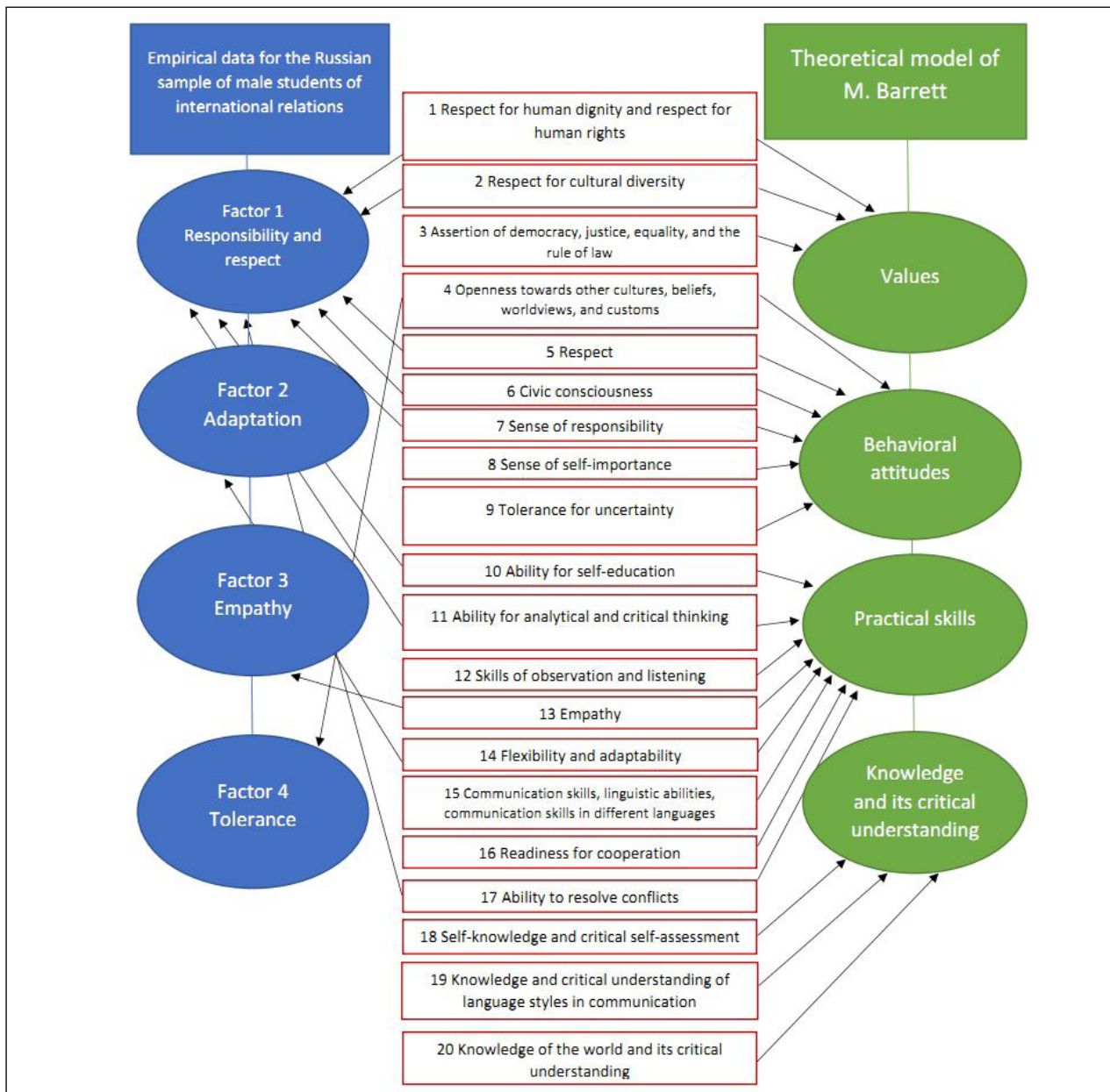


Figure 2. Correlation of the content of variables in the theoretical model and empirical data in the sample of Russian male students of international relations

In the group of male students, the factorization of empirical data helped identify four factors, which, in terms of meaning, do not coincide with the components of the theoretical model of intercultural competence (values, attitudes, practical skills, knowledge and its critical understanding). This confirms hypothesis 1 about the presence of differences in the factor structure of the M. Barrett theoretical model and empirical data in the group of male students of international relations.

The analysis of the assessment of intercultural competence according to M. Barrett's questionnaire helped to identify the following factors in the group of male students of international relations: *respect and responsibility, adaptability, empathy, and tolerance*. At the same time, the group of female students demonstrated a different structure of factors: *practical skills, tolerance, empathy, and civic consciousness*. With the general coincidence of the number of factors, there were differences in their content. In both groups, there were common factors – '*tolerance*' and '*empathy*', as well as 2 different factors. The data obtained from the study partially confirmed hypothesis 2 about the presence of differences in the factor structure of intercultural competence in the group of female and male students by two out of four factors.

Discussion

The comparison of the empirical data with the theoretical model of M. Barrett helped identify the main components of intercultural competence in the group of Russian male and female students of international relations aged 17–23 years.

When comparing the structures of the factors in the groups of male and female students, we should note their independent priority choice of statements that made up the content of '*empathy*' and '*tolerance*' factors. In our opinion, this result experimentally confirms the 'tendency for gender depolarization', which was mentioned in the theoretical part (Aivazova, 2017; Kletsina & Ioffe, 2017), and shows the general value and meaning basis of intercultural interaction among the respondents. However, the severity of this value and meaning basis for female and male students is different. With the same ability to empathize, female students turned out to be more competent in knowledge and critical understanding of language styles in communication (statement 19).

This conclusion confirms the importance of knowledge of foreign languages and cultural awareness as components of intercultural competence noted by other authors (Shevchenko, Bugrova, Cherniavskaya, & Kostikova, 2018), and clarifies the gender specificity of manifestations of this quality. Studies of the role of empathy in intercultural communication have been conducted earlier (Chen, 2013; Fedotova, Makhmutova, Kostikova, & Gugutsidze, 2018). However, this study considers the psychological phenomenon of empathy as a leading structural component of intercultural competence.

In the manifestations of tolerance, male and female students were found to be open to other cultures, beliefs, worldviews and customs (statement 4). Meanwhile, this factor was further strengthened by respect for cultural diversity (statement 2) and respect as a common behavioral attitude (statement 5) among female students. The obtained result is consistent with the position of other authors who consider tolerance, along with trust and sensitivity, as a component of intercultural communicative competence (Pochebut, 2013).

In our previous work we partly analyzed emotional, cognitive and behavioral manifestations of flexibility and adaptability of students as components of intercultural competence (Makhmutova, Kovtun, Kostikova, & Revkova, 2018). This study focuses on the gender aspect. The differences found in '*practical skills*' and '*civic consciousness*' in the group of female students, as well as in '*respect*

and responsibility' and *'adaptability*' in the group of male students, may indicate gender-specific grounds for intercultural interaction and, accordingly, different mechanisms for the formation of intercultural competence in female and male students.

The conducted research has confirmed that the formation of models of constructive interaction between representatives of different cultures requires pedagogical and methodological support. In a multicultural society, the most urgent is the development of curricula when students learn to use their mental qualities in constantly changing situations of intercultural interaction.

The acquisition of intercultural competences is important for personal and professional development, especially in professions related to humanitarian, political, economic international relations. This is a significant component of the professional world image of future specialists in international relations. Our research has shown that male and female students in international relations aged 17–23 years show semantic and instrumental diversity in terms of values, behavioral attitudes, practical skills and knowledge. In other words, correlating the statements of the M. Barrett questionnaire with their behavioral and ideological priorities, our respondents form gender-sensitive intercultural competence as the basis for the implementation of future professional activities in the field of international relations.

Despite the constructive message of the Council of Europe to develop and implement general mechanisms for the formation of intercultural competence as a part of the culture of democracy, we should recognize the existence of value-semantic specificity of these mechanisms. The results obtained in our study may be considered promising for further research of intercultural competence in the field of theoretical substantiation of the existence of systemic competences in the structure of intercultural competence and in practical diagnostics of characteristics of intercultural competence, which can be either an obstacle or a catalyst for intercultural interaction in the future professional activity of students of international relations.

Our results and conclusions draw attention to the importance of gender specificity for improving pedagogical methods for the development of intercultural competence in future specialists in international relations.

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Assessment of the COVID-19 Pandemic by Russian citizens With Various Levels of Hardiness

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Abstract

Introduction. The COVID-19 pandemic provides an opportunity to examine the impact of psychological characteristics on human adaptation under uncertainty. Hardiness, which is still controversial for its role in maintaining human mental, physical, and social health, is such a psychological characteristic.

Methods. To test the hypothesis that individuals with different levels of hardiness have different attitudes towards the current COVID-19 pandemic, the present study used the short version of the Hardiness Test by E. N. Osin and E. I. Rasskazova (based on the Personal Views Survey III-R by S. Maddi) and a special questionnaire to assess various aspects of the pandemic situation, including its characteristics and impact on various spheres of life, fears, and possibilities for coping (using a 11-point Likert scale). The study was conducted during self-isolation using the Google Form (N = 421; age 18–78 years, mean age = 40.3 ± 12.6 years; 81 % females).

Results. Most Russian citizens perceived the pandemic situation as a challenge to their capabilities. The high-risk group comprised 17 % of respondents, which indicates the need for targeted psychological assistance aimed at psychological education. High hardy individuals recognize the uncertainty and complexity of the pandemic situation, and consider it controllable. For the low hardiness group, this situation is highly uncertain, complex, unpredictable, and uncontrollable, affecting physical activity and the quality of social contacts. Besides fears for their loved ones, fear of the future is pronounced among respondents of this group.

Discussion. The findings from this study are in agreement with the idea of hardiness as the ability to withstand stressful situations, while maintaining internal balance without reducing performance in activities, which indicates the predictive value of this construct.

Keywords

COVID-19 pandemic, self-isolation, uncertainty situation, situation assessment, hardiness, fears, degree of impact, Russians citizens

Highlights

► Despite the fact that the COVID-19 pandemic and self-isolation represent a complex combination of stressors, characterized by uncertainty, complexity, and uncontrollability, most Russian

citizens perceive this situation as a challenge that opens up new opportunities. Meanwhile, the high-risk group comprised 17 % of those surveyed.

➤ In contrast to low hardy individuals, those with a high level of hardiness cope more effectively with the uncertainty situation; they assess their fears lower and their opportunities higher.

➤ Low hardy individuals assess the COVID-19 pandemic as an imminent threat. Besides fears for their loved ones, fear of the future is pronounced among respondents of this group.

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Introduction

Major epidemics have always been significant socio-cultural events for all countries. Re-emerging infections pose a great threat due to growing population mobility, overcrowding in cities, adverse environmental changes, etc. The new coronavirus (COVID-19), which has turned into a global pandemic, is characterized by suddenness and population-wide coverage.

Alarming reports in the media, restrictions in everyday life and activities, a high-uncertainty situation inevitably affect the psychological health of society. Not coincidentally, this year's publications show keen interest in the psychological consequences of the pandemic and concern about the psychological health of the population in various countries: Saudi Arabia (AlHumaid, Ali, & Farooq, 2020); Chile (Caqueo-Urizar et al., 2020); India (Iqbal & Dar, 2020); Spain (Rodríguez-Rey, Garrido-Hernansaiz, & Collado, 2020); Indonesia (Abdullah, 2020); Italy (Marazziti, Pozza, Di Giuseppe, & Conversano, 2020); Australia (Berger & Reupert, 2020); Vietnam (Nguyen & Vu, 2020); America (Fitzpatrick, Harris, & Drawve, 2020); Japan (Shigemura & Kurosawa, 2020); Russia (Boyko, Medvedeva, Enikolopov, Vorontsova, & Kazmina, 2020; Tkhostov & Rasskazova, 2020), etc. The COVID-19 pandemic represents a special case of cumulative risk that will have widespread impact in the long term (Estes & Thompson, 2020; Prime, Wade, & Browne, 2020; Rodríguez-Rey et al., 2020). The pandemic may affect the aggravation of personal and interpersonal crises (Miller, 2020), an increase in the number of suicides (Reger, Stanley, & Joiner, 2020), deterioration of health, behavioral disturbances (Faris, 2020), increased feelings of loneliness (Ng & Lee, 2019), and the emergence of PTSD (Boyras & Legros, 2020). In conditions of self-isolation, there is an increase in the number of cases of domestic violence (Campbell, 2020). The most vulnerable groups include the lonely ones, those living in cramped conditions (Prime et al., 2020), the elderly, persons with disabilities, medical, social workers, and women (Boyras & Legros, 2020).

Numerous studies emphasize negative consequences of the pandemic. However, it has been argued that this situation provides an opportunity for rebirth, restoration, revision of values, and renewal of priorities (El Maarouf, Belghazi, & El Maarouf, 2020). Successful coping requires maturity (Durodié, 2020), the ability to give meaning to unpredictable circumstances (Trzebiński, Cabański, & Czarnecka, 2020), social cohesion, and flexibility (Chen & Bonanno, 2020). Some

studies pay attention to individual and social hardiness as the ability to resist difficulties (PeConga et al., 2020) and discusses the experiences of Holocaust survivors in preparing older people for a pandemic despite their particular vulnerability (Cohn-Schwartz, Sagi, O'Rourke, & Bachner, 2020). An optimistic view has been expressed that long-term hardiness will be the most common outcome, even for those most affected by COVID-19 (Cohn-Schwartz et al., 2020). On the one hand, the experience of the pandemic as a threat leads to trauma and vulnerability, aggravation of crisis phenomena in societies; on the other, when it is perceived as a challenge, new opportunities open up, which poses the challenge for psychologists to comprehend the psychological characteristics that prevent and contribute to successful adjustment to the COVID-19 pandemic.

Hardiness is one of these characteristics, which is designated as a general feeling that the environment forces a person to approach stressful situations with curiosity, to regard them as significant, interesting (involvement), and changeable (control), as an opportunity for development (risk taking) (Maddi, 2005). The important point in this dispositional theory is that it considers not only hardiness but also its alternative characteristics, including alienation, passivity, helplessness, and catastrophization of what happens (Maddi, 2006). The attitudes of 'involvement', 'control', and 'risk taking' determine the personality style, which is associated with hardiness in general and high efficiency in a wide range of stressful situations (Maddi, 2005; Maddi, 2006). In this regard, COVID-19 becomes one of such stressful situations, characterized by uncertainty, unpredictability in the short and long term, uncontrollability (Trzebiński et al., 2020), traumaticity (Boyras & Legros, 2020), a complex combination of stressors (Chen & Bonanno, 2020), and multi-layered risk (Krause, Freiling, Beets, & Brossard, 2020).

The uniqueness of the COVID-19 situation creates an additional burden on the individual and social groups who can perceive and evaluate it in different ways, and who need hardiness to transform this threatening situation into a challenging one. It is hardiness that may be a psychological characteristic that contributes to the perception of the pandemic as a challenge. Studies have shown that hardiness is a buffer for PTSD symptoms in mothers of children with terminal illnesses (Stoppelbein, McRae, & Greening, 2017), mediates psychological well-being (Alfred, Hammer, & Good, 2014), and is a protective factor for loneliness and depression (Ng & Lee, 2019), prevents problem drinking (Kulak et al., 2020). Resilient individuals have a better quality of life, are more energetic, optimistic, and have fewer somatic complaints (Manning, Williams, & Wolfe, 1988). Hardiness has also been found to be positively associated with social support, activity, and efficiency (Eschleman, Bowling, & Alarcon, 2010). The combination of factors such as optimism, cognitive flexibility, active coping, a supportive social network, and concern for physical well-being contribute to individual hardiness and, accordingly, hardiness in society (Funk, 1992; Iacoviello & Charney, 2014). High hardy individuals tend to interpret stressful events as less difficult. Therefore, they are less likely to have a negative impact on health (Kobasa, 1979).

Thus, various studies have shown the specific characteristics of the COVID-19 situation and its special, mainly negative, impact on the population. To our knowledge, the present study appears to be first on COVID-19 assessments by Russian citizens with different levels of hardiness. This study will provide important information not only about the negative aspects of the impact of the pandemic, but also about the ability of Russian citizens to adapt to the current difficult situation. All of this may contribute to create psychological assistance programs aimed at changing negative assessments towards the search for new opportunities. Thus, this study aims to examine assessments of the COVID-19 situation by Russian citizens with different levels of hardiness.

Dryhurst et al. (2020) notes that not events themselves but rather the ways we perceive and evaluate them influence effective overcoming. Therefore, the assessment of this situation (its significance, level and complexity, stressfulness, etc.) and emotional attitude towards it (the level of severity of fears) may largely determine manifestations of hardiness. Therefore, we may assume that high hardy individuals will assess the COVID-19 situation as less stressful, that is, as a challenge situation, in contrast to those with a reduced level of hardiness, who perceive it as a threat.

Methods

Research Design

The study was conducted from April 11 to June 4, 2020 during the period of self-isolation. Most part of respondents was selected in April-May 2020. The respondents were asked to fill out a Google Form, a link to which was posted on the website of the Faculty of Distance Learning, Moscow State University of Psychology and Education, and social networks. The study was voluntary. After the completion of the survey, an invitation was posted via social networks and the faculty website to discuss the first results in a generalized form at a virtual roundtable, which was organized by the Department of Psychology and Pedagogy of Distance Learning, Faculty of Distance Learning, Moscow State University of Psychology and Education, on June 29, 2020.

Sample

The study involved 421 residents of Russia aged 18–78 years (mean age = 40.3 ± 12.6 years), including 340 females and 81 males from Moscow (N = 247), Moscow region (N = 73), and other cities of Russia (N = 101).

Research techniques

Respondents filled out a questionnaire form developed by authors to assess the following aspects of the COVID-19 situation using an 11-point Likert scale:

- 1) uncertainty, difficulty, importance, stressfulness, unpredictability, uncontrollability, and hopelessness;
- 2) degree of influence on various spheres of life (employment, salary level, level of physical activity, quality of relationships with loved ones, quality of social contacts);
- 3) severity of various fears (dying, getting sick, illness of loved ones and inability to help them, illness and death of loved ones, being left alone, being left without work, being left without means of subsistence, worsen relations with a partner);
- 4) individual resources to overcome (physical, psychological, intellectual, spiritual, temporal, creative, material, and social).

Additionally, we assessed the possibility to make the COVID-19 situation a source of useful experience (yes/no).

We used the short version of the Hardiness Test by E. N. Osin and E. I. Rasskazova (based on the Personal Views Survey III-R by S. Maddi) to analyze involvement, control, and risk taking in a situation of uncertainty and to identify groups with different levels of hardiness (Osin & Rasskazova, 2013).

Results

To distinguish groups with different levels of hardiness, we used k-means clustering method, in which all three scales of the Hardiness Test (*involvement*, *control*, and *risk taking*) and the overall

hardiness score were taken as clustering variables. Since the variables ranges differ, the data were preliminarily normalized, that is, transformed to such a form in which the mean for each variable is equal to zero, and the standard deviation is equal to one. As a result, we identified the groups of respondents with high (N = 169), average (N = 181), and low (N = 71) levels of hardiness. To compare groups with different levels of hardiness by assessments of various aspects of the COVID-19 situation (ordinal level Likert scales) we used the Kruskal–Wallis H-test; for qualitative indicators we used the Pearson chi-square test.

The statistical analysis showed that individuals with different levels of hardiness assessed the COVID-19 situation differently (Table 1). Low hardy individuals showed the highest scores in uncertainty, complexity, unpredictability, uncontrollability, significance, and stressfulness of the pandemic. The group of respondents with an average level of hardiness had high scores. High hardy individuals assessed only two characteristics – uncertainty and complexity. The hopelessness of the situation had the lowest scores in all three groups.

The groups with different levels of hardiness differed significantly in assessing the impact of the pandemic situation on employment, salary level, physical activity, quality of relationships with loved ones, and the quality of social contacts (Table 1). The assessments of the impact of the COVID-19 situation on these indicators were not as high as those of the situation of the pandemic itself. Here, the estimates range from 6.8 (for the degree of impact on physical activity among low hardy respondents) to 2.7 (for the degree of impact on the quality of relationships with loved ones among high hardy respondents). The assessment of the impact of the situation on physical activity comes to the fore in the hierarchy of assessments in three groups.

Situation characteristics	Hardiness			p. significance level
	High	Average	Low	
Uncertainty	6.7 ± 2.4	7.5 ± 2.0	7.9 ± 1.7	0.001
Difficulty	6.7 ± 2.4	7.5 ± 2.0	7.9 ± 1.7	< 0.001
Importance	4.8 ± 3.0	5.7 ± 2.6	6.5 ± 2.4	< 0.001
Stressfulness	3.4 ± 2.7	4.9 ± 2.7	6.3 ± 2.9	< 0.001
Unpredictability	5.6 ± 3.1	6.8 ± 2.4	7.1 ± 2.5	< 0.001
Uncontrollability	4.6 ± 3.2	6.5 ± 2.7	7.1 ± 2.8	< 0.001

Table 1

Assessments of the pandemic situation by individuals with different levels of hardiness
(mean ± standard deviation)

Situation characteristics	Hardiness			p, significance level
	High	Average	Low	
Hopelessness	3.1 ± 2.6	4.5 ± 2.4	5.5 ± 2.5	< 0.001
Impact on various spheres of life				
Labor employment	4.8 ± 3.7	6.1 ± 3.3	5.4 ± 3.8	0.005
Salary level	4.0 ± 3.9	5.2 ± 3.9	4.6 ± 4.1	0.018
Physical activity level	5.7 ± 3.6	6.8 ± 3.2	6.8 ± 3.3	0.005
Quality of relationships with loved ones	2.7 ± 2.9	3.7 ± 3.1	5.1 ± 2.9	0.001
Quality of social contacts	4.9 ± 3.3	5.4 ± 3.0	6.5 ± 2.9	0.002

We also observed statistically significant differences in the assessments of fears (Table 2). All three groups rated fears for loved ones the most, "My loved ones may get sick and I will not be able to help them" (from average rating of 5.5 in the high hardy group to high rating of 7.7 in the low hardy group).

Table 2

Assessments of fears by individuals with different levels of hardiness (mean ± standard deviation)

Fears	Hardiness			p, significance level
	High	Average	Low	
Dying	2.1 ± 2.5	2.9 ± 2.8	3.1 ± 2.09	0.001
Getting sick	2.8 ± 2.8	4.5 ± 2.7	4.5 ± 3.0	< 0.001
Illness of loved ones and inability to help them	5.5 ± 3.4	7.0 ± 2.8	7.7 ± 2.7	< 0.001

Table 2
Assessments of fears by individuals with different levels of hardiness (mean \pm standard deviation)

Fears	Hardiness			p, significance level
	High	Average	Low	
Illness and death of loved ones	5.1 \pm 3.6	6.7 \pm 3.0	6.8 \pm 3.1	< 0.001
Being left alone	2.4 \pm 3.2	3.7 \pm 3.3	4.8 \pm 3.5	< 0.001
Being left without work	3.0 \pm 3.2	4.4 \pm 3.2	4.6 \pm 4.0	< 0.001
Being left without means of subsistence	3.6 \pm 3.3	5.3 \pm 3.1	5.8 \pm 3.7	< 0.001
Worsen relations with a partner	1.6 \pm 2.5	2.2 \pm 2.6	2.9 \pm 3.0	0.002
Future	2.7 \pm 2.8	4.4 \pm 3.0	6.5 \pm 2.6	< 0.001

The fear that “my loved ones may get sick and die” ranks second in the hierarchy of fears and was rated at 5.1 in the high hardy group and 6.8 in the low hardy one. The degrees of these fears were high in the group with an average level of hardiness. In the hierarchy of fears the fear of the future ranks third in the group of low hardy individuals and is the last but one among high hardy individuals.

The analysis of answers to the question, “Can you consider the COVID-19 situation a source of useful experience?” showed that individuals with high and average levels of hardiness more often gave an affirmative answer, in contrast to low hardy respondents ($\chi^2 = 32.95$, at $p < 0.001$). Only 12.7 % of low hardy respondents recognized this experience (Table 3).

Table 3
Answers to the question, “Can you consider the COVID-19 situation a source of useful experience?” among individuals with different levels of hardiness

Hardiness	No	Yes
High	20.0 %	43.5 %
Average	38.3 %	43.8 %
Low	41.7 %	12.7 %

Thus, the assessments of the key aspects of the pandemic situation differ among respondents with different levels of hardiness. The lower the level hardiness is, the higher are assessments of its negative aspects. Moreover, low level of hardiness is associated with high level of fears, when individuals do not consider the COVID-19 situation a challenge that may become a source of useful experience.

To determine the resources that may contribute to a high level of hardiness, we compared groups with different levels of hardiness by the assessments of all resources. Russian citizens with different levels of hardiness assessed their own capabilities to overcome this situation also in different ways (Table 4). Spiritual and intellectual resources are leading in the hierarchy of resources in all the three groups. The lowest positions are occupied by physical and material resources, assessed as high and average by high hardy individuals, as average by individuals with an average level of hardiness, and as low by low hardy individuals. On the whole, compared to the group with low hardy respondents, individuals with a high level of hardiness assessed all the above possibilities significantly higher.

Table 4

Assessments of individual resources among individuals with different levels of hardiness (mean ± standard deviation)

<u>Resources</u>	<u>Hardiness</u>			<u>p, significance level</u>
	High	Average	Low	
Physical	6.8 ± 2.8	5.5 ± 2.8	4.4 ± 2.9	< 0.001
Psychological	7.9 ± 2.4	6.5 ± 2.5	5.1 ± 2.9	< 0.001
Intellectual	8.0 ± 2.2	6.9 ± 2.5	5.8 ± 2.8	< 0.001
Moral/spiritual	8.2 ± 2.3	7.0 ± 2.5	5.7 ± 2.7	< 0.001
Temporal	7.4 ± 2.6	6.2 ± 2.8	5.3 ± 2.8	< 0.001
Creative	7.5 ± 2.9	6.1 ± 2.9	4.7 ± 3.0	< 0.001
Material	5.9 ± 2.9	5.0 ± 2.9	3.9 ± 3.2	< 0.001
Social	6.9 ± 2.7	5.6 ± 2.6	4.7 ± 2.8	< 0.001

To determine the significance of the impact of resources on the level of hardiness, we used the univariate forecasting method for the 'low hardiness group' based on the decision tree root

node splitting according to the CHAID algorithm (Gruzdev, 2018). The statistical significance of the factor was determined using the Pearson chi-square test. All the factors were sorted in descending order of significance (chi-square statistic). The statistical analysis showed (Table 5) that all resources contribute to the level of hardiness. The most significant were moral/spiritual. Their reduced level (scores below 7 points) is characteristic only for 9.4 % of respondents with average and high levels of hardiness, and for more than a third (35.2 %) of low hardy respondents. Since the relative risk is the ratio of the risk of a certain event in individuals exposed to a risk factor in relation to the group without the influence of the factor, the relative risk = 3.76 indicates that a lack of moral/spiritual resources almost 4 times increases the risk of getting into a group with low hardiness. Decreased assessments of mental, creative, and intellectual resources almost 3 times increase the risk of getting into a group with low hardiness. Indeed, limitations in mental resources are inherent in 9.5 % of respondents from groups with average and high levels of hardiness and 30.4 % of respondents from the group of low hardy respondents. Limitations in creative resources are inherent in 8.0 % of respondents from the groups with average and high levels of hardiness and 26.9 % of low hardy respondents.

Table 5

Factors for getting into the 'low hardiness group' (assessments of absolute risks, risk change, and relative risk) in decreasing order of significance

<u>Resources</u>	<u>Frequency (risk %)</u>		<u>Relative risk (95 % confidence interval)</u>
	<u>Hardiness</u>		
	High & average	Low	
Moral/spiritual < 7.0	28 (9.4 %)	43 (35.2 %)	3.76 (2.46; 5.77)
Mental < 7.0	26 (9.5 %)	45 (30.4 %)	3.19 (2.06; 4.95)
Creative < 7.0	18 (8.0 %)	53 (26.9 %)	3.35 (2.03; 5.52)
Intellectual < 7.0	32 (10.9 %)	39 (30.5 %)	2.79 (1.84; 4.24)
Social < 5.0	38 (12.0 %)	33 (31.7 %)	2.65 (1.76; 3.99)
Temporal < 7.0	23 (9.8 %)	48 (25.8 %)	2.64 (1.67; 4.17)
Material < 3.0	45 (13.4 %)	26 (30.6 %)	2.28 (1.50; 3.48)
Physical < 6.0	26 (10.9 %)	45 (24.6 %)	2.25 (1.45; 3.50)

Material and physical resources turned out to be the least important; their lack doubles the risk of getting into a group with low level of hardiness. If we restrict ourselves and take into account only the lower limit of the confidence interval, then we may conclude that moral/spiritual, mental and creative resources are the most important, since their lack doubles the risk of getting into a group with low hardiness (2.03 to 2.46 times).

Discussion

The life experience contributes to assessing the situation of uncertainty. The COVID-19 situation is a striking example of such a situation, which makes us rethink our past, present, and future. The coronavirus pandemic provides a good opportunity for rethinking the experience of Russian citizens with different levels of hardiness and an opportunity to share this experience. The identification of groups with different levels of hardiness has led to a deeper understanding of this situation and its clarifying on the basis of assessments of respondents themselves. The respondents of all three groups unequivocally indicated that the situation of the pandemic is uncertain and rather complex, affecting physical activity under conditions of forced self-isolation. Russian citizens fear for their loved ones the most. However, they are confident in their spiritual resources, which are in the first place in the hierarchy of designated resources.

This study showed that the majority of Russian citizens belong to the groups with high and average levels of hardiness – 40 % and 43 %, respectively. The risk group comprises 17 % of respondents. High hardy individuals are not inclined to assess the COVID-19 situation as catastrophic. They recognize that it is ambiguous, difficult, but controlled. High hardy individuals highly rated their own capabilities: intellectual, spiritual, psychological, creative, physical, social, and material. They believe that the COVID-19 situation may be a source of useful experience.

Respondents from the group with an average level of hardiness are interested in what is happening, motivated, and enjoy their activities. They assess this situation as uncertain, complex, unpredictable, uncontrollable, affecting physical activity and employment. However, this situation is not hopeless for them. Individuals from this group are concerned only with fears for their loved ones; they highly assessed their spiritual, intellectual, and psychological capabilities.

For low hardy respondents, the COVID-19 situation turned out to be highly uncertain, complex, unpredictable, important enough and uncontrollable, affecting not only physical activity, but also the quality of social contacts. In addition to fears for their loved ones, individuals from this group fear the future. They are less confident in their capabilities, and many of them do not perceive the situation as an experience. However, this situation is not hopeless for them.

The results obtained in this study are in accordance with the concept of hardiness as an individual's ability to withstand stressful situations, while maintaining internal balance without reducing the performance in activities. This speaks in favour of the predictive value of this construct. The main limitation of this study is the insufficient size of a sample of male respondents. A comparative analysis of the assessments of the COVID-19 situation by representatives of different generations, with different levels of education and different social status seems promising.

Conclusions

The situation of the COVID-19 pandemic is a complex combination of stressors, which is characterized by uncertainty, complexity, unpredictability, uncontrollability, and importance that requires hardiness from individuals and social groups to transform a threat into a challenge.

When a pandemic is experienced as a threat, many crisis phenomena in societies are aggravated. Experiencing the COVID-19 as a challenge opens up new opportunities. Hardiness becomes a central psychological characteristics contributing to the perception of COVID-19 as a challenge.

Most Russian citizens perceived the pandemic as a challenge to their capabilities (spiritual, intellectual, psychological, creative, etc.). The risk group included 17 % of respondents who perceive this situation as a threat, fear for their future, do not accept it, assess their capabilities lower, more than others need social contacts, but do not consider the COVID-19 situation hopeless. It is this group that requires psychological assistance aimed at education (Aven & Boudier, 2020) and casework to change pessimistic assessments. In a pandemic, this is possible through open online events. From the very beginning of the pandemic a series of such events was implemented at the Moscow State University of Psychology and Education. Thus, the COVID-19 pandemic, as an unexpected event, became a test of hardiness for Russian citizens as the ability to successfully use internal and external resources to solve problems.

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