Resilience, styles of self-regulation of behavior as a personal resource in ensuring psychological security

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Abstract. In order to investigate the resilience, and styles of self-regulation of behavior as a personal resource in ensuring the psychological safety of future specialists in the transport industry, a pilot study was conducted with the participation of 60 people. The survey included: 1—the methodology of "Diagnostics of S. Muddy's resilience"; 2—the test of "Life orientations" by D. Krambo and L. Makhok in the adaptation of D. A. Leontiev; 3—the questionnaire "Style of self-regulation of behavior" by V. I. Morosanova. The study found that resilience is a basic component of the psychological security of the personality of future specialists in the transport industry and ensures their psychological well-being. The analysis of the results revealed significant differences in resilience, value-semantic sphere, and styles of self-regulation of behavior among students of departmental and civil universities. According to the results of correlation analysis in the studied samples of students and cadets, significant connections between the studied phenomena were established. Based on the conducted research, it can be argued that situations of adverse effects of various factors of the external and internal environment on a person contribute to the formation and development of resilience, which directly affects the regulatory processes of the body. Resilience, life-meaning orientations, and styles of self-regulation of behavior determine social behavior and are the basic components of the level of psychological security of future specialists in the transport industry. Keywords: Resilience, styles of self-regulation, life-meaning orientations, psychological security, personal resources, specialists of the transport industry.

1 Introduction

The interest in the study of resource capabilities of a person has not lost its relevance for many years, including in psychology, philosophy, sociology, neurobiology, etc. [1, 2]. The relevance of the research is caused by the influence of a large number of stressogenic influences on the human body leading to violation of the physical and mental health of an individual [3, 4, 5]. The special significance is gained by the research of constructs providing psychological safety of students in the university, considering that in the modern system of

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education one of the main strategic tasks is to create conditions of a safe educational environment, providing development of personal potential [1].

To improve the quality of training of future specialists in the transport industry, the activities of psychological support of students at the university should be aimed at the study of personal qualities that affect the preservation of coping under stressful conditions, value-semantic sphere, self-regulation features that are the basic components of personal safety [6, 7, 8, 9].

According to many researchers, psychological safety is defined as resistance to psychodramatic influences while maintaining the internal balance of the individual without compromising the success of the activity and contributing to the development of human life [10, 11, 12, 13].

Among the constructs providing psychological safety associated with overcoming difficult life situations, depending on the personal and volitional characteristics, its value and semantic sphere can include the phenomenon of resilience [2, 14]. The study of this phenomenon in modern studies is presented widely enough, but there are different interpretations associated with the conceptual apparatus, methodological approaches, genesis, mechanisms to maintain resilience, the relationship with the personal and volitional characteristics, his value, and the semantic sphere [2, 14].

The scientific works of B.G. Ananyev, S.L. Rubinstein, D.A. Leontiev [2,14], and others are devoted to the study of this problem. A. Leontiev [2,14] and others. According to S. Muddy, resilience is "one of the ways to overcome anxiety associated with thinking or making a decision in favor of the future" [2,14]. D.A. Leontiev evaluates the phenomenon of resilience in the context of the concept of individual capabilities and defines this phenomenon as a unified property of a personality responsible for the result in the mastery of different topical problems by a personality [2,14]. The interpretation proposed by L. Alexandrova of resilience includes "an individual's ability to modify the negative factors of his or her own development" [2,14]. [2,14]. D.A. Leontiev views value orientations as a whole concept of the basic values and thoughts that reflect the attitudes of a person.

Along with resilience, an important factor that sets the direction of a person's ability to define goals and exercise self-control is the value and semantic sphere of a person. Among the main theoretical approaches to the study of value orientations as a key element in the structure of personality, can include the scientific works of D.A. Leontiev, G. Allport, and others. [6]. D. A. Leontiev views value orientations as a whole concept of the basic values and thoughts that reflect the attitudes of a person.

The works of O.A. Kozhevnikova, A.P. Kozhevina, E.P. Zimina, and S.N. Sorokoumova can be referred to as modern studies of the sense-life orientations. Kozhevnikova, A. P. Kozhevina, E. V. Zimina, S. N. Sorokoumova [6]. These works are devoted to the problem of the formation of sense-life orientations at various orientations of the personality, and the connection of this phenomenon with mental states.

Resilience and sense-life orientations, according to many researchers, determine social behavior and are closely related to a person's self-regulation styles. A sufficient number of works in foreign and domestic psychology are devoted to the study of an individual's self-regulation [15,16]. Conscious self-regulation of an individual in the context of O.A. Konopkin's structural-functional approach implies that this process is organized on a systemic level. According to V.I. Morosanova, conscious self-regulation includes a system of obligatory structural-functional and substantial characteristics for regulation of each activity in the system of its style developed by the person in the process of life activity [15,16]. R.I. Florova and O.V. Baiguzhina in their research consider features of the manifestation of self-regulation of behavior in students with various levels of victimhood [15].

To the abovementioned study of resilience, sense-life orientations and self-regulation styles of behavior are especially relevant in modern conditions, due to the influence of
numerous stress factors on the person. The studied psychological phenomena are connected with personal resources and can determine the level of psychological safety of students in higher education institutions, in this connection, the study of this subject of research caused a special interest and served as the purpose of the study.

2 Materials and methods

The purpose of the study was to investigate the resilience, sense-life orientations, and self-regulation styles of civil and departmental university students.

The study hypothesized that there are differences between the indicators of the scales of resilience, sense-life orientations, and self-regulation styles in students and cadets. The structure of connections of scales of life-resilience, sense-life orientations, and styles of self-regulation of behavior in students and cadets have their features.

Inclusion in the study of the group of cadets due to the need for a comparative analysis of resilience, sense-life orientations, and self-regulation styles of behavior as a personal resource in psychological safety, who undergo professional psychological selection and training for extreme conditions of activity and students who have no such training.

The pilot study involved 60 people, including 30 cadets of St. Petersburg UGPS EMERCOM of Russia (hereinafter-cadets) and 30 students of St. Petersburg State University of Railway Transport Emperor Alexander I (hereinafter-students) 3 courses, young men aged from 18 to 20 years old.

The following methods were used to study resilience, meaning-life orientations, and behavioral self-regulation styles: S. Muddy's Resilience Diagnostic Method; D. Crumbo and L. Maholik's Meaning-Like Orientations Test adapted by D. A. Leontiev; V. I. Morosanova's Self-Regulation Behavioral Style Questionnaire.

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3 Results

In a comparative analysis of the study of resilience, sense-life orientations, and self-regulation styles in students and cadets only significant differences were considered. The results are graphically presented in the table.

Table 1. Significant differences according to the results of the analysis of the indicators of resilience, sense-life orientations, and self-regulation styles of behavior among students of civil and departmental higher educational institutions. Note: * \( p \leq 0.05 \); ** \( p \leq 0.01 \).

<table>
<thead>
<tr>
<th>Name of scales</th>
<th>Cadets. Points ( M \pm \sigma )</th>
<th>Students. Scores ( M \pm \sigma )</th>
<th>Student t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life performance or satisfaction with self-actualization</td>
<td>29.1 ± 4.81</td>
<td>24.05 ± 5.69</td>
<td>-3.03**</td>
</tr>
<tr>
<td>Locus of control-I</td>
<td>23.5 ± 4.57</td>
<td>20 ± 4.99</td>
<td>-2.33*</td>
</tr>
<tr>
<td>S. Muddy's Resilience Diagnostic Methodology</td>
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In the studied groups of respondents, significant differences were revealed on the scale "Life performance" on the test "Meaningful life orientations" by D. A. Leontiev. Based on the obtained data, we can conclude that students have a less expressed feeling of satisfaction, productivity, and meaningfulness in the past segment of life, with p ≤ 0.01.

Significantly lower scores on the Locus of Control-Self scale among students may mean the following, that they express some doubts about their ability to manage their lives by their goals and objectives, p ≤ 0.05.

Significant differences were found in the samples under study according to the method of "S. Muddy's Resilience Diagnostic" by the indicators of the scales "Involvement" and "Control". Analysis showed significantly higher scores on the "Engagement" scale for cadets, which was 41.65 ± 8.31 with p ≤ 0.01. Cadets are more involved in their activities and enjoy it as opposed to students. Representation of oneself as a person capable of influencing the outcome of significant events while demonstrating an active life position and independence is more characteristic of cadets, given the significantly higher scores on the scale "Control", at p ≤ 0.05. In this connection, it is possible to assert that cadets have a higher level of vitality, and personal resources and testifies to the optimum functioning of an organism of trainees. A significantly higher number of persons among the trainees with a good level of resource capabilities is due to the passage of professional psychological selection when entering a departmental university.

The comparative analysis of the results of the questionnaire "Self-regulation style" by V. I. Morosanova revealed reliable differences on the scales "Planning" and "Programming", with p ≤ 0.01. Based on the data obtained, the following conclusion can be made that departmental university students are characterized to a greater extent by the ability to consciously plan their activities and detail in the implementation of plans.

At the correlation analysis of results of research in the group of students, a greater quantity of communications on all techniques has been established. The positive connection between the indicators of the scales "Goals in life" and "Modeling" of the questionnaire "Self-regulation style of behavior" (r = 0.60; p ≤ 0.01) was revealed. These results may mean the following, the higher the purposefulness in students, the more they can allocate meaningful conditions for achieving goals. The obtained results are visually presented in Figure 1.

The positive correlation between the scores of the "Life Process" scale of the "Meaningful Life Orientations" test and the "Risk Acceptance" scale of the "Vitality Diagnostic" technique (r = 0.43; p ≤ 0.05) in the student sample can mean the following, the more satisfied students are with their lives, the more often they are willing to take risks and actively acquire new knowledge.

When analyzing the results of the study in the sample of students a positive connection between the indicators of the scales "Life performance" and "Risk-taking" was established (r = 0.49; p ≤ 0.05). Based on the data of the results of the study it can be concluded that the higher the students assess the effectiveness of the lived segment of life, the more they are convinced that everything that happens to them contributes to their personal growth.
The relationship between the scores of the scales "Locus of Control-Life" and "Involvement" ($r=0.53; p \leq 0.05$) means that the better students can control their lives by making decisions independently, the more satisfied they are with the results of their actions.

In this sample under study, correlation analysis revealed that the scores on the "Meaningfulness of Life" scale of the "Meaningful-Life Orientations" test were positively related to the "Flexibility" scale ($r=0.58; p \leq 0.01$); the higher students' meaningfulness and satisfaction with their lives, the more capable they were of adjusting and changing depending on the influences of their environment.

The analysis of correlations in the group of cadets revealed a positive relationship between the indicators of the scales "Goals in life" of the test "Meaningful life orientations" and "Flexibility" ($r=0.55; p \leq 0.05$). The higher the purposefulness in this sample of respondents, the higher the ability to readjust in case of changing external and internal environmental conditions. The obtained results are visually presented in Figure 2.
The positive correlation between the indicators of the scales "Process of life" and "Involvement" (r=0.61; p≤0.01), indicates that the more satisfactory the cadets perceive the process of their life, the higher their belief that participation in the events that occur allows them to find something worthwhile and interesting in life. The scores on the scale "Life performance" of the test "Meaningful life orientations" of cadets are positively related to the scale "Flexibility" (r=0.51; p≤0.05), which may mean the following, the higher the cadets' satisfaction with self-actualization, the more they can reconstruct the self-regulation system in connection with changing environmental conditions.

In this group of respondents, further analysis revealed a positive correlation between the scores of the "Locus of Control-Self" and "Modeling" scales (r=0.59; p≤0.01). The higher the cadets' perception of themselves as masters of their own lives is developed, the better they distinguish significant conditions for achieving goals in the current situation, and in the perspective future, the more flexible they can change their program of action in unexpectedly changing conditions. The results are visually presented in Figure 2.

The positive correlation between the indicators of the scales "Meaningfulness of Life" in cadets and "Control" of the method "Resilience Test" (r=0.67; p≤0.01) may mean the following, the higher the cadets' meaningfulness of life is developed, the more they are inclined to take independent decisions.

4 Discussion / Analysis of Results

The analysis of theoretical literature sources has shown that the problem of studying various psychological constructs that determine personal resources and ensure the psychological safety of a person has not lost its relevance for many years and is one of the fundamental problems in psychology.

When analyzing the results of the study of resilience, sense-life orientations, and self-regulation styles of behavior it is noted that these psychological constructs characterize social behavior, are associated with personal resources, and can determine the level of psychological safety of students in high school, which is confirmed by the research of I.A. Baeva [1].

In the investigated samples reliable significant differences in the level of resilience, sense-life orientations, and self-regulation styles of behavior in students and cadets were obtained. The results of the research indicate that taking into account the peculiarities of future professional activity associated with the influence of extreme influences, targeted recruitment of students with the necessary required qualities is carried out in departmental universities.

Such qualities include a high level of resource capabilities, the ability to flexibly reconstruct a self-regulation system depending on changing conditions, resilience, purposefulness, independence, etc. Thus, it is possible to state that the level of resilience as a personal resource is higher in the students of departmental universities.

Unfavorable stressful influences of the environment affecting a person contribute to the development of resilience, which directly affects the regulatory processes of the organism. These results of the research find their confirmation in various scientific works and become especially important for professions of the extreme profile, which include specialists in the transport industry, and power departments, where the activity itself places increased demands on the future specialist. Thus, the ability to survive against the impact of adverse factors is a basic need, the basis of our behavior, and determines the psychological safety of the individual.

The analysis of correlation dependencies of the results in the studied groups has shown that the structure of connections of scales of vitality, sense-life orientations, and styles of self-regulation of behavior in students and cadets have their features. Readiness for risk and openness to new knowledge is significantly higher in students who have a high level of
satisfaction with their life, and who perceive it as rich and full of meaning. According to the results of the study, it can be argued that for this category of students the level of resilience and the features of sense-life orientations act as a personal resource. They do not perceive unfavorable influences of the external and internal environment as sources of stress, they are ready to take risks and are characterized by more flexible readjustment of regulatory systems to the requirements of environmental factors.

5 Conclusion

When analyzing the results of the study there were significant differences in the level of resilience, sense-life orientations, and self-regulation styles of behavior among students and cadets.

Based on the results of the comparative analysis we can say that cadets are characterized by greater involvement in what is happening, activity satisfaction, and control of their actions, as opposed to students, at \( p \leq 0.01 \). The students of departmental higher education institutions have higher levels of personal resources, and a more flexible individual style of self-regulation depending on the influence of environmental factors. A significantly higher number of examinees among departmental university students with good resource capabilities is caused by the target set and specificity of future professional activity of specialists.

Effective self-regulation styles of behavior are determined by a person's confidence that his or her actions are capable of influencing the reality around him or her. This can be observed in both cadets and students. But for cadets, it is associated with goals in life, modeling, and independence, while for students it is associated with programming their actions and the ability to manage their lives.

The higher the meaningfulness of life in cadets, the higher the ability to process negative experiences into useful and productive mechanisms of interaction with the surrounding reality, at \( p \leq 0.01 \). The higher the confidence in the future specialists of transport university, the more in their actions it is possible to observe rationality, adherence to the planned goals, and understanding by students of their role and place in their life.

The results obtained can be used within the framework of psychological and pedagogical support of students at the university in the preparation of training programs for the formation of a resilient personality in the adverse effects of environmental factors and aimed at the formation of conscious sense-life orientations. To create conditions of a safe educational environment providing the development of the personal potential of students, it is necessary to include monitoring of these psychological constructs in the activities of psychological and pedagogical support in the university.

Further study of the conceptual apparatus, methodological approaches, genesis, mechanisms of maintaining resilience, connection with personal characteristics, sense-life orientations, etc. will be promising directions for future research of this problem. Of particular research interest is the study of these psychological constructs in beginners and experienced professionals in the transport industry, given that these psychological constructs serve as a predictive parameter of the effectiveness of professional activity and provide personal professional growth for specialists.

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