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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.

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- 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.

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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

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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

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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 SPPS-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.

Table 1

Meaning units of subjective experiences of mental states

№	Meaning units	Empirical indicators of characteristics
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.

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Table 1

Meaning units of subjective experiences of mental states

№	Meaning units	Empirical indicators of characteristics
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

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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').

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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.

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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	Mean values. Adolescents
1. Evaluation/quantity/comparison	4,4	$p < 0,001$	1,8
2. Relatives/close relationships	2,1	$p < 0,001$	0,6
4. Feelings/emotions/experiences	2,1	$p < 0,01$	1,2
5. Reasons/situations	2	$p < 0,01$	1,1
7. Actions/activities	3,3	$p < 0,001$	1,8
9. Conditions/places	2,7	$p < 0,001$	0,8

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Table 2

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

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

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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

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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.

Table 3

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

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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

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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.

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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).

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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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