



Psychology of health

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Psychodiagnostics of the destructive influence upon the ecological habitat factors

Social-natural habitat in the form of ecological vital functions can influence upon the homeostasis of inner mans habitat that disturb standart parameters psychological and psychical health of teenagers living in the negative ecological habitat. The results of many years experimental-psychology research of teenagers borning and living in the negative ecology-chemical habitat with using manyvectotial patopsychological and pathopsychology-mathemetical discriminant analysis on the conclusive level, found out firm neurotoxic and neuroendocrinotoxic nfluence of the complicated chemical inorganic compositions. Toxic influences break development of individuality, in other words the ability to be full subject from the position of the conception constitutionally-continued area of the personality in the system of complicated multilevel organization which is determined by interaction and independency of inner psycholotypological and outward factors.

Key words: psychical health of teenagers, anomalous personal and behavioural changeableness, destructive ecology factors of habitat.

To the antropogenetic factors of habitat which are created by the results of mans activity also ake to waste products of chemical plants, chemical pollutions, throwing out to the air , water and ground. Polluters of the enviromental habitat influence on the mans organism but the most dangerous are the substances, compounds, compositions which by the penetrating to the mans organism call changes in the brain cells and then in the behaviour. It is known that mans health even of the whole groups of population depend on the influences of different natural and social subsystems, realizing through the physiobiological, psychologyphysiologocal and biochemical regulating mechanisms, reverberating on the physiobiological, phycological and psychical mans condition.

Rough growth if the industrial manufacture typical for our epoch caused sizeable changings in the structure and geographical differents outward chemical habitat. In big cities more and more waste products are thrown out. Many from this waste products can cause changins in endogenous, neurobiochemical processes, that cause behaviour violations. So, in the atmosphere of Stavrapol Territory in 1990 only by one chemical manufacture « Azot» Nevinnomisk city was thrown tons of harmful substances (N.M. Nickolaev, 1990). And to one of Nevinnomisk inhabitants in one year accounts more than 660 kg of harmful substances (oxid of nitrogen, carbon sulphury



anhydride and so on); accordingly in Budennovsk – nearby 80 kg, in Stavropol – nearby 50 kg. As for Rosgidrometr indexes, nearby 1/3 population of Russia feel harmful influences from different pollutants. Their level exceeds in 10 times and are more our admissible sanitary-hygiene norms. Therein lies a problem in no-signal safe polluting environmental habitat.

Making science researches we can not ignore the fact that in present time nearby 1000000 chemical compounds are known and about 70000 from them are put to the internet register as a potential toxic and more than 1000 as hightoxic substances.

Moderate dangerous compounds in long outward hardly noticeable influence in small doses cause functional vidations in the organism whicy acquire irrevercible character.

Agressive ecology-chemical factors in the form of cleaners, beauty treatments, food preservatives, dyies stabilizers, their toxic properties address at first turn to the more highsensible biological substatums – to the brain neurons, to the centre of neuroendocrine and neuroimmune systems, that can potentially change the functions of phychical activity and at the first turn – the behaviour.

Complex estimate of the child health state which was made by the deep medical examination of school boys at the age of 7-11 years showed that the whole number of healthy children in the high polluted area arranged 6,6 % and in the control area – 19,9% (J.V. Novikov, 1999). Influencing on he womens organizm and child-bearing, ecology-chemical factors cause the changings of nonspecific organism resistance, promote violation pre-natal development (E.E. Sarkisyan, M.A. Bashkirova, 1987). M.J. Studenikin showed that many xenobiotics are the reason of complex reactions and affection of CNS, lowing IQ, min. brain dysfunction, behaviour anomalies, neurotic reactions, lowing school results, but this dependce has not been confirmed eyt by deep analyse and the fact of the changings in CNS of children who live in zones of ecological crises are understate. In 12 more industrial advanced regions of Russia which can be taken to the zones of ecological crisis, the level of infantile death is more on 25% than in safe areas. It is important to pay attention that the rak understanding this index in zones of ecological tension is rather remain behind from its action in relatively «clean» areas («The health of population and chemical pollution of enviromental habitat», - M., 1994). In zones of ecological tension and crisis where is hightended level of atmosphere pollution with sulphurelted hydrogen, hydrocarbon, ammonia, we can see childrens lag in physic, neuro-psychical evolution. It is noted there high prevalence of cronical deseases, which exceeds in 3-4 times of children deases in «clean» areas. (F.F. Dautov, 1990).

Initial position of this work is the fact that psychological aspects of disadaptation are the primary link which becomes apparent in functional changes of psychical activity and psychological expereinces in the norm context. Forward succession of factors which extends disadaptive traits becomes apparent in forming irreversible or little revercible changings in different psychobiological mans systems, also in his physical and psychological activity which is the degree indicator of neurointoxication upper section of CNS.



It is really true that becomes a question about what definition is more fit to psychological health and why we distinguish it from psychical. We think and most part of experts in the area of psychology think so too that psychology of health is the part of general culture of man. Health is the reflection of healthy existence, personal and social well-being. The problem of the correlation of soul and body in the medicine history always attracts doctors.

World-wide organization of public health determines health that not only as the absence of the disease, but also like full physic, social and soul well-being which are necessary for normal personal forming. It is known from S.L. Rubinstein, L.S. Vigotsky works that only personality has psychological qualities which rule self-consciousness. Personal character is acquired by psychological functions only on the basis of self-consciousness of personality. For example to think for the child is to remember, for teenager to remember is to think. Psychologically functions enter to the new bond with each other through the personality. The same attitude is to the functions of attention, perception and activity.

If the psychological functions become apparent fully through the personality, so the characteristic of the psychological health is better to present as the vector «norm-pathology» in the form of constitutional-continued personality space: psychology norm is the accentation, frontier anomalous personality, psychopathy.

B.S. Bratus offered multileveled model of psychical health and picked out several levels of personality structure. Every level has its own understanding of psychical health. By this model the best level of personal health is in answer to production semantic orientations, determination of general sense of living, the attitude to yourself and other people does the regulating influence on the lower levels which characterize the degree of adaptation and condition.

Modern theoretic, experimental and applied approaches in the psychology of personality and psychology correction characterize psychology health as the ripeness, safety and activity of mechanisms of personal self-regulation, the measure of the mans opportunity (to exceed through the bounds) of biological, social and mental determination, like an active and autonomic subject of life in changing world.

Telling about what vector «norm-pathology» is we can not mention to the continuum norm-PAL, because in the real life among population there are flexible passages from one condition to another. At the same time vector «health-disease» is not a continuum because in that case we can see the passage from one condition to another like steps.

The aim of the research – is the psychological differentiation of teenagers who live in the habitat with predominating of hard chemical nonorganic compositions and teenagers who live in resort regions.

The methods of experimentally-psychology research: 1. Diagnostic inquirer of personal pathology A.E. Lichko (1978); 2. Determination method of the neurotization and psychopathy (E.V. Bajin, 1976; I.B. Lasko, 1980); 3. The scale of Teilor (1953); 4. Methods of Aizenk (1963); 5. Clinic inquirer for exposure and appreciation of neurotic condition (K.K. Jahin, D.M. Mendelevich, 1978); 6. Multivector uniform psychology analysis (I. V. Boev, O.A. Ahverdova, 1998).



Mathematical methods of researches are shown by nonmodulation statistic in the way of discriminant and factor analysis with using the criterion of x-square, based upon zero hypothesis that there are no any distinction between these groups (K. Braunly, 1978).

The material of investigation involved the empirical analysis of personal experiences and behaviour stereotypes of 236 teenagers, 204 of them took part in the experimental-psychology checkup. The results of 32 of them were excluded from the pathogenetic analysis. Taken to account their frontier psychical diseases which were not tied together with ecology-chemical influences, but determined by endogenous and psychogenetic factors, that raised the realness of the received results. By the first stage the experimental-psychology diagnostic was made. This diagnostic was touched upon 2 subpopulations of teenagers from different regions of living. By the second stage the differential psychology diagnostics of teenagers from different habitat depending from belongings of probationers to the structure of personal psychology type was made.

The first group of probationers (basic) was formed from 120 teenagers. In their ecology habitat SHNK was predominated. The division of the group was made depending on the belongings them to the structure of personal psychology type: sub-group 1.1 – epileptics – 30 of probationers; 1.2 – schizoids -30; 1.3 – cycloids -30; sub-group 1.4 – hysteroids – 30. The second group (comparative) was formed by teenagers from resort region of the city Kislovodsk -84 of probationers. The division in these sub-groups: the sub-group 1.1 – epileptics – 22; 1.2 – schizoids – 18; 1.3 – cycloids – 28; the sub-group 1.4 – hysteroids – 16 of probationers.

The analysis of own experimentally-psychology researchers indexes of teenagers who live in ecology-chemical habitat with determination of complicated chemical nonorganic compounds and resort habitat.

In the table 1 middle indexes are presented, their standard deviation which show to the authenticity of differences, which were received in the process of comparative multivector patopsychology analysis of 2 subpopulations of teenagers.

The table 1

Comparative patopsychology facts of the middle indexes, their standard deviation if two compared groups of teenagers who live in favourable resort zone and in ecology-chemical habitat with predomination of CCNC

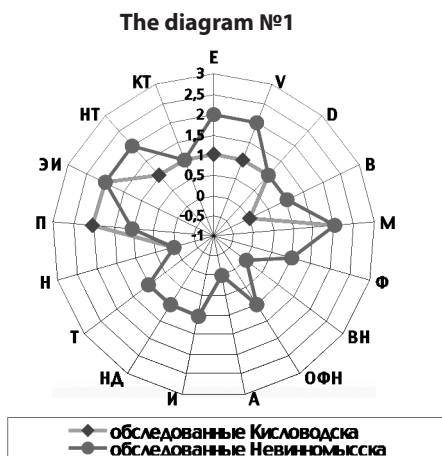
	The name of variable	Group-1		Group-2	
		Middle	Standard deviation	middle	Standard deviation
1.	The index of the emancipation - E	3.10588	1.57377	3.56115	1.83806
2.	The index of the inclination to drinking alcohol - V	1.41176	4.67336	1.73381	4.45846
3.	The index of delinquention - D	2.72941	2.18430	2.97122	2.21962
4.	The index of minimal brain insufficiency-B	3.31765	1.39908	3.47482	1.41591
5.	The index of masculinization - M	5.38824	2.74336	4.88489	2.80031



	The name of variable	Middle	Standart deviation	middle	Standart deviation
6.	The index feminization - Φ	3.32941	2.03767	4.88489	2.07934
7.	The scale of vegetative abnormalities	3.00000	6.33208	1.84892	5.95139
8.	The scale of obsessive and fobic abnormalities	-1.03529	3.92321	2.28777	3.61903
9.	The scale of asthenia	2,88235	3.69817	2.28777	3.96405
10.	The scale of hysteria	0.85882	3.94653	0.92806	3.74086
11.	The scale of neurotic depression	1.31765	4.03913	0.48201	3.87177
12.	The sacle of alarm	0.94118	3.51647	0.33813	3.42530
13.	The index of neurotization-H	32.07059	31.61366	27.87050	31.60073
14.	The index of psychopathy - П	-6.97647	12.97982	4.26619	13.58632
15.	Extraversion -Intraversion EI	14.85882	7.76462	14.12230	2.97200
16.	Neurotic anxiety-HT	12.16471	4.35848	13.77698	4.15295
17.	The scale of Teilor -T	18.16471	8.36211	18.64748	8.31958

Multivector patopsychology analys (look for diagram №1) made possible to show combination of the patopsychology markers with specific weight of deposit to discrimination of everyone from them who take part in differential diagnostic of comparative groups : the index of emancipation -11,4%; the index of vegotive instability -12,3%; the index of the obsessive-fobic violations -6,4%; the index of the neurotic depression – 8,5%; the index of psychopathy -7,2%; the index of neurotic anxiety -43%.

Comparative multivector patopsychology analys of indexes of the researcher of teenagers who live in ecology-chemical habitat with predominance of CCNC and in resort habitat (Kislovodsk)



- robatoners from Kislovodsk
- probationers from Nevinnomisk



We can say that for the teenagers who live more than 10 years in ecology-chemical habitat with the predomination of CCNC it is peculiar the constitutional anxiety (outward without motivation, amorphous), with elements of psychopathy (the scales T, П) in the way of conflict, of cant living together, with the inclination of small accusation to surround world, with constnt discontent of their life and the behaviour of thei near people. We can see the reacnions of the emancipation (the scale E) – disagreement with the opinion of relatives, coevals, with the wish to do contrary to the decicions of parents, with the aspiration for false independence, with consbant psychology resisnance to adults. These reflect the constitutionally-psychology negative drift under the influence of CCNC from the diapozone of psychology norm – accentuation to the side of frontier anomalous personality (FAP). Redoubling of manifestation of psychopathy and emancipation is observed by the fone of high indexes of masculization (the scale M) which is a favourable base for stabilization of anomalous psychology changeableness.

Discovered negative psychology type drift (look for diagram 1) is accompanied by transformation of psychology personal experiences to the patopsychology with increasing of neurotic depression – the scale НД (pessimism, pauperization of motivation, the feeling of despair), obsessive-fobic manifestations – the scale ОФН (high-tened anxiety, the feel of scare, uncertainty, doubts). Vegetative instability (the scale BH) especially can be observed when during long contact with CCNC. We can mentioned the rippling of arterial pressure (AP), pulse, hyperemia, hyperhidrosis, cooling of extremity, allergic sensations. Against the background of negative psychology type drift, psychology inclination to alcocholization(the scale V) is increasing and stabilizing. It reflects the forming of personal decompensation.

Patopsychology-mathematical analys helped to build lined discriminant function which make the role of differential diagnostic patopsychology scale: $Y = - 0.1661X_1 - 0.0301X_2 - 0.02709X_3 - 0.12851X_4 + 0.01256X_5 - 0.03623X_6 + 0.07122X_7 - 0.09799X_8 + 0.01783X_9 - 0.15580X_{10} + 0.06756X_{11} + 0.02020X_{12} - 0.00318X_{13} - 0.01762X_{14} + 0.03023X_{15} - 0.17669X_{16} + 0.04170X_{17}$, where X – defenite meaning of the constant index

If in the process of index substitution which were obtained from the results of experimentally-psychological researches, the summary meaning Y – is more than discriminative index R, the results of constant probationers teenagers will be so, because its constitutionally-psychology peculiarities were not exposed by the negative influence of habitat ,in particular CCNC and very likely that the probationer is living in the resort ecology clean zone. If the summary meaning of Y is more than discrimination of index R, so constitutionally-psychology bases are exposed by distracnive influence from the side CCNC, predominating in concret ecology-chemical habitat.

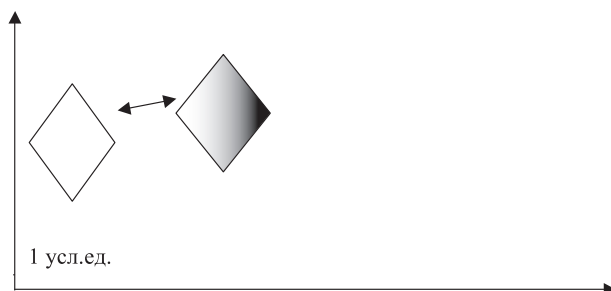
Making patopsychology express-diagnostic, the psychologist can pick out considerations from subpopulation of those teenagers who have constitutionally-psychology peculiarities and their psychological and psychical condition was exposed by anomalous changeableness, that is determined by long influence and interaction of inner constitutional factors with outward – CCNC.



On the first barchart we can see visual results of differentiation of teenagers from compared subpopulations. You can mention rather low meaning of the square of Mahalanobis which is equal 1 c.u. It helps us to understand that the most part of probability is mistaken diagnostic but it does not exceed the first group -37%, the second - 33%.

These results can help us to know not only the differences, but the definite similarity between the teenagers of compared subpopulations, giving us the foundation to consider about having toxic factors also in resort habitat.

The visibility of results of patopsychological variables, collaborating in differential diagnostic of teenagers to three-dimensional space who live in favourable resort habitat with predomination of CCNC.



- teenagers of favourable resort zone
- teenagers from the habitat with the predomination of CCNC

BARChart 1

The compared many-dimensional patopsychology and mathematical analysis by the example of teenagers with hysteroidic structure of psychology type, who contact for a long time with CCNC and those teenagers who live in resort region, it confirmed rather essential and authentic differences of two psychology types. And this is the value of the methodological antropocentric approach. In the table 2 we can see the middle meanings of patopsychology indexes which reflects authenticity of differences receiving during the process of multivector and comparative analysis.

The comparative multivector patopsychology analysis (the diagram 2) helped us to understand the opportunity to know the combination of the markers with their specific gravity, their contribution. They take part in discrimination of two compared subpopulations of teenagers : the index of emancipation – 13,3%; delinquention – 20.4%; minimal brain disfunction – 9,3%; feminization 27%; astenization – 11%; neurotic depression – 30%; anxiety – 15,3; psychopathy – 10,3%, neurotic alarm – 11,1 and the scale of Tailor – 8,6.

**The table 2**

The compared facts from the middle indexes and standart deviation of 2 groups of teenagers with hysteroid structure of psychology type, who live in favourable resort habitat and in ecology-chemical habitat with the predomination of CCNC

	The name of variable	Group-1		Group-2	
		Middle	Standart deviation	middle	Standart deviation
1.	The index of the emancipation - E	3.10588	1.57377	3.56115	1.83806
2.	The index of the inclination to drinking alcohol - V	1.41176	4.67336	1.73381	4.45846
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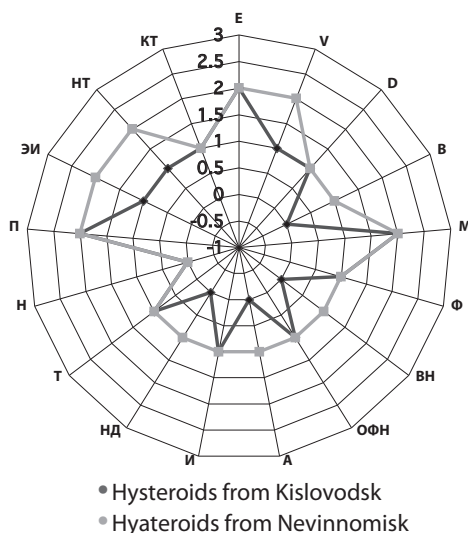
Fixed combination of the patopsychological indexes which are typical for the hysteroid structure of the teenager, reflects really low tolerance of the representatives of hysteroid psychology type to the chemical structure of CCNC. At first we have to mention the encreasing of the index of minimal brain disfunction, this combines with the signs of feminization. In the whole it reflects and neurotoxic and neuroendocrine-toxic destructive influence of CCNC to the constitutionally psychology mechanisms of the development of the teenagers with hysteroid psychology type. And this confirms earlier known tendention of the teenagers population.

Signs confirmation of the anomalous of personal and behaviour change are the indexes of the delinquention, emancipation and psychopathy with neurotic alarm. This point to confirm negative constitutionally psychology type drift of teenagers with hysteroid psychology type from the diapazone of psychology norm to the side of the dipazone of boardaring personal anomalous.

In this drift period we can see the encreasing of individual instability of the psychical and psychological adaptation and the actualization of constitutional personal mechanizms of the decompensation happen. An outward of decompensation is the transformation of psychology experiences to the patopsychological, at first it is asthenetic manifestation, neuritic depression, repeating anxiety. Combin-



ing of the neurotic and repeating anxiety is the prognostic unfavourable sign for the hysteroid personal structure. If the manifestation of organic brain damage increases with the help of the chemical factors of ecological habitat, we can suppose that for teenagers with hysteroid psychology type to live in ecologically-chemical habitat with the predomination of CCNC is not the normal condition to safe their psychical and psychology health. More than, the risk of neurotic and psychosomatic deases increases.



The diagram 2

The compared multivector patopsychology analys of the indexes of researches of the teenagers with hysteroid structure of psychology type who live in ecology-chemical habitat with the predomination of CCNC and resort zone.

Many-dimensional patopsychology analys of indexes, having the specific gravity more than 5% but with negative sign characterize the teenagers of resort zone who have patology inclination to the alcocholization(-23%), to the masculinization (-9%), to the increasing of the neurotic index (-15%). So the teenagers with hysteroid structure of psychology type from resort region differ by another combining of the patopsychology markers of the discremination and it means the predomination of forming alcohol behaviour stereotype with neurotic experiences.

Thus, the teenagers with hysteroid psychologe type differ by the limited psychology biological reserve, that in case of the long unfavourable contact with ecology chemical factors, it leads to the frustration of mechanizms of the constitutionally psychology adaptation and compensation.



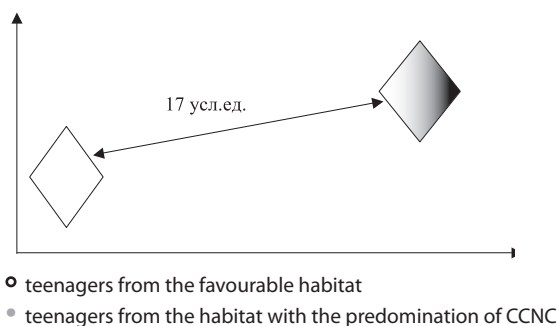
Patopsychology analysis result in building line discriminant function, it makes the role of the differentially-diagnostic patopsychology scale

$$Y = -3.45554X_1 + 2.97447X_2 - 4.10158X_3 - 4.76383X_4 - 1.92340X_5 + 3.80144X_6 - 0.01045X_7 + 1.14174X_8 + 1.22010X_9 - 1.54403X_{10} + 2.25397X_{11} + 1.11630X_{12} - 0.22862X_{13} + 0.61808X_{14} - 0.50589X_{15} - 0.85968X_{16} + 0.85739X_{17},$$

where X is the definite meaning of the constant index.

If in the process of substitution of meanings, summary meaning Y – is more than discriminant index R, the result of the concret teenager will be evidence about the fact that his constitutionally psychology of personal type hysteroid capability were not touched upon the influence of CCNC and may be he lives in the favourable ecologically clean zone. If the summary meaning of Y is more than discriminant index R, so the constitutionally psychology type of the hysteroid bases of the personality are exposed to the real destructive influence from CCNC predominating in this very zone of habitat.

Being made, this very scale can be used for the express-diagnostic of the teenagers with hysteroid psychology type naturally in man-caused and antropogenic catastrophes, when we have to determine the degree of the destructive effect of the chemical negative factors. This scale can be used by the experts of different profiles – psychologists, clinic psychologists, psychophysicologists, sociologists, social workers, doctors.



The barchart 2

Vizualization of the results of the patopsychology variables, taking part in the differential diagnostic of the teenagers with hysteroid structure of the psychology type to the three-dimensional space, who live in the favourable resort zone and in the ecology-chemical habitat with the predomination of CCNC

In the barchart 2 we can see visual results division of teenagers from the compared sub-population. We see the high level of the differences of the probationers with the hysteroid psychology type and they live in different ecology regions. The



meaning of the Mahalanobis square equals 17 u.c., so in that case we can see high differences between middle indexes of compared groups. It may be 10% mistakes while making diagnostic of teenagers with hysteroid structure, who live in the resort region and who may connect with the toxic influence of drug components.

Therefore the representatives of the hysyeroid psychology type between the whole population of teenagers differ by the low tolerance to the unfavourable ecology-chemical habitat with the predomination of CCNC, when also increases signes of the organic brain damage, neuroendocrine toxic influence in the way of increasing feminization and it promotes the exhaustion of the neuroendocrine constituent with the signs of the athenization and high level of anxiety. Confirm negative psychology type drift in the constitutionally-continued space to the side of the diapazone of the boandary anomalous personality in the way of influencing of the negative ecology-chemical habitat factors. It leads to the anamolous personal and behaviour changes. Compared with general teenager populations, the probationers with the constitutionally hysteroid structure, become more vulnerable in the way of distractive ecology-chemical factors of the habitat.

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