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The Subjective Experience of Mental States in Individuals with Deviant Behavior at a Forecasting Situation

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Abstract

This article describes the dependence of the ability to predict mental states on their subjective experience in adolescents with deviant behavior. The purpose of the article is to study the subjective experience of mental states of joy and anger, which have different modality but belong to a group of states with high level of mental activity and to study how the experience is included in forecasting processes. The relevance of the research results from the fact that the experience of mental states plays a significant part in the process of adaptation and socialization of children and adolescents; in the development of communication and interaction skills in society; in personal development and formation of emotional and volitional spheres for which prognostic skills are important as well. In this regard, this article is aimed at identifying the content of the subjective experience of mental states of *joy*, *anger* and studying the specifics of forecasting and the characteristics of thinking that act as a determining factor for the subjective experience. The study involved the following methods: content analysis of subjects' self-reports, testing and mathematical processing of data collected after testing. The subjects were represented by adolescents with deviant behavior. The study took place in three stages (the study of mental states in the past, in the future and the study of prognostic skills). In this article, we define the content of the experience of mental states of *joy* and *anger*, show the degree of manifestation of overall predictive capability in deviant adolescents, identify correlation between the sensory and cognitive spheres in adolescents and identify the thought processes (the quality of thinking in forecasting) that seem dominant in the subjective experience.

Keywords: subjective experience; mental states; adolescents; forecasting; prognostic capability.

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Introduction

Mental states act as internal determinants of behavior and also represent the foundation for the behavior and activity in various systems of interaction and different spheres of life (Chesnokova, 2004; Synchronova, 2008). Therefore, the ability to regulate one's own mental state makes it possible to build relationships with other people and to influence activity (Gabdreeva, 2004). Mental state is determined by various causes, i.e. acts as a consequence, and also appears as the main determinant, i.e. acts as a cause.

Mental state refers to temporal objects – it is dynamic, unstable and changeable in time. The dynamics of a mental state and its subjective image constitute the experience of the state. Mental experience is a system of "... existing mental formations and mental states initiated by them that underlie a person's cognitive attitude to the world and determine specific properties of a person's intellectual activity" (Holodnaya, 2002).

The experience captures the structures of time, space and the pace at which the intensity of the state changes in the form of an image (Prokhorov, 2008; Artischeva, 2011), i.e. the content of the experience represents a spatio-temporal pattern of states.

Experiencing mental states is what allows us to identify our own states and the states of other people (Artischeva, 2017). It is precisely the subjective experience that acts as a link between the phenomena of the psyche (states, consciousness, forecasting). The emotional reaction to a current event is determined by the previous experience (Ahmetzyanova & Artishcheva, 2018).

Literature review

In modern science, deviant behavior is defined as a system of actions (or a separate act) that does not meet social norms. Deviant behavior is often characterized by an imbalance of mental processes, maladjustment, and distortion of the process of self-actualization, lack of moral and aesthetic control over behavior (Mendelevich, 2005). The reasons for behavioral deviations have long been the matter of dispute among psychologists and psychiatrists. However, today it is generally accepted that in most cases the causes of deviant behavior are represented by a combination of biological, social and personal factors which determine the specificity of this behavior (Whitehead, 2015).

The rules-based behavior of an individual is largely determined precisely by a social context. For example, many socio-psychological theories of deviant behavior refer to the fact that deviance may be represented as an incorrect behavioral pattern learned by a child as a result of interaction with a disadvantaged background and a lack of sanction control from the inner circle (family / caretakers). The alternative approach regards deviance as a pattern of behavior to which an individual resorts as a result of a frustration of the need to achieve success (Nalah & Ishaya 2013)

It is worth to mention that the formation of deviant behavioral patterns also depends on a number of predisposed traits of personality. For example, early psychometric studies associate deviant behavior with the degree of expression of such personality traits as neuroticism, extraversion and psychoticism. It indirectly indicates the presence of a common pattern of personality characteristics which also determines mental state of an individual (Abrams, 2018)

The ability of a person to predict future events and act proactively is a prerequisite for their personal development and for leading an active life. Anticipation processes play a leading role in regulation of human activities and states. Developed forecasting skills ensure social adaptation at any age. Forecasting becomes even more significant in individuals prone to deviant behavior – in particular, if we speak about adolescents. Any communication and interaction between adolescents or their ability to

recognize the emotional states of others – all of these things are manifestations of the communicative function of anticipation. Being able to understand mental states and emotions of other people and being able to recognize and identify their states, adolescents (just like adults) can build their social interaction with others and form their personal contacts.

In the context of the communicative function of anticipation, we explore not only the specifics of mental states of adolescents who interact with each other, but also the role of the subjective experience of mental states in this process.

The specifics of the subjective experience of mental states of adolescents with deviant behaviors has not been studied well enough, but it plays a significant role in the process of adaptation and socialization of adolescents which is important for the development of communication and interaction skills in society as well as for personal development and regulation of the emotional-volitional sphere.

Purpose and objectives of the study

Our study is focused on exploring the subjective experience of such mental states as joy and anger which have different modality but belong to a class of the states with a high level of mental activity. These states were studied in the projections of the past and the future in conjunction with forecasting capabilities of adolescents with deviant behaviors.

Methodology

In order to study the subjective experience of mental states, we used a “Mental state relief” questionnaire designed to evaluate the intensity of the characteristics of the states. We also used the method of self-reports reflecting the description of experiences of joy and anger in the past and in the expected future. Mental states of joy (positive state of a high level of mental activity) and anger (negative state of a high level of mental activity) were evaluated and described as well.

Prognostic skills were studied using L.A. Regush’s test called “Forecasting capability”. According to the test, the ability to anticipate is determined by such qualities of thinking as analyticity, depth, awareness, flexibility, perspectivity, and argumentativeness. All the data collected was statistically processed using the SPSS-23 Statistics program.

The study involved 14–16 year old adolescents with deviant behavior (studying in a closed-type institution) – 18 individuals.

The study took place in three stages. At the first stage, the subjects described (using self-reports) and evaluated (“Mental state relief”) mental states they experienced in the past. At the second stage, they described and evaluated anticipations of mental states in the future. At the third stage, using the “Forecasting capability” test we identified the level of the development of prognostic skills and the qualities of thinking that determine this capability in adolescents. At each stage, mental states were revealed in the context of events that determine these states.

Results

Having analyzed all self-reports, we were able to reveal the substantial components of the subjective experience of mental states of joy and anger (Table 1).

Table 1. *Characteristics of the subjective experience of mental states and their empirical indicators*

	Characteristics	Empirical indicators of characteristics
	close friends/ relatives	"You do something with your mom", "my friend came to me", "next to close friends", "had a row with close friends", "grandmother came here",
	unity	"Close to the family", "next to close friends", "together with me", "mother is with me", "to be alone"
	evaluation / comparison / ratio	"I hit myself hard", "they insult me", "always", "eternal state", "very strongly", "was recently", "it's okay", "doesn't make a difference"
	feelings / emotions / experiences	"Feeling of peace", "feeling tired", "rage", "fury", "sadness comes", "fear", "was joyful"
	actions / deeds / activities	"Went in for sports", "walking in the street", "hit myself hard", "when I sit at the computer", "did my homework"
	events / situations	"When they bought me a kitten ", "when the team lost a football match", "when we win", "when wedding takes place",
	reactions / expression	"Anger turned into a fight", "they are shouting", "burst into tears", "when they raised their voice"
	physiological processes	"Drowsiness", "to go to bed", "grandmother died", "I will get sick", "to wake up", "relaxation", "my head ached"
	wishes / dreams	"I got the long-awaited result", "I hope", "I don't want", "it is desirable", "I want to"
0	regulatory processes	"I try it (anger) not to express itself", "when I feel sad, I know that will be okay soon," "to control all situations"
1	time / conditions / place	"Punished for a month", "got into such places", "go to a cafe", "walk on the street", "came here", "a year and a half ago", "when it happened at the school"
2	mnemonic / thought / reflexive processes	"I can't even imagine", "I thought I was fine", "I think about my home"
3	symbols / abstraction	"Many lives, just like cats have", "there will be a second life", "it will fly on the wings of the wind itself", "let the happiness fly into my window", "well, let the sadness bury me"

Mental states of joy and anger of adolescents with deviant behaviors are represented in their minds by various mental phenomena (assessment, attitudes, emotional-volitional processes, expression, mnemonic and reflexive processes, desires and dreams, symbols and abstractions) and indicators of time and events which form the subjective experience of these states. Adolescents reveal mental states of the past and the forecasted future through the description of experiences associated with significant other

people or with their own inner world. States of joy and anger are stored in the memory in the form of images of events, situations and actions that determined these states.

Children describe anger more briefly than joy – not always they can identify this state. Some subjects reveal their states through abstract descriptions and symbols. The experience of the states of other subjects contains regulatory characteristics, that is, the subjective experience of some adolescents contains mechanisms and strategies for managing their states. Very often, adolescents with deviant behavior associate their experiences of anger or joy with close friends, with their actions towards them, and with the presence or absence of close people in their lives.

The previous experience of states is extrapolated into the future partially – some characteristics get reduced while some remain untouched in the time continuum. The existing experience of the states determines their prediction in the future.

Next, we shall take a look at the identified correlations between the characteristics of the subjective experience of mental states and the indicators of the quality of thinking that determine forecasting capability (Table 2).

Table 2. *General correlations*

Scales:	:	S ignifican ce:	Scales:	:	S ignifican ce:
Self-reports JP			Self-reports JF		
5 – General prognosis	,0001	,782**	12 – Perspectivity	,033	,504*
11 – General prognosis	,011	,586*			
3 – Argumentativeness	,021	,539*			
7 – Flexibility	,024	,529*			
Self-reports AP			Self-reports AF		
12 – General prognosis	,007	,611**	10 – Analyticity	,047	,474*
11 – General prognosis	,032	,506*			
11 – Perspectivity	,041	,485*			
Relief AP			Relief AF		
18 – Argumentativeness	,004	,648**	6 – Awareness	,029	,513*
20 – Argumentativeness	,008	,600**	9 – Awareness	,042	,483*
24 – Argumentativeness	,041	,486*	16 – Awareness	,002	,680**
15 – Awareness			25 – Awareness		

	,04	,489*		,049	471*
17 – Awareness	,041	,485*	,	31 – Awareness	,006 619**
37 – Awareness	,044	,480*	-	33 – Awareness	,001 693**
24 – Analyticity	,045	,477*	-	3 – General prognosis	,028 ,516*
25 – Analyticity	,0002	,764**	-	39 – General prognosis	,008 ,602**
40 – Prognosis	,027	520*	,	15 – Flexibility	,047 473*
				19 – Flexibility	,029 513*
				14 – Analyticity	,044 ,479*
				31 – Analyticity	,039 ,490*
				32 – Analyticity	,04 ,487*
				40 – Analyticity	,007 ,610**
				12 – Perspectivity	,004 ,649**
				21 – Perspectivity	,032 508*
Relief JP			Relief JF		
7 – Argumentativeness	,047	,474*	-	24 – Analyticity	,037 ,494*
40 – Argumentativeness	,004	,644**	-	27 – Analyticity	,015 ,565*
6 – Awareness	,027	520*	,	29 – Analyticity	,045 ,477*
8 – Awareness	,024	529*	,	32 – Analyticity	,034 ,502*
13 – Awareness	,031	,510*	-	36 – Analyticity	,03 ,510*
18 – Awareness	,018	551*	,	6 – Perspectivity	,048 ,472*
21 – Awareness	,046	476*	,	17 – Awareness	,036 497*
24 – Awareness	,006	625**	,	28 – Awareness	,012 579*

26 – Awareness	,017	554*	,		
27 – Awareness	,028	518*	,		
30 – Awareness	,038	491*	,		
10 – Perspectivity	,033	505*	,		
23 – Perspectivity	,024	530*	,		
31 – Analyticity	,013	,575*	-		
40 – Analyticity	,029	,515*	-		

Legend: JP – Joy/ Past; JF - Joy / Future; AP - Anger / Past; AF - Anger / Future.

Indicators of self-reports: 3. Evaluation / comparison / ratio; 5. Actions / deeds / activities; 6. Events / situations; 7. Reactions / expression; 8. Physiological processes; 9. Desires / dreams; 10. Regulatory processes; 11. Time / conditions / place; 12. Mnemic / thought / reflexive processes; 13. Symbols / abstraction

"Mental state relief" indicators: 3. Characteristics of attitudes; 6. Imagination; 7. Speech; 8. Emotional processes; 9. Volitional processes; 10. Attention; 12. Muscle tone condition; 13. Coordination of movements; 14. Motor activity; 15. Cardiovascular system; 16. Respiratory system manifestations; 17. The state of perspiration; 18. Gastrointestinal tract sensations; 19. Oral mucosa condition; 20. Skin color; 21. Dreariness - cheerfulness; 23. Sadness - fervor; 24. Passivity-activity; 25. Drowsiness - cheerfulness; 26. Flaccidity - glibness; 27. Lowers - raises; 28. Tension - emancipation; 29. Heaviness - lightness; 30. Constraint - looseness; 31. Passivity - activity of behavior; 32. Inconsistency - consistency; 33. Impulsiveness - regularity; 36. Inadequacy - adequacy; 37. Relaxation - tension; 39. Uncertainty - confidence; 40. Closeness - openness.

Having compared links between the indicators of the subjective experience and forecasting capabilities in the past and in the future, we can emphasize a number of specific features. The substantive characteristics of the subjective experience of mental states (self-reports) have more links with prognostic characteristics of a personality in retrospective description of the states. We have revealed the qualities of thinking that are more responsible for the content of the subjective experience of the states, and we have also revealed the characteristics of the subjective experience that determine forecasting processes. The correlation links include many indicators of the subjective experience of states and the quality of thinking. A number of indicators of the subjective experience reflecting the content and intensity are found throughout the whole time continuum, that is, they have a cross-cutting nature. But at the same time, the links they formed with prognostic indicators are not cross-cutting. Each time aspect of the subjective experience of the studied mental states is characterized by certain correlations with the qualities of thinking.

The quality of general prognostic skills is determined by the actions done in the past as well as by the time and conditions of past events which determine the mental state of joy. The infrequent use of

evaluative and comparative characteristics in describing the experience of the state of joy determines the argumentativeness of thinking when making forecasts while the expressiveness of behavior in the past at the state of joy reduces the flexibility of thinking. At the same time, the perspectiveness of thinking and construction of adequate forecasts is possible with a decrease in the mental and reflexive characteristics of the image of the mental state of joy in the future. In other words, low occurrence of the characteristics of mnemonic, mental, and reflexive processes in the subjective experience of the mental state of joy (in the intervals of the future) determines high forecasting capability.

The content of the subjective experience of the mental state of anger is determined by other qualities of thinking. High incidence of the characteristics of thought processes, time and conditions of past events related to the state of anger determine high level of general predictive capability. Characteristics of the time and conditions of the state of anger determine the perspectives of thinking when making forecasts. The emphasis in describing the past state of anger in conditions at which this state arose or developed allows subjects to build adequate predictions that have a strategic focus. Low incidence of characteristics reflecting regulatory processes in descriptions of the state of anger in the future determines the analyticity of future thinking.

It was revealed that prognostic skills are also determined by the intensity of characteristics of the subjective experience of states – both in the past and in the future. The subjective experience of the state of joy has more correlations with the quality of thinking at forecasting in the past while the experience of anger has more of the same correlations in the future. The intensity of the subjective experience of the states determines only the qualities of thinking (with the exception of the future experience of anger), which determine forecasting, while the content of the experience determines the overall forecasting capability.

Such quality of thinking as awareness has the biggest number of correlations with the characteristics of the past experience of joy. The awareness of thinking in forecasting is determined by the intensity of a wide range of characteristics of the subjective experience of the state of joy in the past. High intensity of mental processes (imagination and emotional processes), physiological reactions (gastrointestinal tract sensations) and experiences (gaiety, agility, looseness) in the past experience of joy determines the awareness of thinking – that is, this experience allows to consciously track current experiences, rely on relevant circumstances in forecasting. The experience of joy in the future (the intensity of experiences and behavioral manifestations) has the biggest number of links with analytical thinking. The connections we revealed have inverse specificity. That is, we can say that the logic in analyzing situations and states and the choice of optimal solution in making a forecast are determined by a decrease in the intensity of characteristics of the experience (passivity, severity, decline) and behavior (inconsistency and inadequacy) in the future experience of joy.

The subjective experience of the state of anger in the future is more connected with the prediction than the characteristics of the past experience of anger. The dependence of prediction from past experience of the state of anger has a reverse direction. The argumentativeness of thinking, the ability to find convincing facts in favor of a certain prediction stem from a decrease in the intensity of physiological reactions and the passivity in experiencing anger. The awareness of thinking and the ability building predictions based on the analysis of current conditions and circumstances are determined by a decrease in the intensity of physiological manifestations and relaxation of behavior that accompany the state of anger in the past. The biggest number of correlations between characteristics of the subjective experience of the state of anger and characteristics of the quality of thinking was revealed in the interval of the future tense.

The awareness of thinking has more correlations with the experience of anger in the interval of the future; in constructing predictions, the awareness of thinking is determined by the intensity of a wide range of characteristics of experience (mental processes, physiological reactions, experiences and behavior). It is the development of imagination and volitional processes, the cheerfulness of the experiences and the activity, regularity of behavior in the structure of the experience of the state of anger that determine the awareness of thinking in forecasting. The general forecasting capability at the state of anger in future intervals is determined by a decrease in perceptions and confidence in behavior.

Thus, these tables show us correlations between the sensual and cognitive spheres of adolescents with deviant behaviors. Forecasting capability is determined by the content and the intensity of characteristics of the subjective experience of mental states of joy and anger. Considering these interrelations as a structure, it is possible to distinguish structure-forming indicators in it. These include the characteristics of the quality of thinking that determine the prognostic skills (Figure 1).

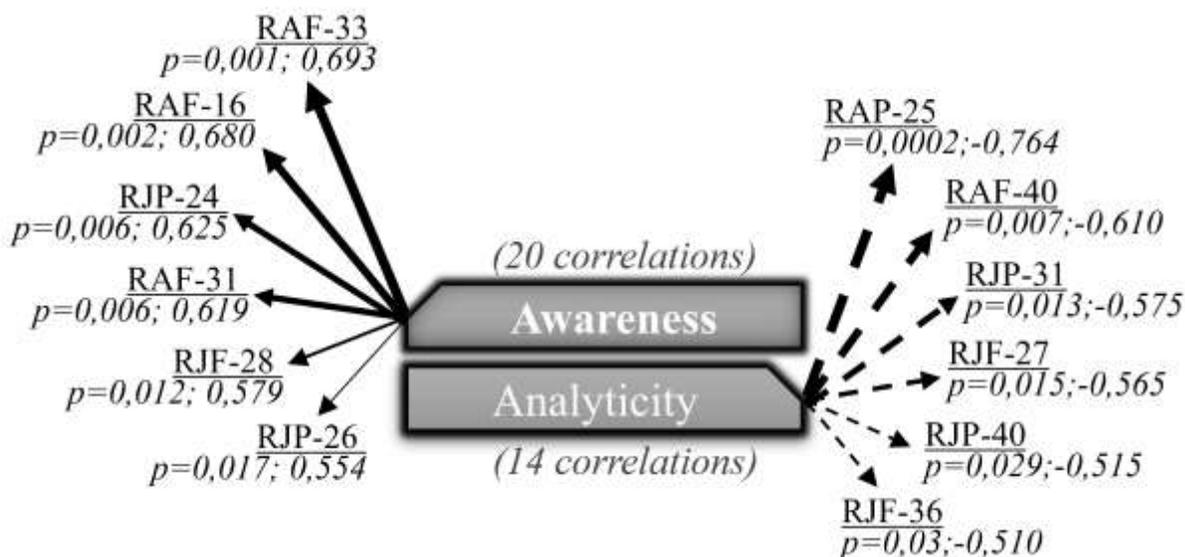


Figure 1. Characteristics of thinking that dominate in the subjective experience of mental states (general picture)

Legend: RAF - Relief of mental state of anger in the future; RAP - Relief of mental state of Anger in the Past; RJP - Relief of mental state of joy in the Past; RJF - Relief of mental state of joy in the Future.

16. Respiratory system manifestations; 24. Passivity-activity; 25. Drowsiness - cheerfulness; 26. Flaccidity - glibness; 27. Lowers - raises; 28. Tension - emancipation; 31. Passivity - activity of behavior; 33. Impulsiveness - regularity; 36. Inadequacy - adequacy; 40. Closeness - openness.

The strongest connection of the subjective experience of states and forecasting is provided by such qualities of thinking as awareness (20 significant correlations, $p \geq 0.01$) and analyticity (14 significant correlations, $p \geq 0.01$) of thinking. The awareness of thinking in adolescents with deviant behaviors, their ability to track current conditions and circumstances and build predictions based on them are determined by somatic (breathing) and behavioral (activeness, regularity) manifestations of behavior at anger, as well as by activity, glibness and emancipation when experiencing the state of joy. The reduction of the ability to logically analyze situations when making decisions and predictions – that is, worse analyticity of thinking

in making forecasts by adolescents with deviant behaviors – is determined by openness of behavior, cheerfulness of experiencing anger and activity, adequacy, openness of behavior and more vivid expression of the state of joy.

Such characteristics of the quality of thinking as awareness and analyticity are structure-forming ones – they unite around themselves indicators of the subjective experience of mental states in the past and in the forecasted future. On the one hand, these qualities are more involved in shaping the experience of mental states of joy and anger and on the other – they are also more determined by a number of characteristics of the subjective experience of these states.

The data collected from the studies of the adolescents with deviant behavior was divided into groups according to the level of overall forecasting capability. As a result, two subgroups were formed: the group with medium and the group with low levels of forecasting. Figure 2 shows the most significant correlations of the overall forecasting capability with characteristics of the experience.

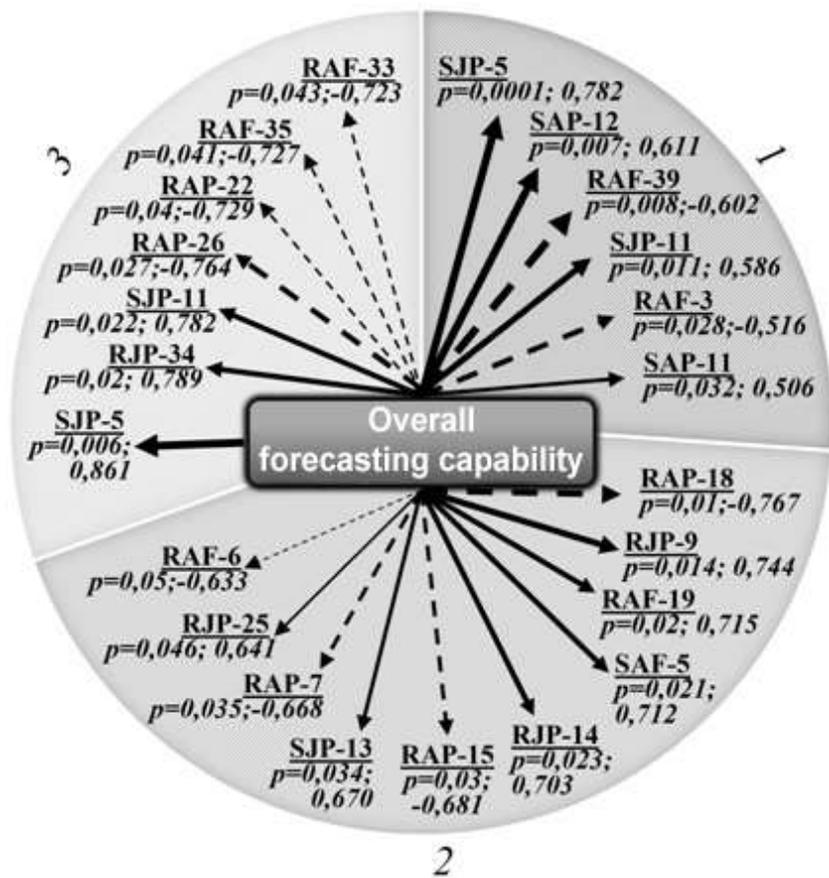


Figure 2. Overall forecasting capability in the subjective experience of mental states

Legend: 1. Total data array; 2. Correlations in the group with low forecasting capability; 3. Correlations in the group with average forecasting capability.

RAF - Relief of mental state of anger in the future; RAP - Relief of mental state of Anger in the Past; RJP - Relief of mental state of joy in the Past; RJP - Relief of mental state of joy in the Future; SJP -

Self-reports of the state of Joy in the Past; SAP - Self-reports of the state of Anger in the Past; SAF - Self-Reports of the state of Anger in the Future.

Self-report indicators: 5. Actions / deeds / activities; 11. Time / conditions / place; 12. Mnemic / thought / reflexive processes; 13. Symbols / abstraction

"Mental state relief" indicators: 3. Features of attitudes; 6. Imagination; 7. Speech; 9. Volitional processes; 14. Motor activity; 15. Cardiovascular system; 18. Gastrointestinal tract sensations; 19. Oral mucosa condition; 22. Sadness - optimism; 25. Drowsiness - cheerfulness; 26. Flaccidity - glibness; 33. Impulsiveness - regularity; 34. Hastiness - forethought; 35. Uncontrollability - controllability; 39. Lack of confidence - confidence.

Overall forecasting capability or overall processes of predicting the state of joy in adolescents with deviant behavior are built on the basis of actions and conditions accompanying this state in the past. In other words, the subjective experience of adolescents with deviant behavior keeps information about the behavior and actions determining joy, conditions and location of these actions, acting as a trigger for predicting the state in the future. This specificity is inherent in adolescents with an average level of the overall forecasting capability which is also ensured by the reasonableness of actions and behavior. Adolescents with a low level of overall forecasting capability build predictions of experiencing joy based on a symbolic reflection of the state in their subjective experience. The intensity of volitional processes and motor activity in the past experiences of joy also determine the prediction of this state.

Prediction of the state of anger in both groups of adolescents is mainly based on the stability of mental and mnemonic processes and conditions at which the state of anger was experienced in the past. But the specific nature of the prediction of the state of anger in adolescents with deviant behavior depends on the development of overall forecasting capability. The average level of forecasting is determined by the intensity of past experiences of anger. The less pronounced the characteristics of the experiences remain in the subjective experience of anger, the more predictable this condition is in the future. Forecasting processes for adolescents with a low overall forecasting capability are determined by the characteristics of the state of anger which reflect speech markers and physiological reactions that either determined the anger or accompanied it.

Prediction of mental states of joy and anger is based on the subjective experience of experiencing these states, namely on certain characteristics of the experience which reflect the content and intensity. Forecasting is also provided by the quality of thinking – that is, certain thought processes determine the specifics of forecasting. In our study, the characteristics of forecasting or the quality of thinking are interrelated with the characteristics of the subjective experience of states (Table 3).

Table 3. *Structural indicators*

Scales: (Regush)	General array:		Predictive value (<25):		Predictive value (>25):	
	Num ber of correlations:	p>	Number of correlations:	p>	Number of correlations:	p>
Overall forecasting capability:	6	,014	10	,028	7	,028
Analyt	14		26		6	

icity:		,03		,023		,027
ness:	Aware	20	12	,027	5	,024
lity:	Flexibi	3	5	,033	2	,001
ctivity:	Perspe	7	8	,031	25	,023
entativeness:	Argum	6	12	,021	10	,019

Discussions

Characteristics of thinking that dominate in the subjective experience of mental states in adolescents with an average level of forecasting include perspectivity and argumentativeness, and in adolescents with a low level of forecasting these include analyticity and awareness. Creating interrelations with the characteristics of the subjective experience of the states of joy and anger, these mental processes determine the peculiarity and success of predictions concerning these states and activate certain aspects of the content of experience of the states for making forecasts.

Conclusion

The subjective experience of mental states of adolescents with deviant behaviors contains substantial components related to various mental phenomena (evaluation, attitudes, emotional-volitional processes, expression, mnemonic and reflexive processes, desires and dreams, symbols and abstractions, time and event aspects);

Adolescents with deviant behavior have a medium and low level of forecasting capability. Adolescents with an average level of overall forecasting capability build predictions of mental states relying on perspectivity and argumentativeness of thinking while adolescents with a low level of overall forecasting capability rely on analyticity and awareness of thinking;

Each time aspect of the subjective experience of the studied mental states is characterized by certain correlations with the qualities of thinking. Forecasting is determined by the content and intensity of the characteristics of the subjective experience of mental states of joy and anger. That is, we have revealed a correlation between sensual (subjective experience of mental states) and cognitive (thinking quality) spheres of adolescents with deviant behaviors when they build forecasts.

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