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Age-related and Gender Characteristics of the Content of Subjective Experiences of Mental States in Children with Developmental Disorders

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Abstract

Introduction. This study addresses age-related and gender characteristics of subjective experiences of mental states in children with developmental disorders.

Methods. The authors examined subjective experiences of mental states such as joy, anger, and calmness. Children were asked to retrospectively and prospectively describe their mental states. The method of content analysis of texts was employed to identify semantic units and calculate the frequency of their occurrence.

Results. Subjective experiences of mental states in children with developmental disorders depend on their gender and age. Subjective experiences of certain mental states may have similar content in boys and girls. Subjective experiences of mental states are more pronounced in younger boys with infantile cerebral palsy than in younger girls and in adolescent boys. Experiences of mental states are significantly enriched in adolescent girls with infantile cerebral palsy. Adolescents' subjective experiences depend on gender and mental state. Subjective experiences of the state of joy are significantly more pronounced in younger boys with severe speech impairments than in adolescent boys. Boys' experiences of calmness have a similar content. Younger girls' experiences of calmness are much more intense than that of the boys of the same age. Projecting into the future, subjective experiences of mental states are transformed, losing some substantial components.

Discussion. The study of subjective experiences of mental states in children with developmental disorders expands the format of available research in the field of psychology of mental states. The present study appears to be the first on characteristics of the experience of mental states in children of different nosological groups. The results of this study do not contradict the available data on mental states in school-age children provided earlier by A. O. Prokhorov.

Keywords

subjective experience, emotional experience, experience of states, mental states, developmental disorders, infantile cerebral palsy, severe speech impairments, gender characteristics, age-related characteristics, temporal continuity

Highlights

► Subjective experiences of mental states have similar content and specific characteristics depending on gender and age in nosologically distinct groups of children.

- ▶ Subjective experiences of mental states contain a regulatory component, which indicates a high degree of awareness of the state and understanding of self-regulation mechanisms in some children.
 - ▶ Subjective experiences of the states are most meaningful in younger children. Experiences of the states are more meaningful in younger boys than in younger girls. Subjective experiences are saturated with emotional and sensual characteristics in adolescent girls.
 - ▶ Subjective experiences of mental states are transformed in temporal continuity, which enables us to predict the development of states in children and to identify penetrating meaning units for their involvement in the regulation process.
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Introduction

Subjective experience of mental states

Individuals experience mental states, which is reflected in their consciousness and is recorded in memory structures. The dynamics of mental states is a rather complicated and complex natural process, in which the emotional sphere of children is complicated and enriched in the context of their general socialization (Izotova & Nikiforova, 2004). Mental states of negative modality (anger, fear, anxiety, melancholy, etc.) and corresponding behaviors (tearfulness, withdrawal, constraint, etc.) are the main predictors for impaired mental development in children, affecting their social adaptation and personal development (Izard, 2010).

Events and situations of the past and the states related to them are stored in memory, forming the content of subjective experience. Mental states are recorded in individual subjective experience in the form of an image that has a certain structure, contains information about the intensity and content of the states. This means that experience is a spatio-temporal diagram of states (Prokhorov, 2008, 2011, 2012, 2013) and the basis for individual differences in cognitive activity (Kholodnaya, 2002, 2004). The experience of mental states allows us to identify our states and the states of others (Artishcheva, 2018; Artishcheva, 2018, 2019), which ensures the personal and social interaction of individuals. The subjective experience of mental states is formed, enriched, and transformed throughout a person's life, which may be determined by personality traits, age-related and gender differences. Experience is knowledge of the causes of emotions and mental states (Barrett, Mesquita, Ochsner, & Gross, 2007).

As a characteristic of children with developmental disorders, emotional immaturity determines behavioral and emotional manifestations (situationality, instability). In this regard, it is obvious that the subjective experience of mental states in children with developmental disorders will be poor and may reflect specific characteristics of their impairments.

The emotional sphere in children with disorders of the locomotor apparatus

Children with disorders of the locomotor apparatus (hereinafter DLA) most often have an immature emotional-volitional sphere. Their actions are usually based on emotions of pleasure and momentary desires, which leads to egocentrism, inability to combine their own and others' interests, to obey the rules and requirements of the collective (Zaitseva & Krasikov, 2015). Such children are usually restless, disinhibited, with frequent changes in mood (Garbuzov, 1994; Ilyin, 2013).

Increased vulnerability is noted when children realize their physical inferiority, which determines their fear of being ridiculous, and which further complicates their socialization (Kuznetsova, Peresleni, & Solntseva, 2002). In case of disorders of the locomotor apparatus, when children experience their motor defect, neurotic and psychotic reactions, i.e., the emotional sphere, can be secondary disturbances (Samorokova, 2015).

Physical disabilities are most acutely experienced in adolescence and youth. Physical disability can mobilize adolescents to fight the disease, their inferiority, to find themselves in society. However, feelings may become central experiences in life, leading adolescents away from active inclusion in social life (Kuznetsova et al., 2002).

The chronic state of the conflict between real opportunities and expectations of children with DLA leads to a constant feeling of anxiety, tension, and concern. Anxiety determines shyness, aggressiveness, fears, indifference, and even apathy (Samorokova, 2015).

The experiences of children and adolescents with cerebral palsy are determined by existing developmental disorders. Awareness of their inferiority determines a wide range of states.

The emotional sphere in children with severe speech impairments

Speech disorders determine specific characteristics of child development. Children find themselves in social deprivation, which complicates the adoption of social experience; the development of the emotional sphere is distorted, and emotional vocabulary suffers along with it (Kondratenko, 2002; Dubrynina & Bobrova, 2017; Gribova, 1995). Such children experience difficulties in comprehending their own and others' emotions, in differentiating their mental states, are given to stressful states and more often dominated by negative emotional backgrounds (Kondratenko, 2002; Shipitsyna & Volkova, 1993).

They are often irritable, restless, excitable, sometimes even aggressive, diffident, touchy, and reserved. At the same time, they would have fast switchability in experiences. The immaturity of the emotional-volitional sphere determines changes in the personal sphere and the distinctness of behaviors (Yurchuk, 2008; Shkurkina, 2018; Lebedinsky, 2011).

The presence of problems in the emotional sphere in children with developmental disorders determines strategies for their correcting and educating in emotional literacy or competency (Barnfather & Amod, 2012; Kremenitzer, 2005), which implies knowledge of emotions and mental states (Izard et al., 2001). The emotional illiteracy of children with developmental disorders is determined not only by the difficulty in expressing their emotions, their understanding and identification, but also by the personality characteristics and conditions of upbringing. Scientists have shown that children with disabilities brought up by parents with sensory impairments have higher levels of empathy (Eden, Romi, & Braun Aviyashar, 2017; Duvdevany, Moin, & Yahav, 2007).

Identification of emotions and mental states, their recognition in themselves and in other people help achieve positive social interaction, successful communication, and reduce problem behaviors (Izard et al., 2001). It is important to develop emotional literacy in such children, their

ability to recognize, comprehend, and understand mental states, which is possible in the presence of their rich experience of mental states.

The scientific importance of the research results is explained by the fact that the study of an aspect of subjective experience related to mental states, their dynamics, intensity and structural organization may expand the boundaries of our understanding of the category of subjective experience in psychological science. Moreover, the results of the study will complement the existing scientific background in defectology. In the context of defectology, researchers mainly examine the emotional-volitional sphere in individuals with disabilities and provide data on specific characteristics of emotional states in children, depending on nosology. However, the data concerning the identification of mental states and emotions by children with various disorders are still lacking. Therefore, the importance of studying the content of the subjective experience of mental states in children and adolescents with developmental disorders in various age groups with the identification of gender characteristics is indubitable.

Practical relevance. The characteristics of the subjective experience in children with developmental disorders are understudied, but they are important for successful adaptation and socialization of children, for the development of their emotional-volitional sphere, and contribute to their skills of communication and interaction with others.

Methods

The sample

The study sample comprised 10–12 children aged 7–11 years and 10–13 adolescents aged 13–14 years with developmental disorders (severe speech impairments, cerebral palsy) with unimpaired intelligence.

Research tools

Structural components of the subjective experience of mental states in children and adolescents were examined using the methods of self-reporting and content analysis of texts. We have chosen three typical mental states, often experienced and familiar to children and adolescents such as joy, anger, and calmness. These conditions differ in their modality (positive, negative) and various levels of mental activity (high, medium).

The procedure

We studied the subjective experience of the following mental states: joy, anger, and calmness. The participants were asked to retrospectively and prospectively describe their mental states in free form. At the first stage, the respondents described mental states experienced in the past. The instruction was as follows: Remember how you experienced joy (anger, calmness) in the past. What were the events that you associated with joy (anger, calmness)? What did you feel? How did joy (anger, calmness) manifest itself? Please, describe your state as fully as possible.

At the second stage, the participants described anticipations of experiences of mental states in the future. The instruction was as follows: How do you think you will experience joy (anger, calmness) in the future. What events will be associated with joy (anger, calmness)? How will joy (anger, calmness) manifest itself? Please, describe your state as fully as possible.

The responses of the participants were processed by an expert group using content analysis. The words and phrases that expressed certain meanings represented the unit of analysis; the

empirical indicators of each semantic unit are shown in Table 1. Further, we calculated the frequency of occurrence of each semantic unit in the texts of the respondents, which allowed us to determine the fullness and content of subjective experiences. To identify differences in the values subjective experiences of mental states we used the Student's t-test. The data were processed in the SPSS-17 program.

We studied groups of the same nosology distinguished by gender and age, and nosological groups of the same age and gender. By identifying the most common meaning units in self-reports of each selected subgroup, we thereby determined the basic structural content of the subjective experience of mental states.

The current study aimed to examine the specific characteristics of the content of the subjective experiences of mental states in children with disorders of the locomotor apparatus and speech impairments (a single nosological group of developmental disorders), to identify gender and age-related features of the subjective experience of states.

The objectives of this study were (a) to study subjective experiences of mental states that differ in their modalities and the degrees of mental activity; (b) to identify the characteristics of the content of subjective experience of mental states depending on age, gender, and nosology; (c) to discover the nuclear and peripheral layers of subjective experiences of mental states.

Results

To identify characteristics that constitute subjective experiences of mental states, the texts were divided into meaning units. Let us describe the content of these units, i.e., their empirical indicators (Table 1).

The revealed semantic units belong to different categories. Children and adolescents with developmental disorders describe mental states experienced in the past and in the expected future, by indicating the reasons of these states, through external markers, for example, communication and unity with someone. They describe mental states through their behavior, reactions, and activities. However, their experiences contain internal markers related to the world of their feelings, value judgments, and thoughts. Special attention should be given to the elements of regulation and overcoming problems. In some descriptions of negative states, some children use regulation techniques, i.e., subjective experiences of negative mental states may also contain a way to overcome them.

By analyzing the frequency of occurrence of semantic units, characteristics of subjective experiences of mental states, we determined the nuclear layers of experiences and their periphery.

| <i>Meaning units of subjective experiences of mental states</i> | | |
|---|--------------------------------|---|
| <u>No</u> | <u>Meaning units</u> | <u>Empirical indicators of characteristics</u> |
| 1 | Evaluation/quantity/comparison | 'everything is all right', 'very seldom', 'mostly', 'least favorite subject', 'very much', etc. |
| 2 | Relatives/close relationships | 'with loved ones', 'with mother', 'with grandmother', etc. |
| 3 | Unity/adoption | 'discussing with parents', 'being with loved ones', 'accepted to speak', etc. |

| <i>Meaning units of subjective experiences of mental states</i> | | |
|---|---------------------------------------|--|
| <u>№</u> | <u>Meaning units</u> | <u>Empirical indicators of characteristics</u> |
| 4 | Feelings/emotions/experiences | 'when I'm happy', 'greatly anger', 'I feel resentment', 'I feel nothing', etc. |
| 5 | Reasons/situations | 'because of something', 'birth of a sister', 'when I eat dessert', 'when I'm satisfied', etc. |
| 6 | Regulation | 'this passes', 'to calm down', 'they cope with them', etc. |
| 7 | Actions/activities | 'to read books', 'to participate in various contests', 'I play the guitar', etc. |
| 8 | Mental, mnemonic, reflexive processes | 'thinking about...', 'all sorts of good thoughts', 'thinking of something', 'if I stop thinking', etc. |
| 9 | Conditions/places | 'this completes', 'at the weekend', etc. |
| 10 | Desires/dreams/expectations | 'I'm dreaming', 'when I really wanted to', etc. |
| 11 | Reactions/behaviors | 'I can quarrel', 'I don't do anything', 'I sit quietly', 'they respond quietly', etc. |
| 12 | Physiological processes | 'it makes my heart bleed', 'I am tired', etc. |
| 13 | Communication | 'I discuss', 'do not talk at all', 'I sit and talk', etc. |
| 14 | Abstractions/metaphors | 'as if I am falling', 'as nature talks', 'when I lose heart', etc. |

Younger children with disorders of the locomotor apparatus. The analysis of gender characteristics of subjective experiences of mental states provided the following results. The boys (aged 7–10 and 13–14 years) with cerebral palsy more fully describe the state of joy than the girls of these age groups. Their texts contain a description of various aspects of experiencing states using a larger number of semantic units. In younger boys subjective experiences of the states of *joy* and *anger* (a state of a high level of mental activity) contains mainly evaluative and comparative characteristics ('long ago', 'like everything', 'bad', etc.), descriptions of actions and activities ('we went to the cinema', 'did homework', 'scolded', etc.), conditions or places of events ('a very long time ago', 'after the lessons', 'now', 'home from school', etc.). In the projection of the future, the subjective experience of these states is impoverished, i.e., descriptions of the states experienced in the future are scarcer; the frequency of mentioning semantic units is lower. But the leading components remain, except for those indicating the place and conditions of the events that accompany the experience. The younger boys' subjective experiences of the state of calmness is represented by emotional characteristics ('calmness', 'became happy', 'not angry', etc.) actions and activities ('do not scold', 'got an excellent mark', 'plays a fairy tale'). In the future, the state

of calmness is mainly projected by descriptions of actions and activities. We should note that in projection into the future several younger boys demonstrated the element of regulation of anger in their subjective experiences; consequently, they already predict the management of this state in the future.

The girls' subjective experiences of mental states are more diverse. In younger girls, the experiences of the state of joy are mainly represented by descriptions of emotional and sensory feelings ('sad', 'fun', 'pride', etc.), causes and situations that determine joy ('fun happens', 'go to grandma's', 'went to the cinema', etc.), as well as characteristics that reflect close relationships and family relations ('go to granny', 'my mother and I', 'with Ralina', etc.), actions and activities ('went to the cinema', 'swam', 'was at home', etc.). In the projection onto the future, the girls' subjective experiences of joy are reduced. Descriptions of actions and activities are only preserved as leading components; however, they are strengthened by evaluative and comparative units. Subjective experiences of the state of anger are represented by a smaller number of meaning units; evaluative-comparative and emotional-sensual are most common characteristics among them ('resentment', 'frustration', 'angry', etc.). In the projection of the future, subjective experiences changed; the frequency of occurrence of emotional and sensory references ('angry', 'I will not feel anger', 'was sitting offended', etc.) and descriptions of actions and activities ('he/she is engaged in hooliganism', 'he/she spoils, breaks', etc.) increased. The state of calmness is mainly represented by meaning units that reveal actions and activities ('sitting', 'swimming', 'drawing', 'I could do what I wanted' etc.), reasons and situations ('when I play with toys', 'when I'm making a homemade article', etc.) that determine this state. Calmness is projected into the future through evaluative and comparative characteristics and descriptions of actions and activities. Several younger girls note regulation of their states and behavior only in the projection of the future state of anger. There was a component that regulated the state of anger in the experience of one of them ('I'll forgive anyway'); the other one noted the impossibility of regulation ('I can't keep control').

Adolescent children with disorders of the locomotor apparatus. Let us consider gender characteristics of subjective experiences of mental states in adolescent boys and girls. In adolescent boys, subjective experiences of joy are mainly represented by evaluative and comparative characteristics ('sometimes...', 'all sorts of good things', 'everything is all right', etc.) and descriptions of actions and activities ('reading books', 'providing assistance', 'no need to write anything', etc.). The projection of experiences of the state of joy into the future is mainly represented by a characteristic that reflects actions and activities. The subjective experience of the state of anger contains evaluative and comparative characteristics and emotions and feelings ('annoyed', 'very angry', 'I'm to blame', etc.). Subjective experiences of anger are projected into the future by fewer semantic units. The most frequent characteristics are those of comparison, evaluation, reasons, and situations ('when I quarrel', 'when something fails', etc.), as well as actions and activities ('he/she will offend', 'they won't do something', 'I will not be able to drive', etc.). Subjective experiences of the state of calmness contain descriptions of actions and activities ('I play the guitar', 'plays quietly', 'you can't stop', etc.) and evaluations and comparisons. In the future, experiences of calmness are projected, preserving these meaning units as more often described. In adolescent boys the regulation of states and behavior is reflected in subjective experiences of anger ('this passes', 'I try not to splash out', etc.) and calmness ('sit down, drink tea, and calm down in any situation', 'when you understand that you can do nothing, it not worth to curse').

In adolescent girls subjective experiences of joy contain emotions and feelings ('joy at heart', 'happy moments', 'emotional excitement') as well as expressive manifestations and reactions ('I have a smile', 'bright eyes', etc.). Adolescent girls' projections of the future experiences of joy are very poor; the evaluation and comparative characteristic is its main component. In their experiences anger is represented by characteristics of comparisons and evaluations ('quickly passes', 'always', etc.), emotional descriptions ('resentment', 'fury', 'I am guilty', etc.). The adolescent girls' subjective experiences of anger are projected by altered, but not poor meaning units; the leading characteristic describes actions and activities. The content of the adolescent girls' subjective experience of calmness is mainly represented by meaning units reflecting assessments, comparisons, feelings, and emotions ('good mood', 'calmness'). In the projection into the future, subjective experiences of calmness preserve their evaluation and comparative characteristics as the leading component. We should note that the regulatory component is found only in the adolescent girls' subjective experiences of anger in the 'past – future' continuum.

Let us consider characteristics of subjective experiences of the mental states in children with severe speech disorders in the same logic.

Younger children with severe speech impairments. The younger boys' experiences of the state of joy are presented by descriptions of actions and activities ('did it', 'gave gifts', 'mother scolded', etc.), close relationships with relatives, loved ones ('helped mom', 'my elder sister Tanya was there', etc.), causes and situations ('when you don't need to look after her', 'they don't allow something', 'enjoy the New Year', etc.). The projection of the subjective experience of joy into the future is revealed by their evaluations, actions, and activities. The younger boys' subjective experiences of the state of anger are presented by descriptions of actions and activities ('went to have a drink', 'uncle arrives', 'offends me', 'to fight', etc.), comparisons, and evaluations. The subjective experience of the state of anger is projected into the future by a wide range of more common characteristics. Younger boys indicate the emotional-sensual sphere, evaluative and comparative characteristics of the state, relationships with relatives and loved ones, describe their actions and activities. Younger boys' subjective experiences of calmness and their projections into the future are mainly represented by similar semantic units: evaluative and comparative ('everything is all right', 'it's so convenient', etc.), emotional ('I'm calm', 'I am not furious', 'I'm good inside', etc.) and actions and activities ('I do homework', 'they did not scold', 'I help mom', etc.). Subjective experiences of the states of anger and calmness contain a regulatory characteristic ('when you can keep yourself', 'keep anger').

Younger girls' subjective experiences of the state of joy is represented by descriptions of assessments, comparisons, emotions, and feelings ('I loved summer', 'I was sad', etc.) and actions and activities ('grandmother came', 'went swimming in the pool' and etc.). The experiences of the state of joy are projected into the future as altered ones, containing a large number of meaning units; the most common characteristics reflect actions, activities, close relationships, conditions, and places of events. Younger girls' subjective experiences of the state of anger is represented by descriptions of actions and activities ('scatter things', 'my friend offended', etc.), comparative and evaluative characteristics. In the projection into the future, the subjective experience of anger preserved the leading component that described actions and activities. Boys' past experiences of the state of calmness are revealed through actions ('I draw', 'I cook', 'I sat on a horse', etc.), feelings, and emotions. The projections of subjective experiences of calmness into the future are transformed and represented by descriptions of actions, activities, and close relationships.

Subjective experiences of anger and calmness contain a regulatory component ('I calmness down when I lie down on the bed', 'he reassured'). This component is also projected into the future in subjective experiences of calmness ('I calm down when I make articles', 'home will comfort', etc.).

Adolescent boys' subjective experiences of the state of joy contain descriptions of causes and situations associated with this condition ('when I came to the boarding school', 'nothing happened', 'in different situations', etc.). The experiences of the state of joy are projected into the future in a reduced form, that is, with a lower frequency of occurrence of meaning units, where the evaluative-comparative component is the leading one. Adolescent boys' subjective experiences of the state of anger is presented by descriptions of actions ('mother punished', 'did not allow', 'ran to meet', etc.) and the reasons, situations that caused this condition ('when mother died', 'because they asked a lot', etc.). The subjective experience of anger is projected into the future by evaluative and comparative characteristics and descriptions of the reasons and situations associated with anger. Adolescent boys' subjective experiences of the state of calmness are revealed through evaluative and comparative characteristics and description of the reasons and situations ('nothing happened', 'any music', 'dad bought a smartphone', etc.). In the projection onto the future, the experiences of the state of calmness are poorly presented, with a smaller number of meaning units and with less degree of their occurrence. In the future, experiences of calmness are mainly represented by descriptions of the reasons, situations associated with this condition, actions, and activities. The regulative component is observed in subjective experiences of anger within the entire 'past – future' temporal continuity ('I fought and felt calmness after that', 'I will try to calmly accept everything', 'I'm sad, but I calm down', etc.) and in the experience of a state of calmness ('still comforted...').

Let us compare the values of the subjective experiences of mental states of joy, anger, and calmness between younger children and adolescents with disorders of the locomotor apparatus (Table 2). Table 2 shows only the values that have significant differences in the studied groups.

Table 2

Significance of differences in the content components of subjective experiences of mental states in children with cerebral palsy (age groups)

| Meaning units | Joy. Boys | |
|-----------------------------------|--------------------------|---|
| | Mean values. Children | Significance of differences, Student t-test |
| 1. Evaluation/quantity/comparison | 4,4 | p < 0,001 |
| 2. Relatives/close relationships | 2,1 | p < 0,001 |
| 4. Feelings/emotions/experiences | 2,1 | p < 0,01 |
| 5. Reasons/situations | 2 | p < 0,01 |
| 7. Actions/activities | 3,3 | p < 0,001 |
| 9. Conditions/places | 2,7 | p < 0,001 |

| Table 2 | | | |
|--|--------------|-------------|-----|
| <i>Significance of differences in the content components of subjective experiences of mental states in children with cerebral palsy (age groups)</i> | | | |
| | Joy. Girls | | |
| 2. Relatives/close relationships | 1,2 | $p < 0,01$ | 0 |
| 5. Reasons/situations | 1,3 | $p < 0,05$ | 0,7 |
| 9. Conditions/places | 0,2 | $p < 0,05$ | 0,7 |
| 11. Reactions/behaviors | 0,7 | $p < 0,05$ | 1,3 |
| | Anger. Boys | | |
| 2. Relatives/close relationships | 1,6 | $p < 0,001$ | 0 |
| 5. Reasons/situations | 2 | $p < 0,01$ | 0,9 |
| 6. Regulation | 0 | $p < 0,05$ | 0,6 |
| 7. Actions/activities | 3,6 | $p < 0,001$ | 1 |
| 9. Conditions/places | 2,3 | $p < 0,001$ | 0,5 |
| 10. Desires/dreams/expectations | 0,1 | $p < 0,05$ | 0,6 |
| | Anger. Girls | | |
| 4. Feelings/emotions/experiences | 1 | $p < 0,01$ | 2 |
| 6. Regulation | 0 | $p < 0,01$ | 0,7 |
| 7. Actions/activities | 0,5 | $p < 0,01$ | 1,3 |
| 9. Conditions/places | 0,3 | $p < 0,01$ | 1,3 |
| 10. Desires/dreams/expectations | 0 | $p < 0,01$ | 1 |
| 11. Reactions/behaviors | 0,3 | $p < 0,01$ | 1 |

Table 2

Significance of differences in the content components of subjective experiences of mental states in children with cerebral palsy (age groups)

| | Calmness. Boys | | |
|--|-----------------|-------------|-----|
| 1. Evaluation/quantity/comparison | 1,9 | $p < 0,05$ | 1,3 |
| 2. Relatives/close relationships | 1,1 | $p < 0,05$ | 0,3 |
| 4. Feelings/emotions/experiences | 2,6 | $p < 0,001$ | 0,8 |
| 5. Reasons/situations | 1,3 | $p < 0,01$ | 0,4 |
| 7. Actions/activities | 3,1 | $p < 0,001$ | 1,1 |
| 8. Mental, mnemonic, reflexive processes | 0,1 | $p < 0,01$ | 1,1 |
| 9. Conditions/places | 2 | $p < 0,01$ | 0,8 |
| | Calmness. Girls | | |
| 1. Evaluation/quantity/comparison | 0,5 | $p < 0,01$ | 1,7 |
| 4. Feelings/emotions/experiences | 0,8 | $p < 0,001$ | 2,3 |
| 7. Actions/activities | 2,3 | $p < 0,01$ | 1 |
| 8. Mental, mnemonic, reflexive processes | 0 | $p < 0,05$ | 0,7 |
| 9. Conditions/places | 0,2 | $p < 0,05$ | 0,7 |

The values of subjective experiences of mental states – joy, anger, calmness – are more pronounced in younger boys. This indicates that compared to adolescent boys their experiences are more substantial. Penetrating characteristics of subjective experiences, which are significantly expressed in each state, include characteristics that reflect close relationships, reasons and situations, actions and activities, conditions and places of events. It is not so clear for the girls. In their descriptions of the state of joy experienced in the past younger girls more often indicate the causes, situations, relationships with relatives which determine this condition. Meanwhile, adolescent girls describe their experiences of the state of joy using descriptions of conditions, events and reactions associated with this state. Compared to younger girls, the subjective experiences of

anger in adolescent girls are more saturated by content components. The characteristics of the subjective experience of calmness, revealing the emotional-sensual sphere, evaluative-comparative aspect, mental, reflective processes, conditions and places of events, are significantly more represented in adolescent girls. The descriptions of actions and activities are more pronounced in the younger girls' subjective experiences of calmness.

Next, let us compare the characteristics of subjective experiences of mental states of joy, anger, calmness between boys and girls of different ages with disorders of the locomotor apparatus (Table 3). Table 3 shows only values that have significant differences in the studied groups.

| Joy. Younger boys and girls | | | |
|-----------------------------------|----------------------|---|-----------------------|
| Meaning units | Mean values. Boys | Significance of differences, Student t-test | Mean values. Girls |
| 1. Evaluation/quantity/comparison | 4,4 | $p < 0,001$ | 0,8 |
| 2. Relatives/close relationships | 2,1 | $p < 0,01$ | 1,2 |
| 5. Reasons/situations | 2 | $p < 0,01$ | 1,3 |
| 7. Actions/activities | 3,3 | $p < 0,01$ | 1,2 |
| 9. Conditions/places | 2,7 | $p < 0,001$ | 0,2 |
| Anger. Younger boys and girls | | | |
| 1. Evaluation/quantity/comparison | 2,4 | $p < 0,01$ | 1,5 |
| 2. Relatives/close relationships | 1,6 | $p < 0,01$ | 0,3 |
| 4. Feelings/emotions/experiences | 2,1 | $p < 0,01$ | 1 |
| 5. Reasons/situations | 2 | $p < 0,001$ | 0,5 |
| 7. Actions/activities | 3,6 | $p < 0,001$ | 0,5 |
| 9. Conditions/places | 2,3 | $p < 0,001$ | 0,3 |
| 11. Reactions/behaviors | 1,1 | $p < 0,01$ | 0,3 |

Table 3

Significance of differences in the content components of subjective experiences of mental states in children with cerebral palsy (gender groups)

| Calmness. Younger boys and girls | | | |
|-------------------------------------|-----|-------------|-----|
| 1. Evaluation/quantity/comparison | 1,9 | $p < 0,01$ | 0,5 |
| 4. Feelings/emotions/experiences | 2,6 | $p < 0,001$ | 0,8 |
| 6. Regulation | 0,7 | $p < 0,05$ | 0 |
| 7. Actions/activities | 3,1 | $p < 0,01$ | 2,3 |
| 9. Conditions/places | 2 | $p < 0,01$ | 0,2 |
| 11. Reactions/behaviors | 1,1 | $p < 0,01$ | 0 |
| Joy. Adolescent boys and girls | | | |
| 1. Evaluation/quantity/comparison | 1,8 | $p < 0,01$ | 1 |
| 2. Relatives/close relationships | 0,6 | $p < 0,05$ | 0 |
| 3. Unity/adoption | 0,6 | $p < 0,05$ | 0 |
| 4. Feelings/emotions/experiences | 1,2 | $p < 0,01$ | 2,3 |
| 7. Actions/activities | 1,8 | $p < 0,01$ | 1 |
| 11. Reactions/behaviors | 0,6 | $p < 0,05$ | 1,3 |
| 12. Physiological processes | 0 | $p < 0,01$ | 1 |
| Anger. Adolescent boys and girls | | | |
| 1. Evaluation/quantity/comparison | 2,4 | $p < 0,05$ | 1,7 |
| 2. Relatives/close relationships | 0 | $p < 0,05$ | 0,7 |
| 4. Feelings/emotions/experiences | 1,4 | $p < 0,05$ | 2 |
| 5. Reasons/situations | 0,9 | $p < 0,05$ | 0,3 |
| 9. Conditions/places | 0,5 | $p < 0,01$ | 1,3 |
| Calmness. Adolescent boys and girls | | | |
| 4. Feelings/emotions/experiences | 0,8 | $p < 0,001$ | 2,3 |
| 5. Reasons/situations | 0,4 | $p < 0,05$ | 1 |
| 6. Regulation | 0,7 | $p < 0,05$ | 0 |
| 11. Reactions/behaviors | 0,7 | $p < 0,05$ | 0 |

Compared to younger girls, younger boys' subjective experiences of the mental states were significantly more pronounced. Penetrating characteristics that have significant differences in subjective experiences of each mental state include the evaluative and comparative component, actions and activities, conditions and places of events that determine or accompany experiences of multimodal states. The adolescents were characterized by different features. The adolescent boys' subjective experiences of the state of joy are characterized by significantly more pronounced meaning units of unity, close relationships, actions and activities, evaluation and comparison. For the most part, adolescent girls' subjective experiences of joy contain descriptions of the emotional sphere and reactions. In adolescent boys' subjective experiences of the state of anger, the evaluative and comparative component and the disclosure of reasons and situations associated with anger are significantly pronounced. Adolescent girls' subjective experiences of the state of anger contain descriptions of feelings, experiences, conditions, and places of events. The subjective experiences of the state of calmness also depend on gender. Thus, in adolescent girls' experiences of calmness the emotional-sensual sphere and descriptions of causes and situations are significantly pronounced. In adolescent boys' experiences of calmness, reactions determined by calmness and the regulatory aspect are more fully presented.

Then, by the analogy, we analyzed significant differences in the group of children with severe speech impairments (due to the limited volume of the article, the table with differences was not provided).

Compared to the adolescent boys, the younger boys' subjective experiences of the state of joy are significantly more pronounced. In the adolescent boys' subjective experiences the characteristic that reveals the reasons and situations associated with joy is the most pronounced one. Subjective experiences of anger differ depending on age. In the younger boys' subjective experiences of anger, the characteristics revealing situations and reasons of anger, actions and activities, and mental and reflexive processes are more pronounced. In adolescent boys' experiences of anger, close relationships and the emotional sphere are significantly more pronounced. Subjective experiences of the state of calmness have the minimum number of differences. However, the evaluation and comparative characteristic is more pronounced in adolescent boys' experiences of calmness.

Compared to the boys of the same age, younger girls' subjective experience of the state of calmness is significantly more meaningful. However, their subjective experiences of the states of joy and anger are ambiguously presented. The younger girls' descriptions of the state of joy experienced in the past contain the evaluative-comparative aspect and characteristics of the emotional sphere. In younger boys' experiences of joy, characteristics revealing close relationships, reasons and situations, actions and activities are significantly more pronounced. In younger girls' subjective experiences of the state of anger the descriptions of close relationships and desires, dreams are most pronounced. In boys' subjective experiences of anger, the characteristics that reflect mental and reflexive processes, conditions and places of events associated with anger are more pronounced.

Discussion

This study is part of a major project aimed at studying subjective experiences of mental states. Various aspects of mental states were studied within the scholar school of A. O. Prokhorov. We suggested the model of regulation of mental states, where much attention is given to experiencing mental states. However, this category of the psychic has not been studied comprehensively.

Available studies are focused on the mental states of children and adults with normotypic development. We made an attempt to study subjective experiences of mental states in different groups of subjects. One of the samples comprised of younger children and adolescents with developmental disorders but unimpaired intelligence.

The subjective experience of mental states is a complex category of the psychic. A study of the content and structure of the experience of states may reveal the general and the specific in experiencing states, as well as identify the components that characterize a mental state and may be markers in building a regulation strategy. Children with developmental disorders have a poorly developed emotional-volitional sphere. As mentioned above, they experience difficulties in identifying states, understanding and recognizing them, which, in turn, complicates the process of interacting with others, regulating their behaviors and states, and establishing relationships.

We tried to distinguish the meaning units of subjective experiences of states that occurred more often in the participants' texts. We believe that as more commonly used, these components may constitute nuclear formations of experiences, and therefore become the trigger mechanism in the regulation process, and be the foundation for states. In other words, if they are similar in the studied groups, nuclear formations allow us to identify and differentiate our and others' mental states. The peripheral layers of subjective experiences are represented by less used units. However, they can impart a kind of specificity and a wide diversity to subjective experiences. We determined the nuclear and peripheral layers of the subjective experiences of states based on the concept of A. O. Prokhorov on semantic spaces of mental states, where nuclear layers were determined by highlighting operants often found in the semantic fields of states.

The data analysis demonstrated that subjective experiences of mental states related to different modalities and levels of mental activity have a meaningful specificity that depends on gender and age. In the 'past – future' temporal continuum subjective experiences are transformed; some elements are reduced (the frequency of their use decreases or/and they are absent). In the projection into the future experiences are represented by a smaller number of meaning units. Some children found it difficult to imagine their future and describe their conditions.

We should note that in each group of subjects the most common component of subjective experience is 'action/activity'. In other words, children reveal their experiences through descriptions of their actions and activities. To a greater extent, this is characteristic of younger age, which does not contradict the research data on age-related features of semantic spaces of mental states (Prokhorov, 2002). The content of younger boys' subjective experiences of states is more meaningful. In adolescence, descriptions of experiences are poorer. Perhaps this is due to the age-related reappraisal of many key life concepts, the 'pit' phenomenon (Prokhorov, 2002), and a decrease in reflection and awareness due to the age crisis. The girls showed the opposite tendency. In adolescence, their subjective experiences of states are enriched; meaning units reflecting feelings, emotions, their manifestations, relationships with loved ones, dreams and desires become more pronounced. Compared to younger girls, subjective experiences of states are more meaningful in younger boys. In adolescence, girls' subjective experiences become more intense and close to those of boys.

The 'past – future' continuum of subjective experiences of multimodal mental states and different levels of activity (anger, calmness) contains a regulating component that is voluntary (intentional actions to change the state) or involuntary (when the dynamics of the state occurs on its own but they are aware of this).

In conclusion, we note should note that the revealed age-related and gender specifics of subjective experiences of mental states, the distinguished nuclear layers and periphery may contribute to understanding the inner world of experiences of children with disabilities, construct strategies for regulating their mental states and behavior.

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No conflict of interest

Types of Attitudes Towards the Disease in Women with Different Durations of Somatization Disorders

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Abstract

Introduction. This article discusses types of attitudes towards the disease in women with different durations of somatization disorders. The results from this study can be useful for achieving successful therapeutic interaction between secondary care medical specialists and patients with somatization disorders. Changes in disharmonious attitudes towards the disease are the factors contributing to the recovery of patients.

Methods. The sample was comprised of women with somatization disorder duration less than 1 year and those with somatization disorder duration between 1 year and 5 years. To determine the types of attitudes towards the disease in women with different durations of diseases this study employed the technique for assessing the Type of Attitudes Towards the Disease by L. I. Wassermann et al.

Results. There are significant differences in the types of attitudes towards the disease in women with somatization disorder duration less than 1 year and those with somatization disorder duration between 1 year and 5 years. The results of this study showed that women with somatization disorder duration of more than 1 year are characterized by a sensitive type of attitudes towards the disease, which manifests itself in an increased anxiety towards their disease. This indicates problems in social adaptation. The types of attitudes towards the disease with an intrapsychic orientation, accompanied by flight into illness predominate in women with somatization disorder duration for less than 1 year.

Discussion. This study provides evidence for disharmonious attitudes towards the disease in women with different durations of somatization disorders. Knowledge of the characteristics of attitudes towards the disease could also be useful for the implementation of psychocorrective measures.

Keywords

somatization disorder, attitude towards the disease, internal picture of the disease, disease duration, sensitivity, bodily distress disorder, social maladjustment, interpsychic orientation, intrapsychic orientation, psychological correction

Highlights

► Attitudes towards the disease in women with different durations of somatization disorders are disharmonious.

- Compared to women with somatization disorder duration of less than 1 year, a sensitive type of attitudes towards the disease with an interpsychic orientation, characterized by social maladjustment predominates in those with somatization disorder duration of more than 1 year.
- Compared to women with somatization disorder duration of more than 1 year, the types of attitudes towards the disease with an intrapsychic orientation, accompanied by flight into illness predominate in those with somatization disorder duration of less than 1 year.

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Introduction

According to the ICD-10 classification, somatization disorders (SD) are among somatoform disorders (F45.0) and manifest themselves in numerous somatic functional symptoms during 2 years or more. Persons suffering from SDs have constant requirements for medical examinations that do not verify any disease. Such patients continue to be a problem for primary care physician, because they often refuse to follow their recommendations to seek specialized psychiatric help (Pogosov & Bogushevskaya, 2019; Bobrova, 2012; Chizhova, 2012; Sobennikov, 2014; Naumova, Kupriyanova, & Beloborodova, 2014).

Subsequently, specialists discovered a stigmatizing effect of the 'somatoform' term on patients. Therefore, in the ICD-11 classification somatoform disorders are renamed as bodily distress disorder (BDD). We should note that this classification suggests a solution to the problem of diagnosing BDDs not according to the absence of physical or medical reasons (as in somatoform disorders in ICD-10), but by the components that are present – concern, excessive thoughts and behavior aimed at finding somatic diseases (Gureje & Reed, 2016; First & Fisher, 2012; Reed et al., 2019; Pohontsch et al., 2018). Therefore, the examination of the characteristics of the reaction to the disease can provide valuable diagnostic information in the work of clinical psychologists and psychiatrists.

An overstatement of the negative role of subjective symptoms in SDs forms a distorted idea about their causal relationships in patients, which is also one of the factors of the 'avoiding psychiatrist behavior'. Therefore, understanding the role of psychological mechanisms in the development of the disease by persons suffering from SDs increases their chances of contacting specialists of the desired profile.

The complex of bodily sensations, emotional experiences, self-assessment of actual state and information about it form an attitude towards the disease. In SDs this attitude is often disharmonious, which can contribute to the chronicity of the disease and lead to mental and social maladjustment of patients (Pogosov & Bogushevskaya, 2017).

Despite the significant progress in psychopharmacology, the diagnosis of 'somatization disorder'

has a poor therapeutic prognosis today (Pogosov, Laskov, & Bogushevskaya, 2018; Rupchev, 2001). In this regard, an empirical search should be aimed at identifying additional correctional targets. Types of attitudes towards the disease are among such targets. In order to understand how a disharmonious attitude towards the disease is formed in people suffering from SDs, it is important to take into account not only clinical manifestations of the disease, but also personal pathological characteristics, such as demonstrativeness, a tendency to form rental attitudes towards physical state, which effects social functioning of such patients (Karvasarsky, 1990; Kvasenko, 1980).

Not only conversion processes (suggesting a symbolic meaning of painful physical sensations) but also the somatization mechanism (expressing emotional discomfort and psychological stress in terms of physical symptoms) influence the development of somatization symptoms (Alexander, 2006; Barsky, Orav, & Bates, 2005).

We should note that the existing theoretical concepts of somatization often do not relate to the description of the sphere of internal bodily experience in which a sensation of pain is experienced. This circumstance determined the increase of research on physicality and its role in the mechanism of somatization. For example, in the work of Rupchev (2001), patients suffering from somatization disorders were characterized by a limited ability to determine intraceptive sensations, absence of a developed system of interaction with internal body experience, as well as the semantic 'metaphoricity' of internal physicality. According to the author, somatization creates the conditions for the occurrence of pathological physical sensations that receive 'undue' attention. Besides this category of patients demonstrate the alienation of mental and physical phenomena.

The diagnosis of 'somatization disorder' affects patient's social functioning and is accompanied by pronounced concern, unmotivated anxiety, and impaired emotional reaction. Thus, Urvantsev (2000) argues that individuals with a high level of alexithymia often have somatic complaints, which can be considered as a manifestation of the somatization of affect. The presence of alexithymic traits in SDs determines specific characteristics of interpersonal relationships in such patients.

According to Filimonov (2011), stigmatization determines increased anxiety in patients hospitalized for somatization disorders in psychiatric institutions, in contrast to those having no experience of contacting psychiatrists. The author found that these patients are characterized by a predominance of anxiety and obsessive-phobic and neurasthenic types of attitudes towards the disease. The anosognosic type of attitudes towards the disease predominates in individuals with somatization disorders who visit primary care physicians. This may be explained by the lack of understanding of the true causes of functional symptoms and unwillingness to recognize the presence of a mental disorder.

Typological personality traits that are noted in many studies (Pribytkov & Yerichev, 2017; Tomenson et al., 2012) also influence the formation of a disharmonious type of attitudes to the disease in SDs. Specialists in the field of SDs have previously attached great importance to the presence of hysterical traits. Currently, there is new evidence on the role of the premorbid personality of other types (with a predominance of anxious, sensitive, schizoid, borderline and other traits). Therefore, hysterical personality traits are not the only characteristics of patients with SDs (Chizhova, 2012; Sobennikov, 2014; Pribytkov, Yurkova, & Bazhenova, 2016; Tomenson et al., 2012; Lenze, Miller, & Munir, et al., 1999).

In addition, some studies indicate that the aggravation of this disorder contributes to the

development of a somatizing personality, when somatic symptoms decrease and pathological characterological disorders start to prevail in the clinical picture (Aleksandrovsky, 2006; Ushakov, 1978).

When analyzing the rational component of attitudes towards the disease in people suffering from SDs, A. Martin & W. Rief investigated a cognitive style with catastrophization of bodily sensations. This phenomenon contributes to the development and maintenance of functional symptoms in SDs. These patients are characterized by statements of the anosognosic type. Denial of a painful state may be related to a situation of uncertainty, characteristics of the disease, types of clinical course, and age (Martin & Rief, 2011; Salkovskis, Warwick, Deale, et al., 2003; Bryabrina, 2009).

Salkovskis et al. (2003) also point out a special cognitive style in patients with the diagnosis of 'somatization disorder', which is characterized by maladaptive attitudes towards health and medicine (e. g., 'health is the absence of disorders', 'pain in the epigastric region is stomach ulcer'). Moreover, their understanding of associations between somatic and mental processes may be superficial and even lacking. Such a cognitive assessment of actual state by patients with SDs determines suspicion and anxiety regarding bodily perception and contributes to the development of hypochondriacal fabrication.

Excessive anxiety towards existing disorders is closely associated not only with the lack of patients' cognitive representations of the disease, but also with specific features of their bodily experience, which is also an important factor for the development of a disharmonious attitude towards the disease (Glazyrina, Solodkov, Kulygin, Yusupov, & Yatmanov, 2016; White, McDonnell, & Gervino, 2011; Rasskazova, 2013). Thus, according to T. D. Vasilenko, negative affect with difficulties in expressing emotions, as well as the tendency to interpret physiological sensations as pathological ones prevail in the structure of bodily experience in patients with somatization disorders (Vasilenko & Mangushev, 2018; Yundalova & Nikolaevskaya, 2017).

Studying the characteristics of attitudes towards the disease in patients with somatization disorders, Chizhova (2012) examined anxiety/depressive mood in these patients. Hypochondriac and neurasthenic types of attitudes toward the disease were the predominant ones.

According to Mendelevich and Solov'eva (2002), the phenomenon of 'flight into illness', which is characteristic of SDs and other neurotic disorders, represents an avoidance of a sober assessment of reality and an inability to resolve an internal conflict.

Thus, based on the theoretical and methodological analysis of literature on this problem, we can conclude that various components form the basis for the maladaptive type of the attitude towards the disease in patients with SDs. The clinical features of the disease itself, realization of their frustrating characteristics and threats, related cognitive distortions, emotional disturbances, specific characteristics of internal bodily experience, and disharmonious types of attitudes towards the disease have a significant impact.

In this study, we diagnosed the types of attitudes towards the disease at the individual level and also examined how the types of attitudes towards the disease differ in women with in women with different durations of somatization disorders.

This study aimed to investigate the types of attitudes towards the disease in patients with different durations of somatization disorders.

Methods

The 1st group consisted of women with somatization disorder duration of less than 1 year (at the initial visit to a psychiatric institution), $n = 28$. The 2nd group consisted of women with somatization disorder duration between 1 year and 5 years (re-hospitalized), $n = 28$. The mean age was 44.5 years in both groups. In the 1st group there were more working patients (88.8 % and 55.5 %, respectively). The number of unmarried women with higher education was also higher in this group of patients (77.7 % and 33.3 %, 44.4 % and 11.1 %, respectively). In both samples, most women had children (88.8 % and 77.7 %). The somatization disorder duration was less than 1 year in the 1st group (the initial visit was in 2018–2019) and between 1 year and 5 years in the 2nd group (the initial visit was in 2012–2017).

To diagnose the types of attitudes towards the disease in patients with SDs, we used the technique for assessing the Type of Attitudes Towards the Disease (TATD) by L. I. Wassermann et al. The TOBOL is based on the clinical and psychological typology of attitudes towards the disease proposed by A. E. Lichko and N. Ya. Ivanov in 1980. They distinguished 12 types of attitudes towards the disease, which fell into (a) the conditionally adaptive block (harmonious, ergopathic, and anosognosic types), (b) the block of an intrapsychic orientation (anxious, hypochondriac, neurasthenic, apathetic, and melancholic types), and (c) the block of interpsychic orientation (egocentric, sensitive, dysphoric, and paranoid types). The last two blocks are characterized by disorders of mental and social adjustment. We also diagnosed three possible types of attitudes towards the disease including the 'pure' type (when 1 type dominates), the 'mixed' type (when 1–3 types dominate), and the 'diffuse' type (when more than 3 types dominate) (Wasserman, Iovlev, Karpova, & Vuks, 2005).

Results

During the experimental study we examined the differences in the types of attitudes towards the disease in women with different durations of somatization disorders. The distribution of characteristics was non-normal; we used the non-parametric Mann–Whitney U-test to calculate the results.

Among the 12 possible types of attitudes towards the disease the sensitive type alone had statistically significant differences at a high level of statistical reliability. Table 1 demonstrates a comparative analysis of the types of attitudes towards the disease in the group of women with different durations of somatization disorders.

The sensitive type of attitude towards the disease with an interpsychic orientation is characterized by difficulties in social adjustment that are associated with disorders of interpersonal interaction and premorbid personality characteristics.

Unlike patients suffering from SDs less than 1 year, those with somatization disorder duration more than 1 year tend to experience anxiety and concern over the possible unfavorable impression that others may have about their illness. Women with a pronounced sensitive type of attitudes towards the disease do not want others to show pity for them and afraid to be a burden to them. They are characterized by vulnerability and mood swings fluctuations associated with interpersonal contacts. We suggest that the sensitive type of attitude towards the disease that prevails in patients with somatization disorder duration of more than 1 year can be associated with both the stigmatization phenomenon and the desire to look like a healthy person in presentations of others. Figure 1 demonstrates the results.

Table 1

Comparative analysis of the types of attitudes towards the disease in patients with different durations of somatization disorders

| <u>Variables</u> | <u>p-level</u> | <u>Mean scores (< 1 year)</u> | <u>Mean scores (> 1 year)</u> |
|------------------|----------------|----------------------------------|----------------------------------|
| Harmonious | p = 0,451285 | 8,22222 | 13,55556 |
| Ergopathic | p = 0,754690 | 17,33333 | 16,11111 |
| Anosognosic | p = 0,203006 | 9,88889 | 0,44444 |
| Anxious | p = 0,214710 | 14,33333 | 19,22222 |
| Hypochondriacal | p= 1,000000 | 16,00000 | 15,00000 |
| Neurotic | p = 0,506923 | 16,33333 | 12,55556 |
| Melancholic | p = 0,787628 | 10,00000 | 8,77778 |
| Apathetic | p = 0,893584 | 7,66667 | 6,22222 |
| Sensitive | p = 0,028503** | 18,55556 | 33,55556 |
| Egocentric | p = 0,626136 | 13,00000 | 12,44444 |
| Paranoic | p = 0,329132 | 6,22222 | 8,77778 |
| Dysphoric | p = 0,690496 | 8,55556 | 10,00000 |

Legend:
 * – differences were found at the level of the statistical trend ($0.05 < p \leq 0.1$);
 ** – differences were found at a reliable level of statistical significance ($0.01 < p \leq 0.05$);
 *** – differences were found at a high level of statistical significance ($p \leq 0.01$).

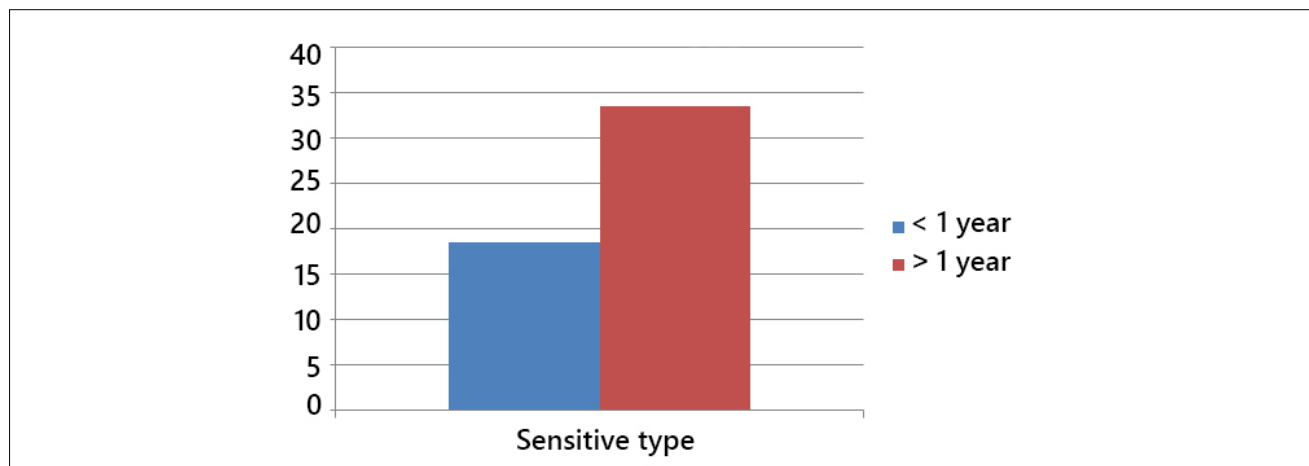


Figure 1. Histogram of differences in mean scores of the sensitive type of attitude towards the disease in women with somatization disorder duration of more than 1 year

Further, we carried out a comparative analysis of the frequency of occurrence of types of attitudes towards the disease in terms of 'preservation/impairment of mental and social adjustment' in women with different durations of somatization disorders using the Pearson χ^2 -test. Table 2 shows the results of the study.

| Orientation | Disease duration | |
|--|------------------|-------------|
| | (< 1 year) | (> 1 year) |
| Intrapsychic | 69,6 % (16) | 12,5 % (3) |
| Interpsychic | 0 % (0) | 45,8 % (11) |
| Conditionally adaptive | 8,7 % (2) | 12,5 % (3) |
| Intrapsychic, interpsychic | 21,7 % (5) | 12,5 % (3) |
| Interpsychic, conditionally adaptive | 0 % (0) | 12,5 % (3) |
| Intrapsychic, interpsychic, conditionally adaptive | 21,7 % (5) | 21,7 % (5) |
| Total | 100 % (28) | 100 % (28) |
| p-level | p = 0,00256*** | |

Legend: * – differences were found at the level of the statistical trend ($0.05 < p \leq 0.1$);
 ** – differences were found at a reliable level of statistical significance ($0.01 < p \leq 0.05$);
 *** – differences were found at a high level of statistical significance ($p \leq 0.01$).

We found statistically significant differences in the frequency of occurrence of types of attitudes towards the disease with interpsychic and intrapsychic orientations of personal reaction to the disease.

Thus, in women with somatization disorder duration of more than 1 year, the frequency of occurrence of the interpsychic orientation of personal reaction to the disease is higher than in patients suffering from SDs for less than 1 year.

The intrapsychic orientation of personal reaction to the disease, which may be associated with the 'flight into the disease' and negatively affects the emotional sphere of patients (prevalence of anxiety, depression, irritable weakness reactions) is characteristic of women with somatization disorder duration of less than 1 year. The results are shown in Figures 2 and 3.

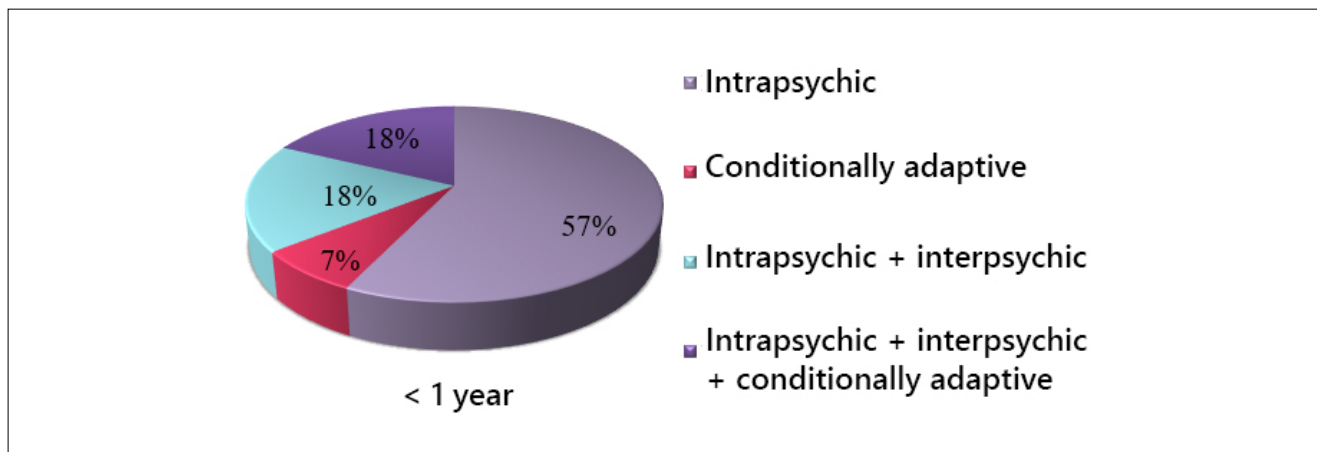


Figure 2. Distribution of the frequency of occurrence of different types of orientations of personal reaction to the disease in patients with somatization disorder duration of less than 1 year

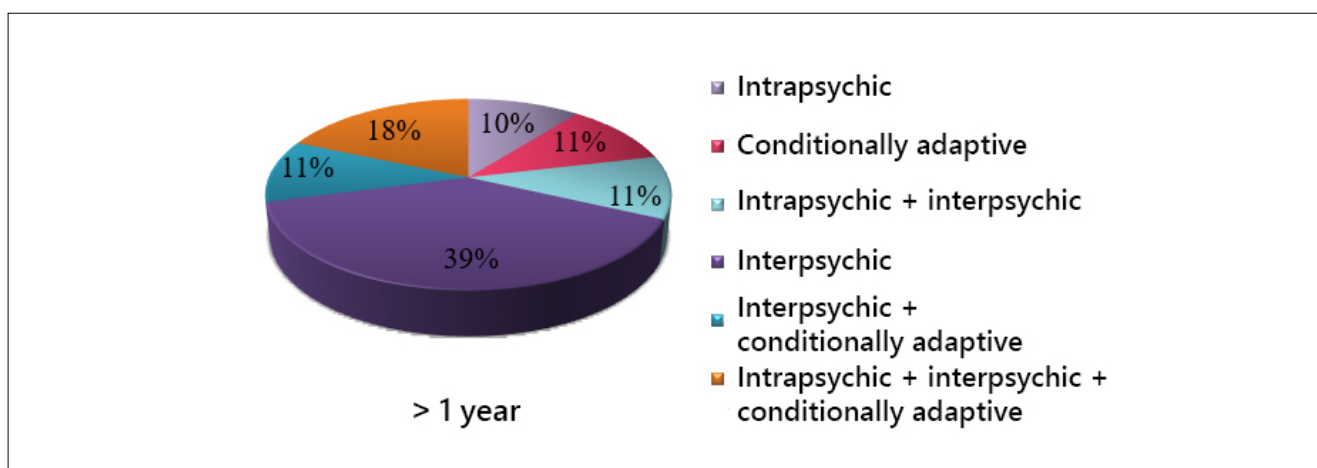


Figure 3. Distribution of the frequency of occurrence of different types of orientations of personal reaction to the disease in patients with somatization disorder duration of more than 1 year

Thus, the results indicate that in both groups the respondents have disorders of mental and social adjustment.

Discussion

In general, the data indicate the presence of a disharmonious attitude towards the disease in women with different durations of SDs.

We obtained statistically significant differences in the sensitive type of attitude towards the disease between the two groups of patients, which indicates the presence of a disharmonious attitude towards the disease in women suffering from SDs for more than 1 year. When studying the frequency of occurrence of possible types of orientations of personal reaction to the disease in patients we also found statistically significant differences. Compared to patients suffering from SDs less than 1 year having intrapsychic orientation of attitudes towards the disease, the types of attitudes towards the disease with an interpsychic orientation are characteristic of patients with somatization disorder duration for more than 1 year. Such an attitude towards the disease in women with somatization disorder duration of more than 1 year may be explained by premorbid personality traits, 'stigmatization' and 'self-stigmatization' phenomena, which needs further consideration (Elfimova & Elfimov, 2009).

We assume that the 'flight into the disease' pronounced in patients with the disease duration of more than 1 year may be explained by their focus on painful sensations, the development of 'hypochondriac' characteristics of personality, and getting 'secondary benefit' from the disease.

Our results do not contradict the data of numerous studies aimed at studying the internal picture of the disease in patients with neurotic disorders, when they have neurasthenic, hypochondriac, and anxiety types of attitudes towards the disease corresponding to the intrapsychic orientation of personal reaction to the disease (Bryabrina, 2009; Glazyrina et al., 2016; Mikhailova, Yastrebov, & Enikolopov, 2002).

Women with somatization disorder duration of less than a year are characterized by 'internal experience' of the disease, emotional concentration on themselves and their symptoms. As a rule, patients adjust to their disease, which can shift the focus of their attention from themselves to others and for deriving benefit from their symptoms in communication with other people; this is typical for patients suffering from SDs for a long time (Merskey, 2004).

The characteristics of attitudes towards the disease that we have identified may help identify directions for psychological correction aimed at creating a harmonious attitude towards the disease and treating SDs. Its objectives are as follows:

- Shaping the ideas of the influence of psychological factors on the development of somatization disorders.
- Increasing the ability to recognize, differentiate, and understand emotions and the accompanying cognitive processes.
- Maintaining adaptive behavior under the conditions of the disease.
- Developing social skills and interpersonal interaction.

Besides, our findings can help identify targets for further psychotherapeutic correction, including:

1) The process of correction of the level of personal reaction to the disease in women suffering from SDs for less than 1 year should be aimed at shifting the focus from the process of the 'hypochondriacal' development of personality to the study of internal psychological problems.

2) The process of correction of the level of personal reaction to the disease in women suffering

from SDs for more than 1 year should be aimed at reducing the high level of sensitivity in interpersonal contacts.

Thus, in view of constant and prolonged contacts with medical services, patients suffering from SDs have significant impairments in the social sphere of personal functioning, which is confirmed by the presence of individual disharmonious types of attitudes towards the disease impeding physical and psychological well-being. To provide professional psychological assistance to this category of patients, further research of the structure of attitudes towards the disease will be required. This will help develop a holistic understanding of how the disease contributes to a disharmonious attitude towards the disease, how this attitude changes during the course of the disease, and which 'intervention targets' will need correction.

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No conflict of interest

Meaning-of-Life Orientations and Values in Youth in the Period of Familial Relationships Formation

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Abstract

Introduction. The article is dedicated to values and life meanings in the young people in course of familial relationships formation. The relevance of the topic results from the interest in the relationship of young people, in their building of their own personal life course. The study aims to study the value-meaning characteristics of young people married or searching partners. 61 subjects have been enrolled in the study, aged 18 to 35 years. The authors compared values and life-meanings in youths being married or seeking for a partner.

Methods. Comparative analysis and generalization of theoretical principles were applied; diagnostic techniques were also used: the 'System of life meanings technique', 'Schwartz's Values Survey', 'Questionnaire of self-relation'; Methods of mathematical processing of empirical data: to analyze the main characteristics of the distribution, we used descriptive statistics and the Mann-Whitney U-test.

Results and Discussion. In the group of young men looking for a partner, preferred life meanings were such as searching for life purpose, existential understanding of the one's being, one's place in the society, self-development and self-realization, active interactions with other people. For the married youth, the value 'self-development' was not relevant, what could influence the family integrity, according to authors. Significant values for the married young people were personal safety, protection against external conditions, a tendency towards achievements within the personal or professional field. For the young people looking for a partner, important values were achievement as the evidence of personal growth, self-sufficiency as acceptance, and responsibility for oneself and one's life.

Statistically significant interrelations between values and life meaning in the youth in a period of the familial relationships formation are presented. The study is novel in that it revealed and characterized the life meanings and values of the modern youth, married or looking for a partner.

Keywords

values, value orientations, life meanings, value field, meaning field, youth, human needs, family relationships, partnership

Highlights

► The composition of the leading values differs among young people who are married (safety, achievements, hedonism) or who are searching a partner (achievements, independence, comfort).

- Life meanings are different in young people who are married (rather communicative) and who are in search of a partner (more existential, hedonistic, self-realization).
 - The life meanings and values of married young people or those searching a partner include safety, achievements, hedonism, independence, comfort, stimulation, self-realization, existential values, communication, family.
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Introduction

The modern age is characterized by constant transformation: social, political, economic. A person experiences the uncertainty in various areas of life, is forced to make quick decisions, to keep increasing his/her competitive ability and adapting to current realities. The concepts of success, a successful person, of ways to achieve the success, ideas about personal life, one's inner circle have radically changed and, accordingly, the values and meanings of every person have been transformed. The crisis of spiritual and moral values of society is becoming apparent. And young people demonstrate the ongoing reappraisal and transformation of values and meanings in Russian society, in search of their place in the world, in their life partner requirements. In psychology, meanings and values are defined as personal constructs and fundamental factors determining the choice of a person's life path.

The concept of values and meanings in psychological science has been studying for a long ago. During this time, many different points of view on this issue have accumulated: psychological, philosophical, biological and socio-economic. At the same time, despite the emerging new research data, we could observe the relevance of the trajectories set by Uznadze (1961), who introduced the term 'installation', by Rubinshtein (2019), using the concept of 'dynamic personality trend,' by A. N. Leont'ev (1971), D. A. Leont'ev (Leont'ev, 2007; Leont'ev, Taranenko, & Kalashnikova, 2017), using the wording 'life meanings'. Modern extensions of the life-meanings areas studied are as follows: the person's choice of inconsistent values, resulting in a non-optimal meaning of life (Karpinskii, 2017); life-meaning orientations of personality, which determine the structure and content of the concept of personality and further influence the meaningful life strategies of personality, characterized by personal and professional formation in personal, family, professional life (Kara & Kruteleva, 2012; Kara & Kas'yanova, 2017; Sukhareva & Filippova, 2018); consideration of meaning-building strategies: they all represent a way of forming personal meanings and afterwards build a picture of the integrity of the personality, which includes various areas (personal, family, professional (Abakumova, Godunov & Pen'kov, 2019), etc. Despite diverging opinions, most authors recognize the paramount role of personal values in organizing the person's life and activity – every person has a need for values that would guide his actions and control his feelings (Fromm, 2018; Frankl, 1990).

Russian researchers and researchers from other countries (Utyuganov, Yanitskii, & Seryi, 2019; Alekseeva, 1984; Ermak, 2016; Baradakova, 2017; Volynets, 2017; Zubova & Kirienko, 2018; Kalugin,

2017; Kolesov, Smolonskaya, & Smolonskii, 2017; Lifshits, 2019; Lobza, Kononchuk, & Egamberdieva, 2017; Butakova & Vyazigina, 2017; Damasio & Koller, 2015; Datu, 2016; Donina, Salikhova, Aryabkina, Chernova, & Kovardakova, 2019; Knyazeva et al., 2019; Litvinova & Kolomoichuk, 2016; Park & Baumeister, 2017; Sun, Fan, Sun, Jiang, & Wang, 2019; and others) pursue investigations of values included in the personality structure. Researchers postulate the association between values and needs, where a need works as an initiator of a value formation, and, on the other side, the need is built due to values. The striving of humans for meaning, the search of the meaning of life is one of basic needs of man. Various sciences – psychology, philosophy, linguistics, culturology – highlight the fact that meanings are determinates that control regulation of an individual's activity is convincingly reflected, and meanings: personal meanings, life meanings, – are the main authority, mastering all other vital manifestations of a personality. It is believed that the meanings are a subjective reflection of the attitude of people to the world, to the objects for which sake they engage to all their activities. Meanings act as basic human needs. The presence of meanings determines the further action of a person, including his/her acceptance or rejection of him/herself, building relationships with other people in different social groups. One of significant aspects for a person presents his immediate environment: the family. The meaning and the value of family in the modern society point out the complexity and ambiguity of the topic. The meaning of family and its human values in the modern society are drastically changed. Many different types of family and family relationships exist nowadays, which betrays shifts in axiological sphere of the modern humans.

Our study postulated that values and life meanings of women and men would change with a change in their marital status.

Methods

Theoretical methods (comparative analysis of ideas and concepts, a generalization of theoretical principles) and empirical one (testing) were used. As diagnostic tools we used 'System of life meanings' technique (Kotlyakov, 2003); 'Schwartz's Value Survey' (Karandashev, 2004; Schwartz et al., 2012), 'Questionnaire of Self-Relation' by V. V. Stolin and S. R. Pantileev (Glukhanyuk & Shchipanova, 2013).

Methods of mathematical processing of empirical data included descriptive statistics (main distribution characteristics), and Mann–Whitney U-test.

Sample

The study involved 61 people aged 18–35 years, who were divided into 2 groups. Group 1 included 13 women and 18 men being married, group 2 included 14 women and 16 men looking for a partner.

Results and Discussion

The study examined the life meanings and values of young women and men married or looking for a partner, against the backdrop of changes in the modern society, social environment, and technologies which inevitably affect psychological characteristics of a person. With the 'System of life meanings' technique (V. Yu. Kotlyakov), using descriptive statistics to analyze the data, we identified the significance of life meanings in married women and men, and in young people seeking for a partner. It is noteworthy that in the group of women and men seeking for a partner, the

dominant positions took 'existential', 'hedonistic', 'self-actualization', 'family', and 'communicative' life meanings: the value of the life as such, the desire to receive pleasure from it, to self-realize, as well as a profound need to care about one's own family, to find the personal destiny, freedom of choice, to experience the value of life.

The fact should be noted that the parameter 'family meanings' is expressed differently in women and men, both in the group of seeking a partner and in the group of married people. For men throughout the sample in both groups, 'family' meanings are equally highly significant. On the contrary, women being in search for a partner do not care much of family meanings; by contrast, for married women the family values acquire a paramount importance, which betray significant changes in a woman's life.

Significance of status meanings in men changes dramatically: that is, for men looking for a partner, 'status' meanings rank the last place in importance, while after the marriage; the significance of the meaning of the 'status' parameter significantly increases, shifting to the third place. For married women and men, the significance of the meaning of 'self-realization' noticeably reduced; however, 'communicative' meanings, on the contrary, get preponderance.

Test of significance in the differences between the two samples – those in search and those married – showed statistically significant differences in the 'self-realization' scale ($U_{emp} = 287$, $p \leq 0.01$): when changing social status the significance of one's achievements shifts on a scale of relevance to lower positions. Next, we examined the values of these groups using the 'Value Survey' technique (S. Schwartz). The Mann–Whitney U-test revealed statistically significant differences between these groups in such scales as 'stimulation' ($U_{emp} = 310.5$ at $p = 0.025$) and 'hedonism' ($U_{emp} = 253.5$ at $p = 0.02$). Quality analysis reveal such a structure of significant values: thus, the values of stimulation work as a need to receive and experience various life situations, to maintain meaningful activity, to experience novelty in various activities; at the same time, acquired social experience possesses great importance, influencing individual characteristics of a person. Another type of values – hedonistic values – basically contain a motivational goal aimed to enjoy life, enjoy a broad range of emotions, sensations, which this is typical for young people in the modern public life reality.

It is noteworthy that in the group of people looking for a partner such values are expressed as 'achievements', 'independence', 'comfort', manifested in the achievement of personal success, significance on the social scale, and the acquisition of professional competencies. Demonstration of social competence (which is the content of this value) in the prevailing cultural standards entails social approval. Since this is a group of young people, they are characterized by a desire and a drive for personal independence demonstration; they prefer to assume responsibility for themselves, to feel like a mature person. This age period accounts for the social formation of a person and, as a result, restraint and control their negative emotional manifestations, supporting development of the self-discipline, the delicate handling with people of different statuses, etc.

In the group of married people such values were preponderant as 'safety', 'achievements', 'hedonism', manifested in stability, harmony in relationships, in the striving to build their own environment with more conservative conditions, to be able to understand and predict the behavior and reactions of others, which implies safety for themselves and for their families, health maintenance, a certain social standing. Personal achievements are considered from the perspective of existing competencies and positive reactions from society, approval and acceptance; cultural and national standards are adopted. Young married people understand and appreciate the pleasure of life in the context of their immediate circle.

Next, we examined the possibility to generalize certain interrelations revealed in our sample of respondents for the entire population of youth. Using Spearman's correlation analysis, we found that there is a reliable association between altruistic meanings and such values as conformity, traditions, kindness, universalism, independence, hedonism, power and security. The intensity of altruistic meanings correlated inversely with such values as comfort, tradition, kindness, universalism, and independence. The lower intensity of altruistic meanings was associated with more markedly expressed above mentioned values. The inverse more demonstrative was correlation between altruistic meanings and traditions ($p < 0.05$, $r = -0.51$); and between altruistic meanings and kindness ($p < 0.05$, $r = -0.42$). Also, a moderate inverse correlation could be seen between altruistic meanings and comfort ($p < 0.05$, $r = -0.34$), independence ($p < 0.05$, $r = -0.38$), universalism ($p < 0.05$, $r = -0.30$).

Between existential meanings and kindness there is a direct, moderate correlation ($p < 0.05$, $r = 0.41$). With the increase in one characteristic the other get more pronounced, too. A moderate, direct correlation could be seen between 'hedonistic meanings' and such values as 'kindness' ($p < 0.05$, $r = 0.31$) and 'comfort' ($p < 0.05$, $r = 0.30$). We observe a moderate inverse correlation between meanings of 'self-realization' and values of 'independence' ($p < 0.05$, $r = -0.30$), 'power' ($p < 0.05$, $r = -0.35$). 'Communication meanings' directly moderately correlate with 'traditions' ($p < 0.05$, $r = 0.36$), 'family meanings' inversely correlate with 'comfort', 'kindness', 'safety'. The most pronounced, though, moderate inverse correlation was revealed between 'family meanings' and 'kindness' ($p < 0.05$, $r = -0.55$) and 'family meanings' and 'safety' ($p < 0.05$, $r = -0.55$), respectively. A less pronounced inverse correlation could be observed between 'family meanings' and 'comfort' ($p < 0.05$, $r = -0.43$), and between 'hedonism' and 'cognitive senses' ($p < 0.05$, $r = -0.38$).

The obtained results show that, on the whole, the predominance and reinforcement of the independence of a person shift away the care for others at the expense of oneself (altruism to an insignificant position) in insignificant positions, as a result of the cognitive awareness and control of one's own life. It is interesting that the more a person adheres to a tradition, the less unselfish or altruistic he/she is in his manifestations. Perhaps this is due to the realities of modern society with its clearly defined course of action, determined rules and traditions that are followed and implemented. The modern young people musing on their lives are characterized with the freedom of choice, striving to experience and to bestow love, to assign a meaning to the very life journey, with tendencies to manifestations of humanity and kind-heartedness. Young people are oriented to the well-being, to obtain a rich system of emotions and sensations, to be happy. The significance of family relationships persists, directly related to striving for safety, orientation to common practice, and the family heritage conservation.

Conclusion

The results of the present study show that young people in the current context of a transitive society build their commitment to values and life meanings in accordance with the relevance of existence. Such values and meanings as: 'safety', 'achievements', 'hedonism', 'independence', 'comfort', 'stimulation', 'self-realization', 'existentiality', 'communication', 'family' are becoming increasingly important. This demonstrates the formation of new personal characteristics of young people. More significant positions hold values and life meanings aimed to enjoy the life pleasure, to grow personally and professionally, and to maintain cultural standards. At the same time, the problems of

the modern society lead young people to a different cognitive awareness and to other approaches in building their own family and personal lives.

The prospects for further research are related to the expansion of the sample and the involvement of the information space parameters.

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Meaning-of-life Orientations and Values in Youth...

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The Content of Priority Values Among Military and Civil Retirees with Different Levels of Self-actualization

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Abstract

Introduction. This paper deals with the issues of personal values in relation to the late periods of personal ontogenesis. Self-actualization is a criterion for retirees' adaptive readiness for new conditions of life related to changes in social status. The characteristics of retirees' self-actualization should be considered in the context of the subjective approach. An empirical analysis of the value and meaning characteristics in military retirees tests the hypothesis of their dependence on the level of retirees' self-actualization.

Methods. This study employed the Schwartz Value Survey and the Short Index of Self-actualization. The sample comprised 130 individual participants. The design of this study involved the experimental (n = 65 military retirees) and the control (n = 65 civil retirees) groups.

Results and Discussion. The author compared the characteristics of value and meaning sphere in military and civil retirees. Conformity, traditions, and security are value priorities of military retirees. A significant differentiation of individual value choices was observed in the group of civil retirees. The control and experimental subjects demonstrated statistically significant differences in the following value choices: power, achievement, stimulation, universalism, benevolence, traditions, and conformity.

Independence is a value priority for both military and civil retirees with a high level of self-actualization. Power and stimulation are value priorities for retirees with a low level of self-actualization.

Keywords

values, value and meaning sphere, value priorities, retirement age, military retirees, civil retirees, adaptation, adaptive readiness, self-actualization, levels of self-actualization

Highlights

- Conformity, traditions, and security are diagnosed as specific value priorities for military retirees.
- Independence in thinking and choosing methods of activity, self-control and self-management skills are diagnosed as value priorities for retirees with a high level of self-actualization, regardless of their retirement status.
- Values which implementation may be restrained after reaching retirement age, including the desire to achieve a high social status, dominance, the desire for novelty and deep feelings are more pronounced among retirees with a low level of self-actualization.

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Introduction

The concept of 'value' is extremely diverse and multi-level. In foreign psychology, the issues of the value and meaning sphere are examined in the works of A. Maslow, J. G. Mead, G. Allport, C. Rogers, M. Rokich, M. Rosenberg, M. Smith, V. Frankl, E. Fromm, L. Festinger, E. Faris, F. Haider, E. Spranger, etc. In Russian psychology, certain issues of values are presented in the works of A. N. Leont'ev, S. L. Rubinstein, D. A. Leont'ev, M. I. Bobneva, L. I. Bozhovich, V. V. Vodzinskaya, O. I. Zotova, B. C. Mukhina, etc.

Personal values underlie the generation of life meanings (V. A. Yadov, B. S. Bratus, D. A. Leont'ev, A. G. Asmolov, etc.). Value and meaning regulation is a system-forming factor that determines personal self-realization or, conversely, dissatisfaction with the process and results of activity, loss of life guidelines, moral and emotional losses (V. S. Merlin, S. L. Rubinshtein). The dynamics of values reflects changes in personal meaning in life. Changes in life circumstances inevitably entail a reassessment of life values, the transformation and modification of life meanings.

Old age is the period of significant changes in individual living conditions individuals. Most researchers of the late period of personal age-related development (E. Erickson, B. G. Anan'ev, V. Frankl, etc.) associate this period, first of all, with a reassessment of the values and meaning of life. Research interest in the issues of personal value meaning characteristics in old age is obvious (Antsyferova, 2006; Elishev, 2010; Ermolaeva, 2002; Kovaleva, n.d.; Kurulenko, n.d.; Leont'ev, 1996; Mandel', 2015; Sakharova, Umanskaya, & Tsvetkova, 2016; Sokolova & Beretskaya, 2017; Styuart-Gamil'ton, 2010; Khalina, 2009; Bilsky & Schwartz, 1994; Jones, Peskin, Wandeler, & Woods, 2019; Kleineidam et al., 2019; Juang et al., 2018; Löckenhoff & Rutt, 2017; Borg, Hertel, & Hermann, 2017).

Along with other components of individual inner world such as attitudes, ideals, etc., value orientations are considered as components of personal resources for adaptation to changing life conditions (Vyzulina & Yas'ko, 2015; Khalfina, 2018; Nikitin & Freund, 2019; Jones et al., 2019; Teshale & Lachman, 2016; Stawski et al., 2019).

The resource of adaptation is defined as individual qualities that contribute to achieving the desired results by realization of his/her potential capabilities. As stable personal formations, values determine both the content of the goals of adaptation and the means of their achievement. After retirement, individuals find themselves in new conditions of life, to which they need to adapt. Consequently, they need to find new meanings and develop new models of behaviors that are appropriate to changing conditions.

Currently, new concepts reveal still unexplored aspects of the complex and multifaceted phenomenon of psychological adaptation. Personal adaptive readiness is one of such concepts, which represents personal meta-formation ensuring personal readiness for effective interaction with various dynamically changing environments (social, educational, professional, etc.) in the

'personality – environment' dynamic system, viability, and competitiveness in modern dynamically changing conditions. Adaptation readiness is interpreted as a subject's manifestation of his/her potential abilities in the process of experiencing social influences (Arendachuk, 2013; Grigor'eva, 2014; Khmel'kova, 2017; Shamionov, 2015). It seems important to understand the personal and psychological determinants that determine the formation of adaptive readiness in retirees for effective interaction with a changing environment.

In the context of adaptive readiness, personal qualities that ensure successful adaptation in various situations are considered as personal new formations, where personal value and meaning is an element of its structure (Arendachuk, 2013; Khmel'kova, 2017; Shamionov, 2015). The study of the personal and psychological determinants of personal adaptive readiness in the post-labor period of life has a perspective based on the traditions of the subjective paradigm that has developed in psychology (Rubinstein, 2003). If we consider the late period of life, retirement age, as a period of considerable changes, then an elderly person, a retiree, is the subject of changes in the conditions of his/her being. Personal subjectivity is a level indicator (Rubinstein, 2003). This allows us to use personal key characteristics, such as activity, self-determination, self-actualization, self-development, self-improvement, to assess the level of adaptive readiness of individuals in situations of changes. In the context of the current study, we consider the level of self-actualization as one of the criteria for adaptive readiness among elderly persons.

Aim of the study

The presented part of empirical study aimed at testing the hypothesis of the specific characteristics of the value and meaning sphere in military retirees with different levels of self-actualization, which are the criteria for adaptive readiness for a new life situation associated with changes in social status.

Methodological and theoretical basis of the study

The methodological considerations relevant to the present study were general philosophical principles of the unity and interconnection of the phenomena of the material and spiritual worlds, as well as interdependence among the man, activity, society, principles of activity, development, and determinism, considered as the dependence of mental phenomena on the factors that generate them.

The theoretical basis of the study was suggested in terms of certain provisions of activity theory (A. N. Leont'ev); concepts of the subject (K. A. Abul'khanova-Slavskaya, A. A. Brushlinskii, S. L. Rubinstein, etc.), subject-activity (E. A. Klimov, O. G. Noskova, B. A. Yas'ko, etc.), subject-being (V. V. Znakov, Z. I. Ryabikina, G. Yu. Fomenko, etc.) approaches in personality psychology; psychological adaptation theories (Yu. A. Aleksandrovskii, B. G. Anan'ev, G. A. Ball, F. B. Berezin, B. G. Bushurova, I. I. Mamaichuk, Yu. L. Neimer, A. V. Petrovskii, A. A. Rean, S. I. Stepanova, M. G. Yaroshevskii, etc.); concepts of personal adaptive readiness of (M. V. Grigor'eva, R. M. Shamionov, I. V. Arendachuk, A. R. Vagapova, L. E. Tarasova, E. E. Bocharova, O. V. Khmel'kova, etc.); psychology of the late stage of ontogenesis (L. S. Vygotskii, B. G. Anan'ev, L. I. Antsyferova, A. A. Rean, E. E. Sapogova, G. S. Nikiforov, N. E. Vodop'yanova, O. O. Hoffman, M. V. Ermolaeva, O. V. Krasnova, N. S. Pryazhnikov, etc.); basic approaches and concepts of the theories of value and meaning formations as the psychological 'nucleus' in individuals (S. L. Rubinstein, D. A. Leont'ev, A. Maslow, V. Frankl, etc.).

Methods

The study sample comprised 130 respondents of retirement age living in the Krasnodar Territory and the Republic of Crimea. The design of this study involved the experimental (n = 65 military retirees) and the control (n = 65 civil retirees) groups.

For the experimental group, the gender proportion was as follows: 89.2 % male (n = 58) and 10.8 % female (n = 7) respondents. For the controls, the gender proportion was as follows: 86.2 % male (n = 56) and 13.8 % female (n = 9).

The mean age of experimental subjects was 62.09 ± 10.4 years and 61.11 ± 9.2 years for the controls.

Among military retirees, 40 % of the respondents (n = 26) currently worked. The proportion of non-working military retirees was 60 % (n = 39). In the civilian sample, the proportion of working retirees was 27.7 % (n = 18); 72.3 % retirees were non-working (n = 47).

Table 1 shows primary descriptive age-related characteristics of the statistics in the experimental and control groups.

Table 1

Primary descriptive age-related characteristics of the statistics in the experimental and control samples

| <u>Characteristics of statistics</u> | <u>Experimental group</u> | <u>Control group</u> |
|--------------------------------------|---------------------------|----------------------|
| M (\bar{x}) | 62,09 | 61,11 |
| σ | 10,4 | 9,2 |
| Mo | 70 | 70 |
| Me | 62,5 | 61,2 |
| As | -0,41 | -0,33 |
| Ex | -0,22 | -0,25 |

To achieve our goals, we used the following diagnostic tools:

Schwartz Value Survey for studying dominant personality values. S. Schwartz proceeded from the assumption that the most significant substantive aspect underlying the differences between values is the type of motivational goals that they express. Therefore, he grouped individual values into types of values in accordance with the community of their goals. As a result, ten basic different motivational types were described, in accordance to their main goals (Karandashev, 2004; Schwartz, 1992).

In accordance to the technique developed by the author, for each subject we calculated a mean score in two parts ('Overview of values' and 'Personality profile'). In accordance with the mean score for each type of value, their rating ratio was established. Each type of value was assigned a rank from 1 to 10. The minimum rank (10) was obtained by those values that scored the highest average score. The maximum rank (1), respectively, was obtained by those values that scored the lowest average score. According to the author's interpretation, those values that obtained the highest ranks (from 1 to 3) are most significant for the subject. Values with ranks from 7 to 10 are less significant (Karandashev, 2004).

Respondents' self-actualization levels were diagnosed using the *Short Index of Self-actualization* (Hjelle & Ziegler, 2003; Jones & Crandall, 1986). The scale consists of 15 statements. The authors of the questionnaire confirmed a positive correlation of the Short Index of Self-actualization with all the values of the Personal Orientation Inventory (POI), designed to measure various characteristics of self-actualization in accordance with the concept of A. Maslow. The scale allows us to differentiate the level of self-actualization as high, medium or low.

The statistical analysis of the obtained empirical data was performed using the IBM SPSS Statistics 25 computer statistical program.

Results and Discussion

At the first stage of the study, we diagnosed the individual values of the control and experimental subjects using the Schwartz Value Survey (see Tables 2 and 3).

| Values | $M(\bar{x})$ | σ | Ex | As |
|--------------|--------------|----------|-------|-------|
| Power | 5,41 | 3,24 | 0,10 | -2,26 |
| Achievement | 7,61 | 2,9 | -0,63 | -0,8 |
| Hedonism | 7,73 | 2,07 | -1,17 | 1,97 |
| Stimulation | 6,13 | 3,4 | 0,37 | 1,13 |
| Independence | 6,10 | 3,92 | -0,56 | -2,08 |
| Universalism | 6,03 | 3,13 | 0,09 | -1,34 |
| Benevolence | 6,51 | 4,01 | -0,16 | 2,34 |
| Traditions | 3,87 | 3,3 | -0,83 | 0,63 |
| Conformity | 2,67 | 2,6 | -0,29 | 2,06 |
| Security | 4,06 | 2,65 | 0,25 | -1,38 |

Table 3

Descriptive characteristics in the control subjects (value and meaning characteristics, Schwartz Value Survey)

| <u>Values</u> | <u>M</u> (\bar{x}) | σ | <u>Ex</u> | <u>As</u> |
|---------------|------------------------|----------|-----------|-----------|
| Power | 6,83 | 2,33 | 0,21 | -2,44 |
| Achievement | 6,26 | 3,01 | -0,67 | 0,92 |
| Hedonism | 7,01 | 3,76 | -1,43 | 2,16 |
| Stimulation | 5,27 | 2,07 | -1,65 | 1,55 |
| Independence | 6,48 | 3,01 | 0,39 | -1,93 |
| Universalism | 4,63 | 3,88 | 0,99 | -1,72 |
| Benevolence | 4,22 | 2,5 | 0,49 | -2,84 |
| Traditions | 5,99 | 4,12 | -0,95 | -0,87 |
| Conformity | 5,43 | 3,75 | -0,39 | 2,33 |
| Security | 5,19 | 2,98 | 0,65 | -1,19 |

Taking into account average ranks, we established a rating of values and compared them in each group of respondents (Table 4).

Table 4

Rating of values in control and experimental subjects

| <u>Values</u> | <u>Military retirees</u> | | <u>Civil retirees</u> | | $t_{emp.}$ | <u>Significance of differences</u> |
|---------------|--------------------------|-------------|------------------------|-------------|------------|------------------------------------|
| | <u>M</u> (\bar{x}) | <u>Rank</u> | <u>M</u> (\bar{x}) | <u>Rank</u> | | |
| Power | 5,41 | 4 | 6,83 | 9 | 3,99 | $p \leq 0,01$ |
| Achievement | 7,61 | 9 | 6,26 | 7 | 3,06 | $p \leq 0,01$ |
| Hedonism | 7,73 | 10 | 7,01 | 10 | 0,65 | insignificant |
| Stimulation | 6,13 | 7 | 5,27 | 4 | 3,13 | $p \leq 0,01$ |
| Independence | 6,10 | 6 | 6,48 | 8 | 0,99 | insignificant |
| Universalism | 6,03 | 5 | 4,63 | 2 | 2,97 | $p \leq 0,01$ |
| Benevolence | 6,51 | 8 | 4,22 | 1 | 3,06 | $p \leq 0,01$ |
| Traditions | 3,87 | 2 | 5,99 | 6 | 2,54 | $p \leq 0,05$ |
| Conformity | 2,67 | 1 | 5,43 | 5 | 2,29 | $p \leq 0,05$ |
| Security | 4,06 | 3 | 5,19 | 3 | 1,33 | insignificant |

The distribution of average ranking values in the group of military retirees is between 7,73 and 2,67.

The following values had the highest level of significance for the military retirees (1–3 ranks in the rating):

1. *Conformity*. The defining motivational goal of this type is to restrain and prevent actions, as well as inclinations and incentives for actions that can harm others or do not meet social expectations. This value is derived from the requirement to restrain tendencies that have negative social consequences (obedience, self-discipline) (Karandashev, 2004).
2. *Traditions*. Any social groups develop their own symbols and rituals, which are reflected in traditions and customs. The traditional way of behavior becomes a symbol of group solidarity, an expression of common values. Traditions are realized through the adoption of and adherence to certain norms of behavior. The motivational goal of this value is respect, acceptance of customs, respect for traditions and adherence to them (Karandashev, 2004).
3. *Security*. The motivational goal of this type is security for others and oneself, the stability of society and relationships. According to Schwartz, there is a generalized type of value 'security' – values related to collective security that are largely associated with security for individuals (social order, family security, national security, sense of belonging, and health) (Karandashev, 2004).

The lowest level of significance (7–10 ranks in the rating) was diagnosed for such values as stimulation, benevolence, achievement, and hedonism.

Distribution in average ranks of diagnosed values was between 6,99 and 4,22 in the group of control subjects. This suggests considerable differentiation in individual value choices among the civil retirees.

The following values had the highest level of significance for the civil retirees (1–3 ranks in the rating):

1. *Benevolence*. This is a narrower 'prosocial' type of values, oriented towards well-being in everyday interaction with loved ones. This type of values is considered to be derived from the need for positive interaction, the need for affiliation. Its motivational goal is to preserve well-being in those who are in personal contact with an individual (usefulness, condescension, honesty, responsibility, friendship, and mature love) (Karandashev, 2004).
2. *Universalism*. The motivational goal of this type of values is understanding, tolerance, and protection of well-being. The motivational goals of universalism are derived from those survival needs of groups and individuals that become necessary when people come into contact with someone outside their environment or when the primary group expands its borders (Karandashev, 2004).
3. *Security*.

The lowest level of significance (7–10 ranks in the rating) was diagnosed for such values as achievement, independence, power, and hedonism (Karandashev, 2004).

Using the statistical Student's t-test we compared the two groups to establish significance of differences by each of the diagnosed values. The statistical significance of the differences between the compared groups was confirmed by such values as power, achievement, stimulation, universalism, benevolence, traditions, and conformity. Such values as power ($p \leq 0.01$) and traditions ($p \leq 0.05$) demonstrated higher ratings and, correspondingly, a higher level of significance in the group of military retirees (compared to civil ones). For such values as achievement,

stimulation, universalism and benevolence, higher ratings were observed in the control group, which indicates their greater importance for the civil retirees compared to the military ones.

Diagnostic results obtained after the use of the Short Index of Self-actualization indicated the presence of subjects with different levels of self-actualization in both groups. In the experimental group of military retirees, a high level self-actualization was observed in 18.4 % of respondents ($n = 12$), an average level of self-actualization was diagnosed in 50.8 % of respondents ($n = 33$), and 30.8 % of respondents (20 people) demonstrated a low level of self-actualization. In the control group, 16.9 % of civil retirees ($n = 11$) had a high level of self-actualization, an average level of self-actualization was observed in 44.6 % of respondents ($n = 29$), and 38.5 % of respondents ($n = 25$) demonstrated a low level of self-actualization.

The test carried out using the methods of parametric statistics (Fisher's angular transformation criterion, φ^*) did not reveal any significant differences between the groups by this characteristic. The distribution of respondents in the experimental and the control groups by the levels of self-actualization does not have a pronounced specificity related to the characteristics of their retirement status.

We compared value priorities among respondents with different levels of self-actualization from both groups. Independence was the most significant value ($M(\bar{x}) = 2.07$) in the group of military retirees with a high level of self-actualization. For respondents with a low level of self-actualization, such values as power ($M(\bar{x}) = 4.12$) and stimulation ($M(\bar{x}) = 4.65$) obtained the highest ratings. Table 5 presents the results.

Table 5

Value priorities of military retirees with high and low levels of self-actualization

| Values | Average ranks $M(\bar{x})$ of values in groups of military retirees with high and low levels of self-actualization (SA) | | Comparison of military retirees with high and low levels of self-actualization | |
|--------------|---|-----------------|--|---------------|
| | High level of SA | Low level of SA | $t_{emp.}$ | Significance |
| Power | 6,99 | 4,12 | 3,17 | $p \leq 0,01$ |
| Achievement | 8,20 | 6,13 | 3,33 | $p \leq 0,01$ |
| Hedonism | 5,70 | 8,16 | 1,04 | insignificant |
| Stimulation | 6,31 | 4,65 | 3,65 | $p \leq 0,01$ |
| Independence | 2,07 | 7,19 | 3,09 | $p \leq 0,01$ |

Table 5

Value priorities of military retirees with high and low levels of self-actualization

| <u>Values</u> | <u>Average ranks $M(\bar{x})$ of values in groups of military retirees with high and low levels of self-actualization (SA)</u> | | <u>Comparison of military retirees with high and low levels of self-actualization</u> | |
|---------------|---|-----------------|---|---------------|
| | High level of SA | Low level of SA | $t_{emp.}$ | Significance |
| Universalism | 5,44 | 7,73 | 0,33 | insignificant |
| Benevolence | 4,53 | 7,99 | 0,79 | insignificant |
| Traditions | 3,52 | 5,08 | 2,09 | $p \leq 0,05$ |
| Conformity | 3,16 | 6,03 | 0,99 | insignificant |
| Security | 4,12 | 7,7 | 0,33 | insignificant |

We confirmed the statistical significance of differences between the compared groups in such values as power, achievement, and stimulation. These values are more significant for respondents with a low level of self-actualization. The statistical significance of differences between the compared groups in such values as independence and traditions, which, on the contrary, are more significant for respondents with a high level of self-actualization, is also confirmed.

Value priorities of civil retirees with a high level of self-actualization contain independence ($M(\bar{x}) = 3.0$) and benevolence ($M(\bar{x}) = 4.12$). In the group of civil retirees with a low level of self-actualization, value priorities contain achievement ($M(\bar{x}) = 3.01$), power ($M(\bar{x}) = 4.27$), and stimulation ($M(\bar{x}) = 4.35$). Table 6 presents the results.

A statistical comparison between the groups with high and low levels of self-actualization revealed the significance of differences in such values as power, achievement, stimulation, which are more pronounced in the group of respondents with a level of self-actualization. Significant differences between the groups were also observed in such value priorities as benevolence and independence, which are more pronounced in the group of civil retirees with a high level of self-actualization.

The analysis and comparisons revealed the similarity of military and civil retirees with a high level of self-actualization in such a value priority as independence. Power and stimulation were value priorities for both military and civil retirees with a low level of self-actualization. This conclusion is confirmed by a statistical comparison of the value series of military and civil retirees with the same level of self-actualization (Table 7). Significant differences between the compared groups were established only for several diagnosed values. In the group with a high level of

self-actualization, this is benevolence and universalism, which have a higher level of significance among civil retirees. In the group with a low level of self-actualization, these are independence and traditions, which are more significant values for military retirees.

Table 6

Value priorities of civil retirees with high and low levels of self-actualization

| Values | Average ranks $M(\bar{x})$ of values in groups of civil retirees with high and low levels of self-actualization (SA) | | Comparison of civil retirees with high and low levels of self-actualization | |
|--------------|--|-----------------|---|---------------|
| | High level of SA | Low level of SA | $t_{emp.}$ | Significance |
| Power | 8,14 | 4,27 | 3,75 | $p \leq 0,01$ |
| Achievement | 8,01 | 3,01 | 3,76 | $p \leq 0,01$ |
| Hedonism | 6,99 | 7,98 | 0,97 | insignificant |
| Stimulation | 6,42 | 4,35 | 2,71 | $p \leq 0,05$ |
| Independence | 3,0 | 7,98 | 3,42 | $p \leq 0,01$ |
| Universalism | 4,39 | 5,07 | 1,55 | insignificant |
| Benevolence | 4,12 | 5,43 | 2,68 | $p \leq 0,05$ |
| Traditions | 5,9 | 7,54 | 1,12 | insignificant |
| Conformity | 6,01 | 5,22 | 1,99 | insignificant |
| Security | 5,44 | 6,38 | 1,63 | insignificant |

Table 7

Statistical comparison between military and civil retirees with different levels of self-actualization

| Values | Comparison between military and civil retirees with a high level of self-actualization | | Comparison between military and civil retirees with a low level of self-actualization | |
|-------------|--|---------------|---|---------------|
| | $t_{emp.}$ | Significance | $t_{emp.}$ | Significance |
| Power | 1,23 | insignificant | 0,12 | insignificant |
| Achievement | 1,12 | insignificant | 0,74 | insignificant |

Table 7

Statistical comparison between military and civil retirees with different levels of self-actualization

| Values | Comparison between military and civil retirees with a high level of self-actualization | | Comparison between military and civil retirees with a low level of self-actualization | |
|--------------|--|---------------|---|---------------|
| | t _{emp.} | Significance | t _{emp.} | Significance |
| Hedonism | 0,23 | insignificant | 1,56 | insignificant |
| Stimulation | 0,67 | insignificant | 0,33 | insignificant |
| Independence | 0,99 | insignificant | 2,07 | p ≤ 0,05 |
| Universalism | 2,42 | p ≤ 0,05 | 1,42 | insignificant |
| Benevolence | 3,04 | p ≤ 0,01 | 1,29 | insignificant |
| Traditions | 1,23 | insignificant | 2,16 | p ≤ 0,05 |
| Conformity | 1,98 | insignificant | 1,23 | insignificant |
| Security | 0,33 | insignificant | 1,96 | insignificant |

Conclusions

The theoretical analysis enabled us to speak in favour the importance of studying the characteristics of value and meaning sphere of retirees as components of their adaptive readiness for life changes in this period of life. In the context of the subjective approach, the level of self-actualization of retirees is consider as one of the criteria for their adaptive readiness for changes in social status.

The analysis of empirical data enabled us to determine certain specific characteristics of military retirees' value priorities, which may be explained by the features of their previous life and professional experience, compared to civil retirees. A certain similarity of living and professional conditions during the period of military service determines the greater homogeneity among military retirees as a social group compared to civil retirees; it also contributes to more distinct value priorities. According to our research, these are conformity, traditions, and security.

Independent thinking and choosing ways of action, self-control and self-management skills are value and meaning priorities of retirees with a high level of self-actualization, regardless of their status.

The desire to achieve high social status or prestige, control or dominance, the desire for novelty and deep feelings are the value and meaning priorities for both military and civil retirees

with a low level of self-actualization. Obviously, this is explained by limited possibilities of actual implementation of these value priorities during retirement period.

The results obtained in this study may be readily used in practice in the field of psychological support for military personnel in order to form their adaptive readiness for changing living conditions during the retirement period. The value and meaning components of adaptive readiness may be guidelines in psychological work with military personnel.

Undoubtedly, the presented results are intermediate, and their interpretation determines the objectives for the next stage of the study. In particular, we should analyze the features of the value and meaning sphere of retirees in relation to their gender and age, the characteristics of their previous professional experience, as well as a number of characteristics of the current status of retirees, and their role in the formation of adaptive readiness.

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The Content of Priority Values Among Military and Civil Retirees...

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Master of Group Work Organization Inventory: Possibilities and Limitations

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Abstract

Introduction. The concept of three roles of the organizer of group work (facilitator, mediator, and moderator) underlies the FaMeMo Inventory, which expands our understanding of the psychology of leadership. This study aims at developing and testing a modified version of the Inventory, which provides an external evaluation of the leader's competencies by members of his/her group.

Methods. We tested the Inventory in a quasi-experiment and examined how the components of the organizer's competence influence the efficiency of joint intellectual activity. To check the validity of the modified version of the tool we used the following questionnaires: Diagnostics of Group Motivation (I. D. Ladanov), Diagnostics of a Team's Business, Creative, and Moral Climate (N. P. Fetiskin, V. V. Kozlov, G. M. Manuylov), Technique for Assessing Psychological Atmosphere in a Team (A. F. Fidler), Technique for Determining the Group Cohesion Index (K. I. Sishor), and Technique for Studying the Subject-activity and Socio-psychological Cohesion of a Group (A. V. Sidorenkov, A. L. Mondrus).

Results. The results of the empirical study in a sample of 97 individual participants aged 18–25 years indicate the normality in the distribution for the 'mediator' scale, the negative asymmetry for the 'facilitator' and 'moderator' scales, and a high degree of internal consistency reliability of the Inventory scales (0.846–0.854). Structural modeling provided evidence for the factor validity of the Inventory. We identified and analyzed the items that reduced psychometric characteristics and proposed their reformulations. The hypotheses of the convergent validity of the Inventory scales were verified and mainly confirmed.

Discussion. The proposed version of the technique demonstrated good psychometric properties, which determines the possibility of investigating competence components in masters of group work organization by means of external evaluation of their group members and also prospects of further development of the tool.

Keywords

group work, facilitator, mediator, moderator, organizational competence, emotional competence, expert competence, organizational and leadership qualities, emotional leader, cooperativeness

Highlights

- T. Yu. Bazarov's concept of the components of competence in masters of group work organization provides theoretical and empirical evidence and underlies the development of a modified version of the Facilitator – Mediator – Moderator Inventory, which makes it possible to evaluate the leader by the members of his/her group.
- The proposed technique demonstrates high reliability and sufficient factor validity.
- The 'mediator' and 'moderator' scales show associations with indices of general group motivation, cohesion, psychological atmosphere, and team climate. The convergent validity of the 'facilitator' scale requires further research.
- The 'mediator' scale is characterized by validity across gender. No gender differences were found for the 'moderator' and 'facilitator' scales.

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Introduction

As A. L. Zhuravlev makes the point, the most important social task is to create a productive system of incentives for motivating employees to work together productively, achieving group goals with an eye toward the human role and psychological factors, which importance is steadily and naturally increasing in modern society (Zhuravlev, 2005).

Numerous modern authors point to the decisive role of teams in ensuring the success of the project (see, e.g., Belbin, 2007; Bogdanov, 2012; Razu, 2011). They believe that effective personnel management is the basis for project management and the main factor influencing success in its implementation (Bazarov, 2011; Bazarov & Ladionenko, 2017).

Efficient business management largely depends on the functioning of organizational processes, in particular, on the system of human resources management. At this level, there is a need for the organizer who masters a wide range of techniques and technologies for diagnosing and training.

In the concept of the Master of Group Work Organization (Bazarov, 2011, 2013), there are three basic components of joint activity such as (a) working at the individual level, (b) working at the group level, and (c) working at the task level. From this it follows that there are three roles of the master of group work organization, which differ in their priority aspects of interaction with respect to all the components of joint activity. The first point is the role of a *facilitator*, for whom group processes and the group as a whole are the primary orientations. In the terminology of the competency-based approach, here we are talking about organizational competency (competency represents a number of personality characteristics, traits, abilities and also the degree of motivation required for productive activity in the context of a certain competence (work requirements) (Bazarov & Ladionenko, 2017), authors' comment). Secondly, these are individual characteristics of the personnel, which competent accounting implies emotional competence. The

master of group work organization who is mainly focused on this aspect is hereinafter termed as a *mediator*. The development and analysis of the substantive perspective of organizational tasks, which requires intellectual expert competency, is represented in a *moderator's* activity (Bazarov, 2013). Let us identify the semantics and functionality of each role in more detail.

The Facilitator's Role

Facilitation technology is associated with the development and management of processes and group structure, as well as achieving results (Martynova, 2011). The fundamental characteristic of the facilitator manifests itself in the **object** of his/her influence – *the group as a whole, its processes and dynamics*. The main goal of the facilitator is to achieve productive group work. In general, the **facilitator's functions** are as follows: (a) removing communicative barriers, (b) creating conditions that help each participant to be involved in group problem solving, (c) developing regulations (stages and rules of work) as well as their controlling, (d) creating and distributing team roles, and (e) regulating group thought processes. At the same time, being active during interacting with group members, the facilitator does not interfere with the substantive aspect of work. The facilitator's methodological arsenal includes various ways of organizing group joint activities, for example, brainstorming, group discussion, etc. (Bazarov, 2011; Bazarov & Ladionenko, 2013), which, in turn, reduce difficulties of interaction in the group (Shtroo, 2015).

For successful enactment of the facilitator's role, the following **competencies** are required:

- *Organizational and leadership qualities* as the ability to organize group communication and collective activity and to form the role structure of the group; the facilitator should be active, initiative in these aspirations.
- *Cooperativity* as knowledge of the mechanisms of group dynamics; the facilitator is mostly characterized by his/her readiness for teamwork and orientation towards partner interaction.
- *Prudence* as the ability to analyze a group situation, to specify the stages of achieving joint goals, and to stage the future.

Besides, the facilitator requires in-depth knowledge of group processes, such as group dynamics, role structure of groups, including the distribution of team roles, building effective communication, and creating working rules with subsequent monitoring. The role of the facilitator is sometimes characterized as 'lacking in substance', bearing in mind the fact that the facilitator focuses on building effective interaction rather than on the content of the problem being solved by group members (Bazarov, 2011). In the facilitator's role the organizer of group work creates the conditions for employees' effective motivation, encourages participants to work together (Bazarov, 2011; Martynova, 2011). The ability to use techniques and technologies, as well as a clear understanding of the theoretical models and principles of the facilitating process are considered as the highest level of the facilitator's competency (Bens, 2005; Schwarz, 2005).

The Mediator's Role

The mediator's role involves the interaction of the master of group work organization with group members at the emotional level. The functional of the leader and/or the leader of this style is aimed at creating the necessary conditions for personal development, the manifestation of various personality patterns necessary when performing the task. In the mediator's activity *personality characteristics* of group members are in the centre of his/her attention; his/her **functions** are to improve the socio-psychological climate, create the atmosphere necessary for the

disclosure and development of personnel. In addition, the mediator works with the internal states of participants (Bazarov, 2011, 2013).

The mediator's **competency** includes the following components:

- *Influence* as the presence of credibility of communication partners, the creation of internal conditions for the implementation of unification processes, and encouraging development in others; the mediator's influence implies the ability to establish personal emotional contact with other people.
- *Penetration* as the diagnosis of emotional states in others, the assessment of the possibilities of personal changes; the mediator's penetration is determined by the ability to manifest each participant.
- *Tolerance* as willingness to accept various forms of self-expression, the direction of individual development in partners, the ability to decenter; tolerance includes non-judgmental non-verbal behavior, the ability to impartially take everyone's side.

Most often, the mediator's role manifests itself in conflict situations, when he/she performs a psychotherapeutic function and acts as a mediator in resolving problems between participants. The mediator's role in the group is aimed at creating an optimal socio-psychological climate for joint activities. This, in turn, involves the diagnosis of relationships in the group, and then the development of group norms, demonstrating tension and emotional conflicts among participants. Helping others in self-improving, cultivating, and consolidating personal relationships contributes to the high efficiency of interaction with others (Boyacis & Mackey, 2007). In doing so, the mediator should effectively fulfill the following lines (Bazarov, 2011, 2013):

- *Emotional leader* as a person who is an authority for group members (not necessarily holding a leadership position).
- *Diagnostician* as a person who is able to identify the current psychological state in the group, as well as in each individual participant.
- *Integrator* as a person who can integrate the group by resolving interpersonal conflicts.

A number of studies show that the efficiency of the mediation process is different in people with different levels of emotional leadership. The highest productivity in resolving conflicts is characteristic to the mediator with the medium and high levels of control of emotional intensity and the impact on emotional states in others (Bazarov & Chinnova, 2012; Shtroo & Serov, 2011).

The Moderator's Role

The moderator's role in group interaction is related to task solution by means of the question-answer procedure, achievement of group pluralism, and consideration of situations from various perspectives. The **subject** of the moderator's work is the *content of a task or a problem*. The moderator's activity is **aimed** at *joint problem-solving, expanding the arsenal of ways of problem-solving, and finding the most effective solution* (Bazarov, 2011, 2013).

In order to act as a moderator, master of group work organization should be an expert in the topic of discussion (Bazarov, 2011, 2013; Krichevsky, 1993; Howard & Bray, 1990). The moderator's most important tasks are dialogue organization – the 'question-answer' procedure (Sorina, 2006) and creating conditions for a free exchange of views, for a joint creative approach to problem-solving (Bazarov, 2011, 2013).

In the process of group work, the moderator's **functions** are as follows:

- Identifying the essence of the issue.

- Developing the pluralism of points of view among participants (Bazarov, 2011; Bazarov & Eremin, 2006).
 - Developing group creativity and co-creation (Bazarov, 2017).
 - Eliminating potential errors in reasoning, improvement of arguments.
 - Developing mutual understanding among participants and coordination of their points of view.
 - Choosing the optimal way of problem-solving.
 - Developing group and individual responsibility for task solving.
 - Discussing the future work plan (Bazarov, 2011, 2013).
- The moderator role is implemented through the following **competencies**:
- *Dynamic thinking* as the ability to work with diverse intellectual and practical tasks with high speed and accuracy, to switch rapidly from one problem to another.
 - *Creativity* as the ability to produce unusual solutions to traditional problems, the search for ways of overcoming problems, and high variability of solutions.
 - *Problem orientation* as the ability to trace and consider inconsistencies in various aspects of situation, to formulate productive contradictions.

In order to help the group advance in content, the moderator should be a broad-minded person and be aware of modern developments in science and practice. In addition, he needs to be receptive to the opinion of group members, listen and hear the answers to the questions, understand the meaning of the answers (Bazarov, 2011).

Methods

The foregoing theoretical construct provided the basis for developing the *Master of Group Work Organization* inventory by Professor T. Yu. Bazarov, Doctor in Psychology.

The sample. The sample was comprised of 41 male and 56 female participants (n = 97) aged 18 to 25 years.

All the respondents were divided into 25 groups; each group included one leader (11 men and 14 women) and, with few exceptions, three individual participants. The players who had the experience of performing organizational functions were team captains. Students of the same group were divided into different groups.

The procedure. The study participants were asked to cooperatively solve two types of intellectual tasks taken from the manual of the 'What? Where? When?' intellectual game (Rusanova, 1992) and the Raven's Advanced Progressive Matrices Test.

Then we surveyed the participants.

The **techniques** were as follows:

1. Master of Group Work Organization Inventory.
2. Diagnostics of Group Motivation (I. D. Ladanov) (Ladanov, 2004; Fetiskin, Kozlov, & Manuilov, 2002).
3. Diagnostics of a Team's Business, Creative, and Moral Climate (Fetiskin et al., 2002).
4. Technique for Assessing Psychological Atmosphere in a Team (F. Fidler) (Fetiskin et al., 2002).
5. Technique for Determining the Group Cohesion Index (C. Sishor) (Fetiskin et al., 2002).
6. Technique for Studying the Subject-activity and Socio-psychological Cohesion of a Group (Sidorenkov & Mondrus, 2011).

The data were processed using Microsoft Office Excel 2010, statistical packages for SPSS 15.0 and EQS 6.2 for Windows.

Results

Descriptive Statistics and Reliability-Consistency

Initially, we calculated indices of descriptive statistics for each item of the Inventory and the reliability of its scales (Table 1).

| Table 1 <i>Indices of descriptive statistics and Cronbach's alpha after removal of all the Inventory items</i> | | | | | | |
|---|-------------|---------------------------|------------------|---------------|-------------------------------|---|
| | <u>Mean</u> | <u>Standard deviation</u> | <u>Asymmetry</u> | <u>Excess</u> | <u>Item-scale correlation</u> | <u>Cronbach's alpha coefficient after removing the item</u> |
| Facilitator Scale ($\alpha = 0,855$) | | | | | | |
| Fa1. While working in the group, he/she ensured pushing the matter through. | 3,66 | 1,195 | -0,776* | -0,391 | 0,626 | 0,835 |
| Fa2. He/she has the talent of the organizer | 3,37 | 1,007 | -0,474 | 0,181 | 0,686 | 0,832 |
| Fa3. In a situation of group interaction, he/she easily managed to involve everyone in group work | 3,31 | 1,069 | -0,394 | -0,615 | 0,615 | 0,837 |
| Fa4. He/she motivated participants to problem-solving | 3,23 | 1,000 | -0,349 | -0,095 | 0,611 | 0,838 |
| Fa5. He/she clarified common objectives and expected results of joint activity | 3,43 | 1,185 | -0,268 | -0,913 | 0,653 | 0,833 |
| Fa6. He/she clarified individual goals of joint activity (goals of each participant) | 3,12 | 1,297 | -0,158 | -1,118* | 0,495 | 0,847 |
| Fa7. The organization of the group process is one of his/her strengths | 3,19 | 1,098 | -0,139 | -0,521 | 0,666 | 0,832 |

| Table 1 Indices of descriptive statistics and Cronbach's alpha after removal of all the Inventory items | | | | | | |
|--|-------------|---------------------------|------------------|---------------|-------------------------------|---|
| | <u>Mean</u> | <u>Standard deviation</u> | <u>Asymmetry</u> | <u>Excess</u> | <u>Item-scale correlation</u> | <u>Cronbach's alpha coefficient after removing the item</u> |
| Fa8. He/she paid great attention to formal characteristics of group work | 2,96 | 1,142 | -0,047 | -0,632 | 0,516 | 0,845 |
| Fa9. He/she established rules and stages of work | 3,17 | 1,311 | -0,315 | -1,038* | 0,572 | 0,840 |
| Fa10. He/she recorded the success achieved by the group in the process of work | 3,18 | 1,330 | -0,250 | -1,038* | 0,262 | 0,869 |
| The Mediator Scale ($\alpha = 0,846$) | | | | | | |
| Me1. He/she may be characterized as a kind person | 3,89 | 0,950 | -0,895* | 0,695 | 0,484 | 0,837 |
| Me2. He/she is interested in the state of each member of the group | 3,00 | 1,170 | 0,000 | -0,738 | 0,673 | 0,819 |
| Me3. He/she seeks a good understanding of emotional states of his colleagues | 3,19 | 1,069 | -0,068 | -0,432 | 0,696 | 0,817 |
| Me4. He/she feels people and can easily affect their emotional state | 3,15 | 0,940 | -0,065 | -0,080 | 0,654 | 0,823 |
| Me5. He/she helped the group resolve unproductive conflicts | 3,30 | 0,964 | -0,067 | -0,203 | 0,337 | 0,849 |

Table 1
 Indices of descriptive statistics and Cronbach's alpha after removal of all the Inventory items

| | <u>Mean</u> | <u>Standard deviation</u> | <u>Asymmetry</u> | <u>Excess</u> | <u>Item-scale correlation</u> | <u>Cronbach's alpha coefficient after removing the item</u> |
|---|-------------|---------------------------|------------------|---------------|-------------------------------|---|
| Me6. I think that he/she can provide emotional support, when I feel bad | 3,47 | 1,056 | -0,327 | -0,373 | 0,625 | 0,824 |
| Me7. It seems to me that personal contact is the most important thing in communication for him/her | 3,31 | 1,029 | -0,131 | -0,632 | 0,465 | 0,839 |
| Me8. He/she was inclined to solve the problem at the emotional level | 2,50 | 1,114 | 0,116 | -0,997* | 0,314 | 0,853 |
| Me9. He/she helped less communicative members of the group enter the communicative space | 2,96 | 1,169 | 0,042 | -0,806 | 0,576 | 0,829 |
| Me10. Solving emotional problems is one of his/her strengths | 3,00 | 1,046 | 0,056 | -0,215 | 0,636 | 0,823 |
| The Moderator Scale ($\alpha = 0,854$) | | | | | | |
| Mo1. He/she can quickly identify and use new ways of problem solving | 3,55 | 1,035 | -0,404 | -0,360 | 0,590 | 0,838 |
| Mo2. Logic is one of his/her strengths | 3,5 | 0,929 | -0,362 | 0,259 | 0,513 | 0,844 |
| Mo3. He/she knows how to ask questions in such a way that people find the right solution to their problem by themselves | 2,81 | 1,079 | -0,027 | -0,582 | 0,549 | 0,841 |

| Table 1 Indices of descriptive statistics and Cronbach's alpha after removal of all the Inventory items | | | | | | |
|---|-------------|---------------------------|------------------|---------------|-------------------------------|---|
| | <u>Mean</u> | <u>Standard deviation</u> | <u>Asymmetry</u> | <u>Excess</u> | <u>Item-scale correlation</u> | <u>Cronbach's alpha coefficient after removing the item</u> |
| Mo4. He/she always starts a discussion in order to stimulate colleagues to new thoughts and set the group in motion | 3,64 | 1,007 | -0,918* | 0,700 | 0,516 | 0,844 |
| Mo5. He/she switches from one problem to another quickly and easily | 4,19 | 0,837 | -0,917* | 0,400 | 0,305 | 0,859 |
| Mo6. He/she is good in presentation of the essence of the problem | 3,75 | 1,036 | -0,696* | 0,029 | 0,695 | 0,828 |
| Mo7. He/she is engaged in the formulation of problematic issues | 3,51 | 1,076 | -0,675* | -0,017 | 0,572 | 0,839 |
| Mo8. He/she clearly presents and expresses his/her ideas | 3,84 | 0,998 | -0,846* | 0,541 | 0,688 | 0,829 |
| Mo9. He/she stimulated participants to questions and comments | 3,35 | 1,142 | -0,606* | -0,541 | 0,537 | 0,843 |
| Mo10. He/she suggested a large number of ideas for solving the problem | 3,62 | 1,109 | -0,651* | -0,382 | 0,602 | 0,836 |
| Standard error | | | 0,246 | 0,488 | | |
| Legend: * – the value exceeds two its standard errors by the module. | | | | | | |

All the scales have a reliability-consistency level of more than 0.8, which is a very good result for personality questionnaires (Mitina, 2011).

The Facilitator Scale has a single item, the removal of which would increase reliability – ‘*He/she recorded the success achieved by the group in the process of work*’. This item has a significant negative excess. Apparently, the leaders were heterogeneous, and some of them considered this function optional, delegated it to the secretary, etc.

The Mediator Scale has two items that slightly reduce its consistency: ‘*He/she helped the group resolve unproductive conflicts*’ and ‘*He/she was inclined to solve the problem at the emotional level*’. However, their meanings represent the construct well; changes are not justified.

The Moderator Scale has a single item that weakly reduces its consistency: ‘*He/she switches from one problem to another quickly and easily*’; it has significantly higher scores. Presumably, it does not adequately reflect the content of tasks and would become more effective in the wording ‘*He/she switches from one intellectual problem to another quickly and easily*’.

Scale scores were calculated by averaging the respondents’ answers to the scale items. The statistics of scale scores are summarized in Table 2.

Table 2

Descriptive statistics and the test for normality for the scale items of the method (N = 95)

| | <u>Mean</u> | <u>Standard Deviation</u> | <u>Minimum</u> | <u>Maximum</u> | <u>Asymmetry</u> | <u>Excess</u> | <u>Shapiro-Wilk p-value</u> |
|-------------|-------------|-------------------------------|----------------|----------------|------------------|---------------|---------------------------------|
| Facilitator | 3,24 | 0,749 | 1 | 5 | –0,555* | 0,638 | 0,034 |
| Mediator | 3,16 | 0,658 | 1,3 | 4,8 | –0,058 | 0,309 | 0,752 |
| Moderator | 3,56 | 0,662 | 1,5 | 4,8 | –0,598* | 0,915 | 0,007 |
| | | Standard error | | | 0,247 | 0,490 | |

Legend: * – the value exceeds two its standard errors by the module.

The Facilitator and Moderator scales have relatively high scores, which can be explained by both the specific characteristic of the task for a team intellectual discussion and the possible social desirability of the qualities. In the Mediator Scale the distribution does not differ from the normal one, which proves the sufficient representativeness of the sample for this parameter.

Structural modeling

To check the **reliability** and **factor validity** of the Inventory scales, we used confirmatory factor analysis. The implementation of the method was problematic in our sample. Firstly, the number of subjects is small for structural modeling (Tabachnick & Fidell, 2014). Secondly, the Likert scale (by points) should be considered only as a rank categorical one. To increase confidence in the conclusions, we performed the calculation twice, using (a) Yuan–Bentler statistics optimal for small samples (Tabachnick & Fidell, 2014) and (b) analysis of categorical variables (Bentler, 2006).

According to the Yuan–Bentler approach, the consistency of the model with empirical data can only be considered as moderate ($\chi^2 = 638.18$, $df = 402$; CFI = 0.759; RMSEA = 0.079). If the ratio between χ^2 and degrees of freedom is below 2 (Mitina, 2008) and the RMSEA value below 0.1 does not allow poor consistency (Tabachnick & Fidell, 2014), then the comparative consistency index is far from the required level of 0.9 (Tabachnick & Fidell, 2014; Mitina, 2008). Calculations based on categorical variables indicate high consistency between the model and the data ($\chi^2 = 646.548$, CFI = 0.941; RMSEA = 0.080).

In both tests, all the items in the Inventory showed a significant positive loading on the factors corresponding to them ($z \geq 2.06$; $p < 0.02$). In addition, all the latent variables had significant ($z \geq 10$; $p < 0.0005$) and very high correlations between each other (Table 3).

| Methodology | <u>Mediator</u> | | <u>Moderator</u> | |
|-------------|-------------------------|------------------------|-------------------------|-------------------------|
| | Yuan–Bentler statistics | Polychoric correlation | Yuan–Bentler statistics | Yuan–Bentler statistics |
| Facilitator | 0,772 | 0,779 | 0,817 | 0,797 |
| Mediator | | | 0,706 | 0,706 |

The high correlation between the scales makes relevant the examination of factor validity. For this purpose, we tested a competing model No. 2, in which the correlations between the factors were equated to 1, corresponding to the identity of all the roles of the master of group work. Differences in the consistency of the models were evaluated using the chi-square test (Byrne, 2010) and information criteria (Garson, 2015). All these criteria have extremely high levels of significance ($p < 0.00001$) and are presented in Table 4.

| | <u>df</u> | <u>Model consistency indices</u> | | | | | <u>Difference χ^2</u> |
|---------|-----------|----------------------------------|--------------|----------------------------|------------|-------------|---------------------------------------|
| | | <u>CFI</u> | <u>RMSEA</u> | <u>χ^2</u> | <u>AIC</u> | <u>CAIC</u> | |
| Model 1 | 402 | 0,759 | 0,079 | 638,175 | -165,825 | -1598,693 | |
| | | 0,941 | 0,080 | 646,548 | -157,452 | -1590,320 | |
| Model 2 | 405 | 0,690 | 0,089 | 708,653 | -101,347 | -1544,908 | 70,478 |
| | | 0,903 | 0,102 | 805,485 | -4,515 | -1448,076 | 158,937 |

Thus, discriminant validity of the scales of our Inventory of the roles of the master of group work is extremely high. This provides empirical evidence for the specificity and independence of the constructs of facilitator, mediator, and moderator.

Then, we employed the LM test and then selected five the most significant and interpreted determinations of items as secondary factors. Therefore, we decided to reformulate the items (Table 5).

Table 5
Inventory items with side factors by the LM test results in the overall sample

| <u>Original statement</u> | χ^2 | <u>Side loaded</u> | <u>Proposed statement change</u> |
|--|----------|--------------------|--|
| Mo23. He/she knows how to ask questions in such a way that people find the right solution to their problem by themselves | 17,88 | Me | He/she knows how to ask questions in such a way that people find the right solution to their task by themselves |
| Mo29. He/she stimulated participants to questions and comments | 14,23 | Me | He/she asks participants questions and comment their suggestions |
| Me15. He/she helped the group resolve unproductive conflicts | 14,19 | Mo | In unproductive conflicts he/she helped participants to calm down and find a common language |
| Fa1. While working in the group, he/she ensured pushing the matter through | 12,29 | Me | <i>Doesn't need changes but should be considered as the inverse item for the 'Mediator' scale</i> |
| Mo24. He/she always starts a discussion in order to stimulate colleagues to new thoughts and set the group in motion | 9,54 | Fa | By his/her remarks he/she activates colleagues' thinking, allowing them to come up with new ideas in discussions |

Further, we carried out confirmatory factor analysis of the data, which was limited to the sample of participants (n = 72), excluding group leaders.

According to the Yuan–Bentler approach, the consistency of the model with empirical data can only be considered as slightly acceptable ($\chi^2 = 601.023$, $df = 402$; CFI = 0.760; RMSEA = 0.084). Calculations based on polychoric correlation of rank scales confirm very high consistency between the model and the data ($\chi^2 = 454.738$, CFI = 0.981; RMSEA = 0.043).

In both tests, all the items showed a significant positive load. In both tests, all the items showed a significant positive load on their factors ($z \geq 2.06$; $p < 0.02$). All the factors had a significant ($z \geq 10$; $p < 0.0005$) high correlation among each other (see Table 6). The results are similar to the overall sample, which increases confidence in them.

| Methodology | Mediator | | Moderator | |
|-------------|-------------------------|------------------------|-------------------------|------------------------|
| | Yuan–Bentler statistics | Polychoric correlation | Yuan–Bentler statistics | Polychoric correlation |
| Facilitator | 0,759 | 0,756 | 0,793 | 0,750 |
| Mediator | | | 0,724 | 0,711 |

Validity of the Inventory

Substantive validity of the Inventory is achieved by formulating items in accordance with theoretical tasks and methods for performing the three roles of the group work master.

The correlations among the scale scores and other techniques provided preliminary evidence for **converged validity** of the Inventory scales. We have put forward the following hypotheses:

1. The levels of group motivation, group cohesion and the psychological atmosphere within the team are directly associated with all the roles, especially with the mediator role.

2. The facilitator’s role is directly associated with the business climate, the subject-activity, and socio-psychological cohesion. However, compared to the mediator’s role, socio-psychological cohesion is less associated with the facilitator’s role.

3. The mediator’s role is directly associated with the business climate, moral climate, and socio-psychological cohesion.

4. The moderator’s role is directly associated with the creative climate, subject-activity cohesion, and moral climate. However, compared to the role of the mediator, moral climate is less associated with the moderator’ role.

Table 7 summarizes the statistics of the scales of validating indicators.

| Table 7. Descriptive statistics, testing normality and reliability of validating indicators | | | | | | | |
|--|----------|-----------------------------|-------------|-------------------------------|------------------|---------------|--|
| <u>Scales</u> | <u>N</u> | <u>Cronbach's alpha</u> | <u>Mean</u> | <u>Standard deviation</u> | <u>Asymmetry</u> | <u>Excess</u> | <u>p-value, Shapiro- Wilk W-test</u> |
| Overall group motivation | 95 | 0,892 | 64,10 | 12,554 | -1,936* | 6,617** | < 0,0005 |
| Business climate | 95 | 0,793 | 6,41 | 1,296 | -0,633* | 0,435 | 0,044 |
| Creative climate | 95 | 0,901 | 7,00 | 1,366 | -0,636* | -0,503 | < 0,0005 |
| Moral climate | 95 | 0,875 | 7,39 | 1,159 | -0,565* | -0,054 | 0,007 |
| Atmosphere within the team | 95 | 0,925 | 2,41 | 0,998 | 0,510* | -0,451 | 0,002 |
| Cohesion | 96 | 0,665 | 13,47 | 3,61 | -1,498* | 4,384** | < 0,0005 |
| Subject-activity cohesion | 91 | 0,880 | 25,59 | 7,67 | -0,712* | -0,443 | < 0,0005 |
| Socio-psychological cohesion | 91 | 0,904 | 25,14 | 8,39 | -0,843* | -0,269 | < 0,0005 |

Legend: * – the value exceeds two of its standard errors by the module.

All the scales used for validation are highly reliable. Because of the non-normality of distribution, we used Spearman's rank correlation coefficients as the basic ones (Table 8).

Table 8
 Correlation coefficients among the scales of the FaMeMo Inventory and the scales of validating techniques

| <u>Scales of other inventories</u> | <u>Scales of the FaMeMo technique</u> | | |
|------------------------------------|---------------------------------------|-----------------|------------------|
| | <u>Facilitator</u> | <u>Mediator</u> | <u>Moderator</u> |
| Overall group motivation | 0,430*** | 0,572*** | 0,507*** |
| Group cohesion | 0,315*** | 0,417*** | 0,369*** |
| Psychological atmosphere | -0,463*** | -0,459*** | -0,465*** |
| Subject-activity cohesion | 0,208* | 0,396*** | 0,250** |
| Socio-psychological cohesion | 0,228** | 0,398*** | 0,244** |
| Business climate | 0,331*** | 0,401*** | 0,420*** |
| Creative climate | 0,416*** | 0,391*** | 0,505*** |
| Moral climate | 0,381*** | 0,424*** | 0,479*** |

Legend: * – Correlation is significant at the 0.1 level;
 ** – Correlation is significant at the 0.05 level;
 *** – Correlation is significant at the 0.01 level.

The data obtained indicate that the psychological atmosphere within the group is almost equally associated with all the roles of the master of group work, which can be explained by the specific character of group activity. When solving productive thinking tasks in the format of a regulated procedure, the competencies of the facilitator and the moderator could be important for a favorable group atmosphere.

The facilitator's role was positively, albeit insignificantly, associated with subject-activity cohesion. Perhaps the specific character of the activity contributed to a greater integration of the group behind the generator of ideas. All the associations are significant. However, the mediator and psychotherapeutic functions of the leader turned out to be core to all the aspects of cohesion, including the subject-activity one.

Validity across gender. We assumed that the mediative function of the master of group work organization, which was oriented on the emotional aspect of interaction, should be more

characteristic of female leaders. The Mann-Whitney test ($U = 844$; $p = 0.027$; $r = 0.227$), indeed, confirms the presence of a weak association. However, the roles of the facilitator and the moderator do not manifest gender specificity ($U \geq 977.5$; $p \geq 0.220$; $r < 0.1$).

Discussion

During the empirical study, we developed and tested the diagnostic tool that demonstrated good psychometric properties. All the Inventory scales have a high level of internal consistency reliability; there are no clearly uninformative items. At the same time, statistical data demonstrated the need to reformulate some statements, which allowed us to improve original materials. It is possible to talk about the factor validity of the structure of the Inventory, which supports the concept of the three independent and irreducible to each other, although closely interrelated, roles of the master of group work.

In addition, we obtained some evidence confirming convergent validity and validity across gender, which indicates the ability of the tool to objectively differentiate existing differences.

Conclusion

We see the prospect of this study in the practical use of the developed tool in the field of management and training of specialists in group work organization.

We should note the specifics of the sample for testing and specific characteristics of the content of the subjects' joint activities (solving creative and problem-posing tasks). In order to ensure greater representativeness of the data, further studies in other samples and in different conditions of interaction, a multiple increase in the number of respondents at the main stage of testing will be needed.

It should also be noted that the distribution of data by a number of items, as well as the 'facilitator' and 'moderator' scales, had relatively higher scores, which can be caused both by incomplete data representativeness and, possibly, social desirability of these traits, which should be considered when using the diagnostic tool.

The possibility of diagnostic use of the Inventory, of course, implies the calculation of test norms. The standardization of the modified Facilitator – Mediator – Moderator Inventory, along with new evidence on its reliability, validity and representativeness, is the most important prospect of future research.

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