

Ethno-cultural context of clinical-psychological interrelationships in alcohol dependence

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Abstract. *We have studied interrelationship between clinical manifestations of alcohol dependence and peculiarities of cognitive activity in persons of Tuvinian and Russian nationalities. Decrease of productivity of remembering and available level of generalizations having greater depth in Tuvinian alcoholic patients has been revealed. Interrelationship of severity of disease and graphic phenomena-indicators of organic disturbances has been identified.*

Keywords: alcohol dependence, pictographic images, cognitive disturbances, organic disturbances, graphic peculiarities of a drawing, ethnicity

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INTRODUCTION Republic of Tyva represents by itself an example of territory where level of health is the lowest as compared with other regions of Russia and index of documented prevalence of alcoholism continues to remain high (1,775 per 100,000 of the population), testifying the increase of severity of problems associated with alcohol use (Tishkov & Vishnevsky, 2004; Semenova & Manchuk, 2007)

Among consequences of alcohol abuse, disorders of psychoneurologic spectrum occupy the first place among causes reducing human functioning of full value (Tarkhan, 2009; WHO, 2011). The question is about such consequences of alcohol dependence as brain impairments accompanied by disturbances of cognitive activity and formation of cognitive deficit (Bokhan & Mandel, 1995; Arzumanov *et al*, 1999). In this association, the important value for therapy and rehabilitation of persons with alcohol dependence is acquired by diagnosis of such disturbances just at functional level – with identification of compensator abilities of brain structures in patients with alcoholism of various degree of severity of clinical manifestations of disease (WHO, 2011).

In this context, we have formulated the following objective of investigation: revealing peculiarities of cognitive activity in interrelationship with severity of clinical manifestations of alcohol dependence in persons of Tuvinian and Russian nationality.

SUBJECTS AND METHODS Clinical and experimental-psychological examination was administered to 134 alcoholic patients (ICD.10: F10.2) under account at Republican Substance Abuse Clinic of Republic Tyva, of whom 70 persons of Tuvinian nationality (mean age 44.3 ± 10.0 years, length of disease 9.7 years) and 64 persons of Russian nationality, permanently living in Republic of Tyva (mean age 42.6 ± 10.23 years, length of disease 10.2 years).

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For study of traits of intellectual integrity of patients we used method of pictograms and methods of “10 words” (Khersonsky, 1988; Rubinstein, 1999; Venger, 2003). Concerning alcohol dependence, application of drawing methods is of special interest, because activity associated with performing of drawing tests allows to major extent manifestation of personality peculiarities. Concerning investigations of ethnocultural character, method of pictograms is most preferable because its basis – pictographic image – has been represented as a drawing mean of communication and verbal component in the structure of this method has small weight which, in turn, allows leveling difficulties of language limits.

Statistical processing of obtained results was conducted of the kit-applied programs for statistical processing of data STATISTICA 6.0. Comparison was conducted with Mann-Whitney U-test. Analysis of correlations was carried out with r-Spearman, τ -Kendal criteria.

RESULTS AND DISCUSSION Ethnocultural peculiarities of intellectual disabilities of persons with alcohol dependence are reflected in decreases of memory and namely in decrease of productivity of mediated remembering. Method “10 words” directed at investigation of memory confirms presence of decreases in alcoholic patients of Tuvinian and Russian nationalities – their indices of memory (number of words in the third reproduction and reproduction after an hour; presence of extra words and balking on them) below normative. Also character of differences between alcoholic patients of different ethnicity revealed with basic index of the method – reproduction of words after an hour – being the index of non-mediated remembering or memory proper is repeated. In Tuvinian group this index is reliably lower ($p=0.017$) than in group of Russians, and constitutes in average $4.65+0.41$ words, whereas in Russians the average is $6.88+0.09$ (**Table 1**). Moderate abstractness, exactness and reality of thought, ability to find close to notion image are characterized by index of appropriateness of pictogram.

Table 1 Differences between probands according to indices of memory obtained with method of pictograms ($p=0.047$) and “10 words” ($p=0.017$)

Ethnicity of probands	Index of mediated reproduction		Index of reproduction of words after an hour	
	M±m	Sd	M±m	Sd
Tuvinians	6.74+0.61	3.18	4.65+0.41	2.15
Russians	8.94+0.92	2.76	6.88+0.74	2.10
Normative indices	13.52+0.07	1.42	9.0	1.0

Values of the index of appropriateness of images are reliably higher in the group of Russians ($p=0.047$). Tuvinians more seldom than Russians are able to find appropriate to notion image – indices of appropriateness 9.85 and 11.78, respectively (**Table 2**).

Index of appropriateness of pictographic images in every separate case reflects ability of responder to find logical correspondence between semantic of the word and the drawing; in contrast, responder is not able to avoid semantic “shifts” and thought distortions. The most illustrating regarding similar distortions – in both groups of Russians and Tuvinians – are complex abstract notions of pictogram: “poisonous matter”, “justice”, “development”, etc. Therefore, semantic of drawing is appropriate to semantic of notion “poisonous matter” in 61.9% of minutes of persons with alcohol dependence of Tuvinian nationality and 77.8% of minutes of Russians, where of relevance is semantic component “poisonous”, “poison” (images of bottle of poison, snake) and component “matter” (image in form of question mark or question mark proper). Shifts of semantic field in the rest minutes have been reflected in fixation in the drawing of semantic emotional component “something unpleasant, insulting”: images of one or two faces with dropped angles of the mouth – “mischievous man”, “one has insulted another”; person with whip – “wants to hit another, poisonous matter is similar such an insult as well”; drawing of a man and dog – “he insults another with words «you, dog!»” Appropriate images on

notion “justice” embrace 29.6% of minutes of Tuvinians and 44.4% of minutes of Russians, logical shifts actualize emotional-rating component: “anything good” (image of the sun – “I am fond of justice, hate lies”; person with raised hands – “feeling joy”), “something correct” (figure “5” – “correct mark”; scene “two persons have disputed, wanted to shoot, then decided to be in peace”), as well as semantic attribution (image of a person with a case – “this is a boss, he must show justice”; fist – a man bangs his fist on the table – fights for the right, justice”).

As a whole, correlation of portion of appropriate images on every complex abstract notion of pictogram in minutes of Russians and Tuvinians and standard number of appropriate notions of images testifies the negative influence of alcohol dependence on level of summarization, constituted by decrease of level of available abstractions, distortions of summarization, actualization of inadequate logical associations. In addition, in persons of Tuviniian nationality alcoholization to greater extent hurts ability for summarization – summarization at the level of complex abstract notions is accessible for alcoholic patients of Tuviniian nationality to lesser extent as compared with Russians of the same age with the same stage of disease development.

The index of appropriateness of pictograms is influenced by actualization of images having individual significance for the responder. These images bearing emotional-personality “burden”, abstraction does not raise above limits of individual experience, association is specific and is associated directly with realities of life of the examined that at the same time does not allow defining the image as an inappropriate one because it is an adequate one to individual experience of the proband, mediated by this experience.

In the Tuviniian group, number of such images is reliably higher ($p=0.012$) than in the group of Russians – 2.33 and 1.0, respectively (**Table 2**).

Table 2 Cognitive differences between probands according to number of individual-significant images ($p=0.012$) and index of appropriateness of the images ($p=0.047$), obtained with method of pictograms

Ethnicity of probands	Number of individual-significant images		Index of appropriateness of images			
	M±m	Sd	Abs.		%	
			M±m	Sd	M±m	Sd
Tuvinians	2.33+0.27	1.41	9.85+0.45	2.35	65.67+3.0	15.67
Russians	1.0+0.33	1.0	11.78+0.44	3.19	78.2+3.0	21.27
Normative indices*	-	-	-	-	86.3+0.34	6.81

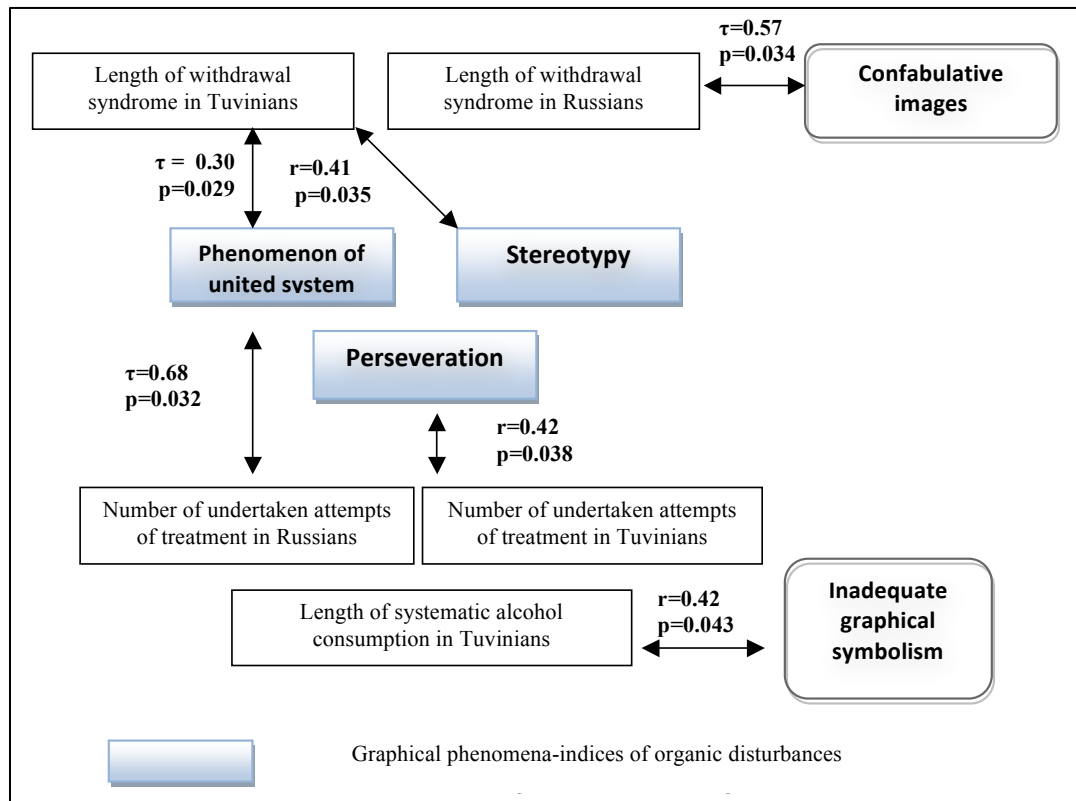
* - normative values according to number of individual-significant pictographic images are absent, normative indices of appropriateness of pictographic images in absolute values are absent

Alcohol dependence influencing on intellectual safety of responders detects an association also with fine peculiarities of performing the method of pictograms; in particular, severity of clinical manifestations is associated with structural and graphical peculiarities of the drawing. So, repetition of human bodies, of small details of human body, objects, symbols – typical and atypical stereotypy – has an association with length of withdrawal syndrome ($r=0.41$ during $p=0.035$ in the group of Tuvinians); use of previous drawing for building of the image on the subsequent notion of pictogram – phenomenon of “united system” reflecting shift of stereotyping idea – correlates with number of undertaken attempts of treatment in group of Russians ($\tau=0.68$, $p=0.032$) and length of withdrawal syndrome in Tuvinians ($\tau=0.30$, $p=0.029$; **Figure 1**). And the longer systematic alcohol consumption is, the more often there perseveration is: direct repetition of identical images for two and more notions of pictogram ($\tau=0.42$, $p=0.038$ in the Tuviniian group and $\tau=0.26$, $p=0.034$ for entire sample).

All these structural-graphical peculiarities of pictographic images of alcoholic patients – typical and atypical stereotypy, phenomenon of united system, perseverations – are reflection of disturbances having organic character. Alongside, clinical signs of alcohol dependence detect association also with topical parameters of pictogram, characterizing traits of thought of alcoholic patients.

With growth of severity of manifestations of alcohol dependence, metaphoric of thought decreases ($\tau = -0.26$, $p = 0.040$), more often thought disorders are found, inadequate graphical symbolism grows (exclamation mark on notion “justice”; $r = 0.42$, $p = 0.043$ in the group of Tuvinians); number of “confabulative” pictographic images increases, in which semantic field of the notion is not associated with semantic field of corresponding-to-it drawing and association is thought out by the proband ($\tau = 0.57$, $p = 0.034$ in the group of Russians).

Figure 1 Correlation associations (r-Spearman, τ -Kendall) of clinical signs of alcohol dependence and features of performance of method of pictograms in the groups of alcoholic patients of Tuviniian and Russian nationalities



Thus, decrease of portion of adequate images on every abstract notion of pictogram in minutes of alcoholic patients – Russians and Tuviniians – testifies the negative influence of alcohol dependence on accessible level of summarization, consisting of decrease of level of accessible abstractions, distortions of summarization, actualization of inadequate logical associations. Thought disorder and namely decrease of productivity of non-mediated remembering also is typical for alcoholic patients, irrespectively on their ethnicity.

Alongside, in persons of Tuviniian nationality alcoholization to major extent affects ability to summarize – in result of alcohol dependence summarization at the level of complex abstract notions is accessible to alcoholic Tuviniians patients – to lesser extent as compared with Russians of the same age with the same stage of disease development ($p = 0.047$). Decreases of productivity of immediate remembering have major depth also among Tuviniians patients with alcoholism as compared with Russians ($p = 0.017$).

Individual-significant images of pictogram bearing emotional-personality “burden” and this is why are limited by specific situation within individual experience and realities of life of the proband, predominate among alcoholic patients-Tuviniians ($p = 0.012$), compared with Russians.

Graphical traits of pictographic images are conditioned by severity of clinical manifestations of alcohol dependence in ill Russians and Tuviniians. Length of systematic alcohol consumption, duration of

withdrawal syndrome, number of undertaken attempts of treatment are associated with phenomena – indices of organic brain disturbances – perseveration, stereotypy, “united system” ($p < 0.05$), as well as with intellectual characteristics of images of pictogram: lesser metaphoric, growth of number of confabulative associations and inadequate graphical symbols ($p < 0.05$).

Diagnostic of disturbances of cognitive domain of alcoholic patients serves to tasks of the therapy, which conducting in relation to patients of other cultures requires account of ethnocultural context of clinical-psychological interrelationships in alcohol dependence.

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