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ПСИХОЛОГИЯ ОБРАЗОВАНИЯ | EDUCATIONAL PSYCHOLOGY

Tolerance to Uncertainty and Superstition as Personal Resources for Solving Social Problems by Students

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The phenomena of tolerance/intolerance to uncertainty and belief in the paranormal as personal resources for solving social problems by students were examined. The relevance of the topic is due to an attempt to identify the necessary personal determinants that help to effectively cope with life difficulties in the face of the uncertainty and multitasking in the modern world. Hypotheses about the inverse correlation between tolerance to uncertainty and superstition, as well as the direct correlation between tolerance and a rational style and positive orientation, belief in the paranormal with a negative orientation, an avoidant and impulsive style of solving social problems have been put forward. The results of an empirical study conducted among university students studying at the social science, humanities and medical faculties are presented (N=252), aged 18 to 21 years. A set of diagnostic techniques was used: the questionnaire for solving social problems by M.M. Danina et al., the "Paranormal Belief Scale" by J. Tobacyk (adaptation by D.S. Grigoriev), the modified questionnaire of tolerance to uncertainty by S. Badner (adaptation by T.V. Kornilova, M.A. Chumakova). According to the results of the study, it was found that students have a low tendency towards superstition and more often use a rational style when solving social problems. They are also characterized by a predominantly positive problem orientation. The direct correlations of tolerance to uncertainty with a rational style and positive problem orientation, as well as negative connections with avoidant and impulsive styles, a negative problem orientation were found.

Keywords: personal resources; solving social problems; tolerance to uncertainty; superstition; students.

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Толерантность к неопределенности и суеверность как личностные ресурсы решения социальных проблем учащейся молодежью

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В статье рассматриваются феномены толерантности/интолерантности к неопределенности и веры в паранормальное как личностные ресурсы решения социальных проблем учащейся молодежью. Актуальность темы обусловлена попыткой выявить необходимые личностные детерминанты, помогающие эффективно справляться с жизненными затруднениями неопределенности и многозадачности современного мира. Были выдвинуты гипотезы об обратной связи толерантности к неопределенности и суеверности, а также прямых связях толерантности с рациональным стилем и позитивной ориентацией, веры в паранормальное с негативной ориентацией, избегающим и импульсивным стилем решения социальных проблем. Представлены результаты эмпирического исследования, проведенного среди студентов обучающихся на социально-гуманитарных и медицинских факультетах (N=252), в возрасте от 18 до 21 года. Применялся комплекс методик: опросник решения социальных проблем М.М. Даниной с соавт., «Шкала веры в паранормальное» Дж. Тобасика в адаптации Д.С. Григорьева, модифицированный опросник толерантности к неопределенности С. Баднера в адаптации Т.В. Корниловой, М.А. Чумаковой. По результатам исследования было установлено, что студенты обладают низкой склонностью к суеверности и чаще используют рациональный стиль при решении социальных проблем. Для них также характерна преимущественно позитивная проблемная ориентация. Обнаружены прямые взаимосвязи толерантности к неопределенности с рациональным стилем и позитивной проблемной ориентацией, а также отрицательные связи с избегающим и импульсивным стилями, негативной проблемной ориентацией.

Ключевые слова: личностные ресурсы; решение социальных проблем; толерантность к неопределенности; суеверность; студенты.

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Introduction

In today's ever-changing world of social instability, high demands are placed on a person's productive activity, which significantly increases the role of his or her personal resources that allow to successfully cope with the challenges of uncertainty and multitasking life and professional problems [16; 31]. Accordingly, future professional-students face the tasks not only to orient themselves in the norms and content of professional activity, but also to be able to constructively solve everyday social problems, thus preserving their working capacity, maintaining psychological well-being and positive meanings of their labor. Moreover, as one of the most active and mobile social groups, students constantly face different social problems, the specifics of orientation in which and the peculiarities of the used styles of solution can depend on their well-being, life satisfaction, the nature of activity, etc. [30; 32].

Solving social problems under conditions of uncertainty implies the presence of a number of personal resources that determine both the peculiarities of the representation of the problems themselves and the specifics of the process and ways of their solution, among which are tolerance to uncertainty (TU) and superstitiousness.

As a multidimensional construct, TU is regarded as one of the significant predictors of a person's readiness to tolerate uncertainty without discomfort and to keep openness to new experience and the ability to productive activity in ambiguous and contradictory situations [14; 37], which, according to D.A. Leontiev, allows it to be considered a condition and simultaneously an indicator of psychological maturity of a person [16]. Despite the fact that modern psychology still lacks a unified conceptualization of TU, most authors treat this psychological phenomenon as a personal characteristic. Thus, T.V. Kornilova considers tolerance to uncertainty as a personal construct and personal regulation of decision making [14]. A.G. Asmolov presents personal tolerance as "a mechanism for supporting and developing the diversity of systems ... in various unpredictable situations and their stability" [5].

Studies show that TU has a close relationship with different properties of intellectual and personal potential of a person [15], creative problem solving [39], well-being of students in the initial period of their study in higher education [27], internal locus of control, which is especially pronounced in girls [9]. It has also been repeatedly stated that TU is positively related to extraversion and openness to experience and, on the contrary, negatively related to neuroticism [33]. At the same time, some authors consider TU and the essentially opposite construct of intolerance to uncertainty (IU) as independent, relatively independent psychological formations [15]. Indirect evidence of this can be found in studies of the strong positive association of IU with neuroticism and negative association with extraversion and openness to experience [33].

In addition, studies by a number of authors allow us to define TU as a resource characteristic of personality. According to A.B. Rogozyan, personality resources include various traits, properties and attitudes that influence the regulation of behavior in tense and ambiguous situations [21]. A.N. Mospan interprets TU as a psychological resource of a personality for overcoming the challenges of uncertainty [18]. N.G. Kapustina also presents tolerance as a system of internal resources of the

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personality, reflecting the readiness and ability of the individual to effectively solve the tasks of interaction with themselves and other people, forming resistance to negative environmental factors [13]. The resource component of TU consists in building a positive perspective of the future [19], the ability to cope with difficult problems, maintaining adaptive potential, constructive strategies for coping with difficult life situations [34]. At the same time, coping behavior itself is considered to be a phenomenon close to social problem solving, which, in particular, is evidenced by the existence of links between problem orientations and styles of social problem solving and coping strategies [12; 29], although it is incorrect to reduce one to the other, since social problem solving characterizes precisely the process of choosing and using strategies for coping with ambiguous problematic social situations (defining the problem, thinking about possible options for its solution, choosing and making a decision, implementing the decision) [30].

One of the forms of interaction with reality and overcoming uncertainty, especially in the case of limited possibilities of control over the situation, is superstition [1; 4], which is considered a special way of life activity, inherent even in educated people, including young people [6; 26]. Specialists consider superstitions as a peculiar form of psychological defense, a mechanism of adaptation to a traumatic situation and include among the possible coping strategies derived from superstitions magical and ritual actions, which are an important marker of human superstitiousness [23, 28]. Superstitiousness, i.e., belief in the paranormal, as an attempt to confront a problematic situation can give a person the opportunity to realize a positive rethinking of what is happening and the illusion of control over the future [2; 35; 38], thus supporting his psychological well-being and adaptive abilities, which allows us to consider superstitiousness as a personal resource, partially relevant to TU. However, according to M. Yu. Saenko, superstitiousness is one of the markers of anxiety and acts as a serious obstacle to personal growth of a person, a demotivator and demobilizer of his resources [24], while TU, on the contrary, supports activity, self-confidence and autonomy of the individual, its creative motivation and productive activity [37; 39]. In addition, unlike TU, superstitiousness is positively correlated with neuroticism and fear of new situations [3], which partially brings it closer to IU.

Superstitiousness has been found to be strongly positively correlated with a number of other coping behaviors, including social support seeking, denial and problem avoidance, as well as with external religiosity [4], and, on the contrary, negatively correlated with the level of general intelligence [17]. At the same time, there is some evidence that superstition is related to the main aspects of social problem solving. Thus, T.J. D'Zurilla and E.C. Chang found a negative association of superstitions with negative problem orientation, impulsive and avoidant styles of social problem solving and, on the contrary, a positive association with positive problem orientation [29]. However, these data do not agree with the negative role of superstition in adaptation to new conditions, in the manifestation of prosocial activity of personality, including as a demotivator, as well as superstition itself in distorting the perception of real reality, which, accordingly, prevents rational problem solving [2; 10; 24].

The revealed contradictions acted as a heuristic idea for our research, the purpose of which was to study the specifics of the relationship between solving social problems with tolerance to uncertainty and belief in the paranormal in student youth.

The study tested the following hypotheses:

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- 1. Tolerance to uncertainty and superstitiousness as personal resources of solving social problems have a negative relationship, and intolerance to uncertainty is directly related to superstitiousness in young people.
- 2. Tolerance to uncertainty is positively related to positive problem orientation and rational style of problem solving in students' youth.
- 3. Students with high levels of belief in the paranormal have predominantly negative problem orientation and tend to have impulsive and avoidant problem-solving styles.

Sampling and Methods

Study sample. The study involved 252 students of 1-3 years of higher education in Moscow and Nizhny Novgorod, studying at the faculties of social and humanitarian (44%) and medical (56%) profiles, aged 18 to 21 years (M=18.9; SD=0.50), 70% female.

An additional comparative analysis of the results obtained by gender of respondents and profile of study was not conducted in the study, as no significant differences were found in this regard.

Research Methods. The study was conducted in an online format. Participation was voluntary and anonymous.

Data collection was carried out using the social problem-solving questionnaire by M.M. Danina, N.V. Kiselnikova, E.A. Kuminskaya [12], in which statements are evaluated on a 5-point scale: from 0 - "completely wrong" to 4 - "completely true". In total, the methodology includes 5 scales, each of which corresponds to the main components of T.J. D'Zurilla's model of social problem solving: positive, positive, positive, positive, and positive. D'Zurilla: positive problem orientation (perception of the problem as a specific task that can and should be solved, not avoided, presence of optimism and confidence in one's abilities), negative problem orientation (perception of the problem as a threat, presence of frustration and uncertainty in one's abilities), rational style of problem solving (emphasis on collecting and analyzing information about the problem, conditions and possible variants of its solution, including analysis of the results obtained), impulsive-secure style of problem solving (rashness of ideas and consequences of their implementation,

The degree of expression of superstitiousness was measured using the "Paranormal Belief Scale" by J. Tobacyk in the adaptation of D.S. Grigoriev [11]. This technique contains 7 subscales: traditional faith, psy abilities (e.g., telekinesis or levitation), witchcraft, superstition, spiritualism, extraordinary forms of life (e.g., the existence of Bigfoot), and predictions (of astrologers, psychics, and other people). Respondents were evaluated on a 7-point scale, where 1 - absolutely disagree and 7 - absolutely agree with the statement.

We also used a modified version of S. Badner's tolerance to uncertainty method adapted by T.V. Kornilova and M.A. Chumakova [15], which includes two scales: intolerance to uncertainty and tolerance to uncertainty. The statements are evaluated on a 7-point scale: from 1 - strongly disagree to 7 - absolutely agree.

Descriptive statistics, correlations between variables were calculated using the statistical package SPSS 26.0. Kolmogorov-Smirnov test and Spearman's coefficient were applied during statistical analysis.

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Results

In the study, it was found that all scales of belief in the paranormal had results below the mean normative values. Based on the standardized data of the methodology they should be within the limits of 3.5 to 4 points, but only for "traditional faith" the average level was established, for the rest of the scales the indicators do not reach even 3 points out of 7 possible (Table 1). In particular, students do not believe in superpowers and have a low degree of superstitiousness. At the same time, the indicators of 1st and 3rd year students differ only in two parameters: 3rd year students believe more in witchcraft (M3=3.4 and M1=2.7, differences at the p<0.01 level) and extraordinary abilities (M3=3.3 and M1=2.7, differences at the p<0.01 level). However, even they do not reach the mean normative values of the scales of belief in witchcraft (M=4.38) and extraordinary ability (M=3.5) [10]. Thus, it can be stated that student youth are less and less oriented towards irrational forms of thinking compared to their peers 10-20 years ago [4; 22; 25], which partially agrees with modern data of sociological studies [6].

Table 1

Descriptive Statistics of the Indicators of Belief in the Paranormal, Tolerance/Intolerance to

Uncertainty, and Styles of Social Problem Solving in Students Youth

Scales		minimum	maximum	mean	stand. dev.
		Min	Max	M	Sd
	Traditional religious faith	1,0	7,0	3,91	1,70
E 56	Psy abilities	1,0	6,8	2,26	1,35
Belief in the paranormal	Witchcraft	1,0	7,0	2,77	1,72
	Superstition	1,0	7,0	2,14	1,37
	Spiritualism	1,0	7,0	2,88	1,64
	Extraordinary forms of life	1,0	7,0	2,78	1,20
	Predictions	1,0	6,8	2,75	1,53
Intolerance to uncertainty		15	49	31,04	6,25
Tolerance to uncertainty		13	42	27,56	4,72
Social problem solving	Rational style	4	32	21,58	5,48
	Avoidant style	0	28	8,78	5,93
	Impulsive style	0	36	11,29	6,38
	Negative problem orientation	0	36	14,42	8,27
	Positive problem orientation	2	16	11,04	2,83

It was also found that students have slightly higher IU and slightly lower TU than the average level, which indicates that they tend to worry more than to act confidently in ambiguous situations. In comparison with the normative indicators of the methodology for respondents under 30 years of age, this is also clearly traceable: thus, the values for IU were higher by 5.3 points, and for TU - lower by 4 points [15]. At the same time, no differences between the courses were found.

Regarding the solution of social problems, the results showed that students have higher indicators of using the rational style (average level on the scale) than the impulsive and avoidant style (low

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degree of expression on the scales). In particular, freshmen are inclined to this style (M1=21.9 and M3=18.4 at p<0.01). In addition, positive problem orientation turned out to be more pronounced among all students (the indicator is higher than the average normative one). In other words, it can be stated that the majority of students try to understand the social problems arising before them, analyze the ways of their solution, forecast possible consequences and monitor the results of the decisions made. Much less often students put off solving problems for later or take rash steps. At the same time, students mostly believe in their ability to cope with problems with a positive outcome. Negative orientation in problem solving is at an average level, i.e. sometimes young people may experience frustration when facing difficulties, but this is not their leading coping strategy.

In connection with the purpose of the study, we were identifying the existence of links between personal resources and social problem-solving styles. The Kolmogorov-Smirnov test was used to test for normality of distribution, the result of which showed the necessity of non-parametric methods of statistical data processing (for the IU scale p<0.01, for the other scales p<0.001).

According to the results of statistical analysis, it was found that our first hypothesis was partially confirmed, because a direct significant relationship between superstitiousness and IU was indeed found (rS=0.17 at p<0.01), but the negative relationship between superstitiousness and TU was only at the level of tendency and did not reach the necessary threshold of significance (rS=-0.10 at p=0.14).

Further, the correlations between each personal resource of students and features of solving social problems by them were analyzed (Table 2).

Table 2 Correlations of Indicators of Belief in the Paranormal and Tolerance to Uncertainty with Students' Styles of Solving Social Problems (according to Spearman, N=252)

Personal Resources	Solving Social Problems						
(belief in the paranormal and tolerance/intolerance)	Rational	Avoidant	Impulsive	Negative PO	Positive PO		
traditional faith	-0,07	0,01	0,09	0,07	0,12		
psy abilities	-0,16**	0,14*	0,26***	0,14*	-0,14		
witchcraft	-0,11	0,14*	0,19**	0,10	0,11		
superstition	-0,18**	0,19**	0,25***	0,22***	-0,05		
spiritualism	-0,10	0,14*	0,22***	0,11	-0,10		
extraordinary forms of living	-0,10	0,11	0,10	0,06	-0,03		
predictions	-0,15*	0,12	0,21**	0,10	0,04		
intolerance	0,03	0,08	0,10	0,10	0,01		
tolerance	0,19**	0,01	-0,06	-0,07	0,20**		

Symbols. * - correlation significance at the level of p<0.02, ** - at the level of p<0.01, *** - at the level of p<0.001.

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Positive correlations between TU and rational problem-solving style and positive problem orientation were found in students (p<0.01). Thus, the second hypothesis was fully confirmed. At the same time, curiously, no correlations with IU were found for any of the problem-solving strategies.

With different indicators of belief in the paranormal, rather interesting connections with styles of social problem solving were found. Thus, the links between belief in psy abilities, witchcraft, spiritualism, predictions, and superstitiousness with avoidant and impulsive problem-solving styles were significant (only correlations at a level no lower than p<0.02 were considered with correction for multiple comparisons). In addition, negative problem orientation was directly related to superstitiousness (p<0.001) and belief in superpowers (p<0.02). Notably, positive orientation has no significant relationships with belief in the supernatural, with negative relationships recorded between rational style and belief in superpowers, prediction and superstition. Thus, the third hypothesis of the study is partially confirmed: really high values of some manifestations of belief in the paranormal increase the propensity to avoid or impulsively solve problems, and are also associated with negative problem orientation.

Discussion of the Results

First of all, we would like to dwell on the problem of superstitiousness of students. According to the data obtained, it is generally low, although earlier it was noted that belief in the paranormal is quite widespread among students. However, many previous studies have studied superstitions associated mainly with the period of examination sessions [22; 25], while we studied belief in the paranormal outside this context. As stated by O.P. Makushina, most students appeal to supernatural forces mainly during the preparation and passing of exams, but in other life situations they usually do not turn to magical practices [17]. It is during the period of upcoming tests that superstitions begin to play a special role in the life of students [25]. In addition, public opinion polls of Russians also indicate a trend of decreasing propensity to superstition from 2015 to 2022 [cited in: 6], so it is possible that our study reflects the same trend.

According to TU/IU indicators, the obtained results also do not correspond to the data obtained earlier [15]. Thus, T.V. Kornilova and M.A. Chumakova provide normative values for these scales, showing that at the age of up to 30 years TU values slightly exceed IU values, while higher IU values are characteristic of respondents older than 30 years. In this regard, our results may be due to the gender of the respondents, among whom girls significantly predominate, since more pronounced TU is usually demonstrated by male respondents [8; 20]. However, in general, the issue of gender specificity of TU and IU still remains open, as there are other facts [9], which are also stated in the study by T.V. Kornilova and M.A. Chumakova [15]. We believe that special studies are required to clarify this issue. At the same time, if we take into account the results of recent studies [8] that among students IU prevails over TU, our data can illustrate general trends regarding TU of modern Russian students in conditions of social instability.

Interestingly, despite the existence of various, but rather contradictory data in modern psychology regarding the nature of the correlation between superstitiousness and TU/IU and various personality variables [24; 33; 37; 39, etc.], the question of the specifics of the relationship between superstitiousness itself and TU/IU still remains open. According to our study, it is students who are intolerant of uncertainty who are more superstitious. In other words, superstitiousness and IU are copresent and support each other. However, the negative relationship between superstitiousness and TU

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was not confirmed in the study, which means that the presence of TU is not always an "antidote" for irrational thinking and behavior. We believe that these data once again emphasize the fact that TU and IU are mostly independent and relatively independent psychological formations.

The presence of higher indicators of the rational style of problem solving than of the impulsive and avoiding style can be explained by the fact that modern youth prefers to lead a socially active and multitasking lifestyle. Therefore, it is difficult to count on success and efficiency in multitasking without a rational way that allows to analyze the current state of affairs and to correlate external challenges of the environment with one's resources. In our opinion, this is an indicator of psychological well-being of the majority of students, their ability to constructively overcome difficulties, because, as it was established earlier, the rational style of problem solving is positively related to life satisfaction [30]. It can be confirmed by the fact that positive problem orientation prevails among students, which is also found to be positively related to life satisfaction.

Turning to the correlations between the main aspects of problem solving and TU/IU identified in the study, it can be noted that some of them refute the previously obtained data. In particular, we are talking about the positive correlation of negative problem orientation with superstition, whereas earlier T.J. D'Zurilla et al. stated a negative relationship in this respect [29]. In contrast to the data of T.J. D'Zurilla et al. also draw attention to the presence of many positive links between avoidant and especially impulsive styles of problem solving with different manifestations of students' superstitiousness. It turns out that belief in witchcraft, spiritualism, psy abilities, predictions and superstitions leads to non-constructive ways of stress reduction, passive and dysfunctional behavior. Moreover, the rational style of problem solving is also hindered by belief in the paranormal, which is quite natural, since irrational attitudes and behaviors cannot promote deep analysis of problems and, on the contrary, generate passivity and uncritical thinking.

The absence of significant links between IU and the main aspects of social problem solving is unusual. However, we do not exclude that these results may be due to the predominance of female respondents. As for the positive correlation of TU with positive problem orientation and rational style, the explanation we can offer for understanding these links is as follows: it is the readiness of the individual to face challenges of different degrees of complexity, reflecting the essence of TU, that allows one to accept a problem as a challenge, keeping faith in one's ability to cope with it and effectively search for ways to solve it, envisioning existing options and predicting potential results.

Findings

Based on the results obtained, the following conclusions were made:

- 1. The majority of students of socio-humanitarian and medical faculties of higher education institutions use a rational style and are positively oriented to the solution of social problems. At the same time, their personal problem-solving resources are expressed differently: somewhat higher IU, on the average level TU and weakly manifested tendency to believe in the paranormal, especially in superstition and psy abilities.
- 2. Students' superstitiousness is directly related to IU, i.e. when anxiety increases in ambiguous situations, they tend to turn to magical actions based on superstitious prejudices.

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- 3. TU, manifested in the ability to calmly perceive discomforting conditions and seek adequate ways to overcome difficulties, is directly related to positive orientation to problem solving, which determines the use of rational style as the most effective behavioral strategy.
- 4. Impulsive and avoidant styles of decision-making are supported by superstitiousness, belief in psy abilities, witchcraft and spiritualism. At the same time, superstitious students are most often negatively oriented towards solving social problems.

Conclusion

Modern students living in conditions of social instability, uncertainty and multitasking are often faced with the need to solve different kinds of life issues. Effective problem solving in these kinds of situations is facilitated by the presence of a number of personal resources, among which, as our study has shown, TU and the absence or weak expression of the tendency to believe in the paranormal. Only readiness to accept the unknown, lack of discomfort from the ambiguity of what is happening and at the same time low orientation to superstitious ideas allow students to "keep their hand on the pulse" and be ready to make balanced constructive decisions with different options.

However, since our study involved predominantly girls, we define the study of gender specificity of personal resources for solving social problems as a possible perspective for the further development of the indicated problem.

In addition, we believe that the number of such personal resources is not exhausted by TU and non-confidence, so the identification of new psychological determinants of effective social problem solving can become the subject of further research, including those carried out in the gender and age dimension.

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