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The Projective Study of The Impact of The Vertical Position of a Person on The Nosological Specificity of Psychosomatic Risk.

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ABSTRACT

The connection between the vertical position of the person in his social interaction and a specific nosology psychosomatic emerging risks; provides data communication such empirical studies (for example CVD) using a previously validated two copyright diagnostic techniques. As a result, the analysis concludes that the more likely a psychosomatic risk of cardiovascular disease in humans is formed, occupying in social interaction position from the top.

Keywords: psychosomatic risk, the vertical position of a man in his social interaction, the position of the top, subjective functionalization of the body.

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INTRODUCTION

According to the latest data of the World Health Organization, psychosomatic illnesses account for up to 85% of the total number of the world diseases. Because of this the research on prediction of psychosomatic risk and its nosological specificity becomes of a paramount importance.

The existing studies on this topic done by representatives of the natural and medical sciences (Berezin F.B., Karvasarsky B.D., Strukovskaya M.V., Topolyansky V.D., Isaev D.N., Oganov R.G., Olbinskaya L.I. Smulevich A.B. and others) focus on the study of the biochemical nature of psychosomatic risk as a separate phenomenon. The question on methods of diagnostics of the nosologic specificity of the psychosomatic risk of an individual stays beyond the scope of medical studies - which, of course, can be considered quite understandable.

On the contrary, almost all the authors of psychological studies describe the connection of a specifically human (emotional) stress with different kinds of psychosomatic diseases. Thus, according to D.A. Kamenetzky, emotional stress is an independent risk factor for all diseases with a psychosomatic nature (1). Y.N. Korystov considers emotional stress to be "a major cause of the cardiovascular lesions, neurosis, some stomach and intestinal diseases, it increases the possibility of the infection diseases and complicates their course" (2). A.I. Novikova sees the psycho-emotional stress as a key factor in the development of risk of the hypertension, coronary heart disease, peptic ulcer disease, diabetes mellitus type II (3). K.V. Sudakov believes that generalized distribution of the sympathetic and parasympathetic excitations is characteristic for the emotional stress. In some individuals they result in a violation of the cardiovascular system and in others - in ulceration of the gastrointestinal tract (4). Thus, psychosomatic risk is closely connected with the emotional stress - ie, stress caused by various emotional experiences and not by the fact of having the objectively stressful situation.

The data of the natural science studies indicate that there is a cause-and-effect relationship between the occurrence of psychosomatic diseases and the person's prolonged uncompensated stress. For example, Topolyansky V.D. and Strukovskaya M.V. note that if the process of the mental adaptation is not effective enough, then, under the emotional stress, the physiological components of emotions obtain a pathogenic role in the formation of psychosomatic disorders. Psychosomatic version of a personality reaction to stress or frustration is largely associated with the chronic exposure to frustration and stress (5). F.B. Berezin believes that we can speak about the emotional stress, when the emotion takes such an effect or a duration, under which a person is not sufficiently capable to restore the mental balance via solving the stressful situation (by influencing the situation, or by changing their attitude to it). The process of solving a stressful situation is the essence of the mental adaptation which means that there is a connection between the possibility of an emotional stress (both long and uncompensated) and the tendency of a person to experience certain emotions (6).

Thus, it is empirically established, that stress with an adequate resolution does not become a factor of psychosomatic diseases. Psychosomatic risk is formed by maintaining the pathogen level of hormones in the body and by forming a complex of biochemical reactions on this basis. Therefore, such risk arises only in a situation of a prolonged stress that is associated with the fact that an individual is not able to find adequate ways of interaction with the stressful situation. This, in turn, points to the obvious connection between the nosological specificity of psychosomatic risk and specific personality features of a person. Therefore, to identify the personality factors of the formation of psychosomatic risk, we highlight such personality characteristics that would allow:

- to substantiate their influence on the occurrence of a prolonged uncompensated stress;
- to describe the mechanisms of such influence;
- to describe the range of possible values of these characteristics;
- to study the influence of these values on the specifics of nosology of psychosomatic risk.

For example, R. Lazarus writes that stress can be considered as the result of a subjective assessment of the harmful stimulus, and that an effective coping strategy can help the person to maintain the psychosocial adaptation in the period of exposure (7). According to A.M. Prihozhan (8), a stimulus may become a stressor

due to the value attributed to him by the person (a cognitive interpretation). R.I. Tigranian highlights the subjectivity of assessment of stressors, the subjective importance of the stressor to the subject and the degree of surprise of the stressor as conditions that define the characteristics of stress (9). H.U. Soldatova describes the inability of a person to control the situation and the impossibility of the rational explanation for what is happening to them as the parameters affecting the intensity of psychological stress (7).

Earlier the authors have described the influence of the vertical position of a person (10) and their personality type (11, 12) on the specifics of the nosology of their psychosomatic risk. These studies have concluded that the vertical position of a person (top, bottom or equal) and the personality style within the author's model of personality are able to determine the specific nosology of the possible psychosomatic risk. The mechanisms of such determination have also been described.

As these studies had a hypothetical-deductive nature, the proposed study have attempted to empirically verify the results. Two diagnostic methods were used for this test:

- The questionnaire on studying the vertical position of a person in social interaction (VPSV) (13);
- Method of the subjective functionalization of the body (SFO) (14).

The questionnaire on studying the vertical position of a person in social interaction. The questionnaire includes 24 test situations related to three different areas of human interaction: interaction with close people, business interaction and interaction with strangers. Areas were identified by the following criteria:

- distance, that is accepted in the relevant area of interaction (which corresponds to various levels of importance for a person of each of the respective types of interaction);
- specifics of motivation that can be actualized in each of these areas.

All test situations were divided into two groups: in one case, a subject was given the options of their external reaction to the impact, in the other - a subject was given the options of their internal reaction. Brief description of each test situation was accompanied by three variants of a person's reaction to the proposed external action: one answer was a reflection of the equal position, the second was a reflection of the bottom position, the third was a reflection of the top position. The subject was asked to choose the most typical option for him.

The principal essence of each of the three vertical positions was formulated as follows:

- a person with the "equal" position considers the significance of their opinion and opinion of others, their desires and desires of others, their rights and the rights of others to be equal, and, therefore, they do not allow themselves to assess, to judge, to decide for another person, to expect something from other person, etc.;
- a person with the "top" position prioritizes their own opinions and desires, their significance to others, the importance of their expectations and assessments; they consider their rights prioritized, they assess and judge others, etc.;
- a person with the "bottom" position considers their own opinion and desire to be of lesser importance in comparison with opinions and desires of another person; such person assesses their capabilities and rights as insignificant in comparison with the rights and capabilities of another person, etc.

The intensity of each position (both the total index and the index for an each individual sphere of interaction) was calculated by the test results.

METHODS

The method of the subjective functionalization of an organism. At its core, SFO is a projective technique and it assumes a complete freedom of a test subject in relating the functioning of different physiological systems of the organism with a fundamentally different types of life tasks.

During the study a test subject is asked to decide which parts of their body are responsible for solving various types life tasks:

- providing of their livelihood with the necessary resources;
- maintaining of the balance in their inner world;
- use of the world in their own interests;
- protection of themselves from the outside world (if necessary);
- transformation of the world in their own interests (if necessary);
- integration of all the above activities and monitoring of their implementation.

Testing is carried out via a computer: a test subject correlates different parts of their body with each of the six above-mentioned functions. The body model is then constructed out of all the selected body parts by the results of the testing. The inadequacy of the aspect ratio of different parts of the body, the unevenness of their use, the inadequacy of their perception by a test subject become apparent. At the same time, after selecting the next part of the body, the test subject is asked to select options for its presentation in the final model - three options for each of the studied parameters:

- compliance of the selected parts of the body with the physiological systems that are objectively necessary to solve the task;
- representation of the objectively necessary physiological systems in the selected areas of the body;
- the selected size of an image of the designated parts of the body;
- the selected style (realistic, schematic, symbolic) of an image of the designated parts of the body;
- completeness of the final model, ie the presence or absence of all physiological systems actually existing in the body;
- the adequacy of location of all the selected parts of the body (internal secure placement of all the internal organs that form the physiological systems);
- the number of tasks solved by each of the selected body parts.

The study procedure. The study was conducted on a sample of 400 test subjects of different sex, age, educational level and social status. In addition to the demographic information, we took into account the presence of the already diagnosed diseases in several groups:

- the cardiovascular diseases (cardiosclerosis, hypertension, stenocardia, and others);
- the respiratory diseases (asthma, chronic bronchitis, chronic rhinitis, genyantritis, and others);
- diseases of the gastrointestinal tract (gastritis, pancreatitis, cholecystitis, peptic ulcer disease, and others);
- diseases of the musculoskeletal system (arthritis, arthrosis, osteochondrosis, scoliosis, etc.);
- the nervous system disorders (neuralgia, headaches, migraine, vegetovascular dystonia, etc.);
- the skin diseases (psoriasis, neurodermatitis, eczema, etc.);
- the reproductive system diseases (impotence, prostatitis, dysmenorrhea, myoma, infertility, and others.);
- the endocrine diseases (hypothyroidism, hyperthyroidism, diabetes, adrenal gland tumor, etc.);
- diseases of the excretory system (pyelonephritis, glomerulonephritis, cystitis, urolithiasis, etc.).

Each subject was tested via both diagnostic procedures - VPSV and SFD. The results were compared with each other.

Two hypotheses were tested during the study:

- within the SFO-study the vertical position of a person is presented by a parameter of a correlative size of the head and arms with an average size of the remaining parts of the body;
- psychosomatic risk of the cardiovascular diseases is more likely to form in the subjects demonstrating the top position in social interaction.

The formulation of the first hypothesis was based on the interpretation of a parameter of the image size, traditional for projective techniques, correlating with a parameter of significance of the imaged object for a test subject (15). Choosing the head and arms as the main objects of the analysis, in turn, was based on both the tradition of a projective interpretation (16) and on the objective functionalization of these body parts:

- the head is seen in the context of the analysis, decision-making and synthesis functions;
- in addition, the head is the main place of the primary sense organs (especially eyes and ears);
- hands are seen as the main effectors of the practical and communicative activity of a person.

Calculation of the parameter of the correlative size (head-arms / average image size) in this context is connected to the fact that the test subjects were asked to identify the size of an each selected part of their body: average, large (150% of the average) or small (75% of the average) . After that, the average size of the image was defined basing on the external parts of the body (hips, head, chest, stomach, skin, face, legs, shoulders, spine, arms, back, torso, buttocks). The size that was prevailed in tests was chosen as the average (large, average or small). In turn, the average size of an image was compared to the size selected by the test subject for their heads and arms (regardless of their subjective function).

The second hypothesis was determined by the following statements:

- different emotions provide different biochemical backgrounds because of the differences of their adaptive and behavioral specificity (3, 4);
- various configurations of biochemical reactions, that are typical for various emotions, lead to different changes in the body;
- the inadequate prolongation and / or the priority of experiencing various emotions are directly connected to the personality type of the person (7, 8, 9, 10).

RESULTS

Matching the test results via the methods of the EPSP and the SFO gave the following results (Table 1):

Table 1. The vertical position of a test subject in relation to the sizes of the studied body parts.

The chosen size of the body part	The number of test subjects with the TOP position that chose this image size (in %)	The number of test subjects with the BOTTOM position that chose this image size (in %)	The number of test subjects with the EQUAL position that chose this image size (in %)
The size of the head is BIGGER than the average image size	66,18	15,23	18,59
The size of the head is SMALLER than the average image size	19,54	74,15	6,31
The size of the head is EQUAL to the average image size	14,28	15,62	70,1
The size of the arms is BIGGER than the average image size	69,24	18,10	12,66
The size of the arms is SMALLER than the average image size	19,54	74,15	6,31
The size of the arms is EQUAL to the average image size	11,22	7,75	81,03

Thus, the number of test subjects that occupy the top position while choosing the size of the analyzed parts of the body bigger than the average image size for the presentation of the final model is much larger than the number of subjects, choosing a different vertical position and choosing the same value correlative

size. Therefore, the data undoubtedly confirm the first hypothesis of this study: the vertical position is actually represented by the parameter of a correlative size within the SFO method (head-arms / average image size).

The data of the SFO method, indicating the presence of the subject's risk of the cardiovascular disease and the data of the VPSV method, demonstrating the expressions of the top position in a social interaction, were matched to test the second hypothesis.

The results of the SFO-test recorded the risk of cardiovascular disease in 187 subjects out of 400 (46.75%). 45 (24.06%) of these 187 subjects has been already diagnosed with the cardiovascular disease at the time of testing. Therefore, the matched data is presented separately for subjects with existing risk of the cardiovascular diseases and for subjects that are already suffering from them.

Table 2. The connection between the risk of the cardiovascular diseases and the TOP position in a social interaction.

Part of the sample	Body part	The size is BIGGER than the average image size (TOP position)	The size is SMALLER than the average image size (BOTTOM position)	The size is EQUAL to the average image size (EQUAL position)
The number of test subjects (in %) with a risk of the CVD that chose this image size	Head	67,23	14,03	18,74
	Arms	72,72	17,63	9,65
The number of test subjects (in %) suffering from the CVD that chose this image size	Head	78,13	7,01	14,86
	Arms	75,60	15,48	8,92

Table 2 clearly shows that the probability of formation of the cardiovascular disease is significantly higher in test subjects with the top position in a social interaction - from both the predictive and the phenomenological points of view. Thus, our second hypothesis can also be considered to be empirically confirmed.

CONCLUSION

- the SFO projective diagnostic method can be considered valid for the study of the vertical position of a person in a social interaction;
- within the SFO-study, the marker of the vertical position of a person is a correlative size, defined as the comparison of the image size of the head and arms with the average image size;
- psychosomatic risk of the cardiovascular diseases is more likely formed in people with a top social interaction position.

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REFERENCES

- [1] Kamenetsky D.A. Neurosology and psychotherapy. - M.: Helios ARV, 2001
- [2] Scherbatyh Y.V. "Psychology of stress and correction methods" Piter 2008, pp 89
- [3] Novikova A.I., Sidorov P.I., Soloviev A.G. Psychosomatic medicine. - MEDpress-inform, 2006
- [4] Sudakov K.V. Emotional stress and hypertension. Mc-Graw-Hill, New York,1976
- [5] Topolyansky V.D. Strukovskaya M.V., Psychosomatic disorders. - M.,
- [6] Berezin F.B. Psychological mechanisms of the psychosomatic disorders / F.B. Berezin, E.V. Beznosyuk, E.D. Sokolova // Russian medical journal. 1998. - #2. - pp. 43-49
- [7] Topchyi M.V., Churilova T.M. Stress as an object of the scientific reflection / .- Stavropol: NOU VPO SKSI, 2009
- [8] Prihozhan A.M. The psychological nature and age dynamics of anxiety. - M., 1996
- [9] 8. Tigranian R. Stress and its significance to the organism. From the molecule to the organism. - M.: Science, 1988

- [10] Timoshenko G.V., Efremova G.I., Leonenko E.A., Bochkovskaya I.A. The vertical position of a person in a social interaction as a factor of psychosomatic risk. - Bulletin of the MSOU. "Psychological sciences" series. - 20143. - #4. pp 39-47
- [11] Timoshenko G.V., Leonenko E.A., Bochkovskaya I.A., Efremova G.I. Emotional experiences of a person as the cause of psychosomatic risk. Asian social sciences. - 2015. - Vol. 11, # 2. - pp. 253-270
- [12] Timoshenko G.V., Leonenko E.A. The metaphorical psychotherapy. - M.: Psychotherapy, 2011
- [13] Timoshenko G.V. The metaphorical model of a personality as a way of studying the personality position of a person in a social interaction: the dissertation of the candidate of psych. sciences: 19.00.05/Timoshenko G.V. – Moscow, 2013. – pp 176 : il RGB OD, 61 14-19/32
- [14] Timoshenko G.V., Leonenko E.A., Bochkovskaya I.A., Efremova G.I. Projective approach to the study of the nosological differentiation of psychosomatic risk. - International conference "Science and Humanity", London, on 28-29 September 2014. - Berforts Information Press Ltd, United Kingdom.. - 109 p. - pp. 81-87
- [15] Mahover K. Projective image of a person: (method of the clinical diagnostic of a person)/K. Mahover: Smysl, 1996
- [16] Bellak L., Ebt L. Projective psychology. Trans. from Eng. - 2nd ed. - M. Psychotherapy, 2010
- [17] Topolyansky V.D., Strukovskaya M.V. Psychosomatic disorders. - M., Medicine, 1986