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**ANALYSIS OF ECOPSYCHOLOGICAL TYPES OF  
INTERACTIONS IN MEDICAL INSTITUTION ENVIRONMENT**

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***Abstract***

The study is based on the intersection of ecopsychological and subjective approaches and devoted to the research of psychological conditions for interaction of medical personnel in medical institution environment. For this purpose, the frequency distribution of representations of ecopsychological interactions of medical staff in medical institution environment of is revealed empirically: subject-object, object-subject, subject-subject, including subject-isolated, subject-joint, subject-generative. The subject-object type appears to be a statistically significant predominant type of interaction between the physician and the patient. In the group of nurses the most common type is the object-subject type of interaction. It is shown that the presence in the structure of medical personnel's ecological consciousness of such subject qualities as autonomy, voluntary regulation, desire for development, ability to resolve contradictions is a condition for realization of interactions. Factor analysis of the connection between individual subject qualities and components of ecological consciousness is done. Comparison of the selected factors structures in the groups of medical staff showed a different degree of inclusion of subject characteristics into the structure of ecological consciousness components. This structure forms a more integral construct in doctors in comparison with nurses, which makes doctors' interaction with the environment more consistent and sustainable.

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**Keywords:** Ecological consciousness, subjectness, medical institution environment, ecopsychological interactions.



## 1. Introduction

Nowadays special attention is paid to solution of the issues of ecological development and ecological safety in all fields of social life. Scientific research in the area of psychology, which is focused on studying personal qualities in the context of people's interaction with environment, is becoming more common. Due to the fact that ecological problems have gone beyond the analysis of interaction with the nature only and include different aspects of interaction with social environment ecopsychological research allows solving many issues and is extremely important (Panov & Khisambeyev, 2011). This study has been done within ecopsychological approach to mental development and represents search for solution of the problem of medical personnel's interaction with medical institution environment with the use of analysis of connection between their subjective qualities and ecological consciousness.

## 2. Problem Statement

«Environmental consciousness», as a term, appeared originally to describe the attitude of a person to the world of nature and now it is used more widely. Environmental consciousness also includes the attitude to ensuring public health (Deryabo, 2000). The issue of ensuring public health is in the field of medicine. It is an important social problem. More than that, there are psychological issues of organizing the medical institution environment (Andrade et al., 2012, Arneill, & Devlin, 2002, Winkel & Holahan, 1985 et al.). A part of medical staff member's life, as well as professional and personal development, take place in the medical institution environment. Medical institution environment is organized to deliver specialized healthcare to patients who are also its subjects. That is why from the psychological point of view interactions with medical institution environment appear to be communicative and technological interactions between the subjects of medical institution environment: patients, doctors, administration, nurses and so on. V.I. Panov developed ecopsychological typology of interaction, which is used for the analysis of interactions with different types of environment (Panov & Plaksina, 2017 et al.). This classification includes object-object, subject-object, object-subject, subject-subject types including subject-isolated, subject-joint and subject-generative types of interactions. Doctors, nurses and patients, as subjects, are included in the system of subject-environment interaction, the type of which is defined by ability to take active (subject) or passive-reactive (object) position towards medical institution environment.

According to the basic provisions of the ecopsychological approach, the subjectness is regarded as a new mental formation, which appears and develops via individual's interaction with the environment and/or the subjects representing it. Thus, the medical staff member's subjectness develops while interacting with medical institution environment. Solution of a great range of professional issues is demanded from people doing different types of activities. Developing through interactions with the environment professional's subjectness acquires its specific nature, which is based on the most important subject's qualities for the given field of activity.

According to the current standards of World Federation for Medical Education, medical staff members are supposed not only to possess special professional skills but also to be able to define the goals of professional and personal development independently. They have to make proper decisions in ordinary and extraordinary situations and be responsible for them, to take moral obligations as applied to the nature, society and people, to be ready to analyze the results of their activities in order to prevent medical errors,

to be able to make important managerial decisions and so on (Global Standards for Quality Improvement, 2015).

Possession of the above competences means the subject's position towards oneself, one's own activities and other people. The subjectness integrates individual's professional abilities and provides conditions to realize the requirements of the profession on a qualitatively high level.

Thereby, medical staff members are subjects of medical institution environment and their personal qualities are formed while interacting with it. From this point of view, a medical staff member is supposed to possess such personal (subject) qualities that allow taking an active role position in interactions with medical institution environment, in other words, being a subject of interactions. On the other hand, subject qualities of an individual, which demonstrate the ability to be the subject of interaction with environment, are determined by the individual's innate ecological consciousness, as it mediates the individual's attitude to various components of the environment and interaction with it and other subjects of medical institution environment. Different concepts realizing the principle of subjectness were analyzed in order to determine personal qualities of medical staff (Abulkhanova, 2014, Morosanova, 2017, Sergienko, 2017, Harre, 1979, etc.). In view of the above stated, as a prerequisite of interaction formation in medical institution environment, it is relevant to consider as subjective the following qualities of medical staff: autonomy, voluntary regulation, commitment to development, capability for conflict resolution.

### **3. Research Questions**

The descriptions of difficult situations of communication between medical personnel and patients were collected to distinguish different types of ecopsychological interactions between health professionals in medical institution environment.

Further research included the analysis of how subject qualities of medical staff are integrated in the structure of ecological consciousness, which mediates interaction with medical institution environment.

### **4. Purpose of the Study**

The purpose of the study is to analyze the system of ecopsychological interactions between medical staff members in medical institution environment and consider the conditions of these interactions.

### **5. Research Methods**

#### **5.1. Participants and procedure**

The empirical basis of the study includes groups of doctors (40 people) and nurses (125 people) of Belgorod city clinical hospital No.1.

#### **5.2. Measurement and procedure**

The analysis of the interview texts was carried out with the help of categories of ecopsychological theory of interaction developed by V.I. Panov. It allowed singling out different variants of subject-environment interactions in medical institution environment. The importance of differences was defined by  $\varphi^*$  criterion – Fisher transformation.

The test bank consisted of methods, which allow us to empirically operationalize theoretically based list of individual subject qualities: Ryff Scales of Psychological Well-being estimating the level of autonomy, voluntary regulation, commitment to development with the help of factors of autonomy, environment management, personal growth and life goals. The integrated parameter of the questionnaire "Level of correlation of value and accessibility in different life spheres" made by E.B. Fantalova describes the presence of inside conflict as an indicator of capability for conflict resolution. In order to study self-consciousness "Test-questionnaire of self-relationship" by V.V. Stolin, S.R. Pantileev was used, "The questionnaire of environmental consciousness" (Panov, Mdivani, Kodess, Lidskaya, Khisambeev) was applied to consider environmental consciousness. The factor analysis was carried out by method of principal components analysis by rotation method Varimax (with Kaiser normalization). There were 4 factors distinguished in each group (with factor pressure higher 0.400).

## 6. Findings

According to the results obtained, subject-object type of interaction is the most common type of interaction between a doctor and a patient (27.9%) that significantly exceeds the number of subject-object interactions (10.3%) in the group of nurses ( $\varphi=1.907$ ;  $p<0,05$ ). The frequency of occurrence of subject-object interactions among doctors is statistically higher than the occurrence of more ecological subject-joint (9.3%;  $\varphi=2,287$ ;  $p<0.01$ ) and subject-generative types (7.0%;  $\varphi=2,682$ ;  $p<0.01$ ). Object-subject type of interaction is on the second place (23.3%) among doctors. It shows conflict model of interaction based on suppression of subjectness of medical staff members. The above type also exceeds the frequency of occurrence of subject-joint ( $\varphi=1.792$ ;  $p<0.05$ ) and subject-generative types ( $\varphi=2.188$ ;  $p<0.05$ ). In the group of nurses object-subject type of interaction is the most frequent (27.6%) exceeding subject-object type (10.3%;  $\varphi=1.718$ ;  $p<0.05$ ) and subject-isolated type (10.3%;  $\varphi=1.718$ ;  $p<0.05$ ). In the group of doctors subject-isolated type of interaction is the following one considering its frequency of occurrence (18.6%).

The analysis of interaction system in medical institution environment leads to the understanding of the fact that a doctor (towards a patient) implicitly has a high level of subjectivness (which is confirmed by predominance of subject-object type of interaction). It is defined by the situation itself and the environment, in which this interaction takes place. It depends on the doctor what type of interaction is established in each particular case. A huge number of people feel uncomfortable while seeking medical help, which is connected with interaction with medical institution personnel. Getting into the medical institution environment, where a patient is a target exposure, the patient finds himself trapped in the system where nothing depends on him. The patient is not treated as an individual, but as a carrier of disease, an object of medical manipulations. This increases the anxiety and fear, which have already arisen along with the thoughts about the disease, and generates unwillingness to seek help.

If a health professional interacts applying subject-subject type, he is regardful, attentive to the patient and makes him feel that he treats him like a subject. Taking a subject position the patient becomes a source of activity himself and feels responsible for his health condition (subject-joint and subject-generative types). He is able to trust doctors consciously in the issues of treatment without losing his subjectness and doing everything that depends on him to combat the disease. Subject-object type of interaction between a health professional and a patient programs for recovery whereas subject-joint and subject-generative types set the

patient to recovery, which increases effectiveness, especially in those cases when not only treatment is necessary but also aftercare.

However, the patient's subject position is not always the basis for constructive communication with medical staff members. A large number of statements relating to subject-subject type indicate that the interaction is often based on the patient's suppression of the health professional's subjectness. Such interaction is conflicting and ultimative in its nature. A doctor or nurse perceives a patient as a demanding subject striving to subordinate them to his will. They cannot interrupt a patient because health professional's interaction is regulated by job duties. He performs all duties according to medical standards. However, this formal approach reduces the motivation to find new ways and means of delivery of care, ambition for self-improvement and development of professional skills.

The results of the factor analysis showed the structure of connection between health professional's subject qualities and the parameters of ecological interaction with the environment.

**Table 01.** Structure of connection between doctors' subject qualities and their ecological consciousness

<b>Factors</b>	<b>Personal development in unity with the environment ( 20.81%)</b>	<b>Ecological responsibility (16.35%)</b>	<b>Decrease in autonomy and self-esteem in threatening environment (12.43%)</b>	<b>Attitude towards the man as the highest value (10.57%)</b>
The questionnaire of environmental consciousness	Unity with the nature (0.751) Aesthetic experiences (0.736) Physical feelings (0.684) Positive relations with associates (0.811)	Ecological responsibility (0.970) Close human environment (0.875), Regional level (0.851), State level (0.650), International level (0.676) Limit on luxury (0.640) Positive human impact on the nature (0.417), Activity (0.481)	Negative impact of the nature on human (0.677) Negative human impact on the nature (0.488)	Preference for natural environment (-0.565), Preference for social environment (0.497)
Scale of Psychological Well-being	Environment Management (0,616) Personal growth (0,812) Life goals (0,748)		Autonomy (-0.784),	
Test-questionnaire of self-relationship	Self-acceptance (0.623) Man as an open system (0.859), Self-interest (0.497)		Self- esteem (-0.523)	Global self-attitude. (0.720) Autosympathy (0.722) Waiting for positive attitude of others (0.811)
Level of correlation of value and accessibility				Internal conflict (0.633)

The following factors were identified in the group of **doctors**:

Within the **1<sup>st</sup> factor «Personal development in unity with the environment»** (dispersion 20.81%) the highest factor loading is in such variables as: "Unity with the nature" (0.751), "Unity with the nature – aesthetic experiences"(0.736), "Unity with the nature – physical feelings"(0.684), "Positive relations with associates" (0.811), " Environment Management" (0.616), "Personal growth" (0.812), "Life goals" (0.748), "Self-acceptance" (0.623), "Man as an open system" (0.859), "Self-interest" (0.497). Doctors are open to new experience and feelings when they feel like being a part of the nature and accept themselves as such. They strive for development, achievement of their life goals and building up positive relations. Unity with the environment allows understanding it and being competent in managing it.

**The 2nd factor "Ecological responsibility"** (dispersion 16.35%) is represented by variables that characterize ecological responsibility in relation to the environment at different levels and the corresponding impact on the environment. The following indexes have the highest factor loading in this factor: "Ecological responsibility" (0.970), "Close human environment" (0.875), "Regional level" (0.851), "State level" (0.650), "International level" (0.676), "Limit on luxury" (0.640), "Positive human impact on the nature" (0.417), "Unity with the nature – Activity" (0.481).

Within **the 3<sup>rd</sup> factor "Decrease in autonomy and self-esteem in threatening environment"** (dispersion 12.43%), the following indexes have the highest factor loading: "Negative impact of the nature on human" (0.677), "Negative human impact on the nature" (0.488), "Autonomy" (-0.784), "Self- esteem" (-0.523). The analysis of this factor's structural components shows that the environment is perceived to be less threatening for doctors with high autonomy indicators, because the "Autonomy" scale has the highest factor load. Doctors with low self-esteem and dependent behavior perceive the environment as threatening one and respond to its influence by their negative impact.

Within **the 4<sup>th</sup> factor "Attitude towards the man as the highest value"** (dispersion 10.57%), the following components have the highest factor load: "Preference for natural environment" (-0.565), "Preference for social environment" (0.497), "Global self-attitude" (0.720), "Autosympathy" (0.722), "Waiting for positive attitude of others" (0.811), "Internal conflict" (0.633). Doctors with high index of self- attitude prefer social environment recognizing the supreme value of the man compared to natural environment.

**Table 02.** Structure of connection between nurses' subject qualities and their ecological consciousness

<b>Factors</b>	<b>Independence and attitude to oneself (19.9%)</b>	<b>Interaction with environment (13.81%)</b>	<b>Ecological responsibility (10.09%)</b>	<b>Personal growth in social environment (8.09%)</b>
The questionnaire of environmental consciousness		Positive impact of the nature on man (0.636) Negative impact of the nature on man (0.424) Positive human impact on the nature (0.691)	Ecological responsibility (0.880) Personal level (0.636) Close human environment (0.764) Regional level (0.637) State level (0.724)	Preference for men-made environment (-0.648), Preference for social environment (0.678)

		Negative human impact on the nature (0.521) Unity with the nature "(0.836) Aesthetic experiences (0.750) Physical feelings (0.723) Activity (0.532).	International level (0.538) Limit on luxury (0.401)	
Scale of Psychological Well-being	Positive relations with associates (0.626) Autonomy (0.584) Environment Management (0.659) Life goals (0.623)			Personal growth (0,570) Man as open system (0.504)
Test-questionnaire of self-relationship	Self-esteem (0.733) Self-relation (0.790) Autosympathy (0.597) Waiting for positive attitude of others (0.467) Self-interest (0.553)			

The following factors were identified in relation to **nurses**:

**Factor 1 "Independence and attitude to oneself"** (dispersion 19.9%) includes such variables as: "Positive relations with associates" (0.626), "Autonomy" (0.584), "Environment Management" (0.659), "Life goals" (0.723), "Self-esteem" (0.733), "Self-relation" (0,790), "Autosympathy" (0.597), "Waiting for positive attitude of others" (0.467), "Self-interest"(0.553). With high rates of positive attitude to oneself, self-esteem and self-acceptance nurses feel more independent and competent in managing the environment.

**Factor 2 "Interaction with environment"** (dispersion 13.81%) includes such variables as: "Positive impact of the nature on man" (0.636), "Negative impact of the nature on man" (0.424), "Positive human impact on the nature" (0.691), "Negative human impact on the nature" (0.521), "Unity with the nature "(0.836), "Unity with the nature - aesthetic experiences" (0.750), "Unity with the nature – physical feelings" (0.723), "Unity with the nature – activity" (0.532).

The structure of the factor reflecting the nurses' interaction and unity with the environment differs from the matrix of doctors. The difference is that nurses' indicators of interaction with the environment are not related to such personal dispositions as purposefulness, commitment to development, competence in managing the environment.

**Factor 3 "Ecological responsibility"** (dispersion 10.09%) is represented by the following variables: "Ecological responsibility" (0.880), "Personal level" (0.636), "Close human environment" (0.764), "Regional level "(0.637)," State level" (0.724)," International level "(0.538)," Limit on luxury "(0.401).

**Factor 4 "Personal growth in social environment"** (dispersion 8.09%) characterizes the preference of the environment that promotes personal growth. Within this factor the following indicators

have the highest factor load: "Preference for men-made environment" (-0.648), "Preference for social environment" (0.678), "Personal growth" (0.570), "Man as open system" (0.504). For nurses the social environment provides great opportunities for personal growth in comparison with the men-made environment. They are open to new experience of interaction with the social environment.

The comparison of the results of factor analysis showed that a bigger number of correlations between the characteristics of subjectness and the components of environmental consciousness are observed in the group of doctors. These parameters are brought together into the entire system, the change of individual components of which provokes the change in other components. In the group of nurses the parameters of environmental consciousness form single significant relationships with other personal dispositions. This isolation of ecological consciousness turns the attitude towards the environment into an unstable construct, which can change under the impact of external circumstances. It means that any environment change entails a change in the attitude to the environment and the nature of the interaction with it regardless of internal variables.

## 7. Conclusion

The results obtained make it possible to conclude that in the context of the ecopsychological approach medical institution environment is a system of subject-environment interactions, the subjects of which are doctors and nurses. The type of interaction in the system "medical staff member – medical institution environment" is determined by:

1. the ability of medical personnel to take an active (subject) or passive-reactive (object) position towards medical institution environment, i.e. their subject qualities;
2. peculiarities of ecological consciousness as it defines medical staff member's subject/object position in relation to medical institution environment as an object or a subject of interaction with it.

Therefore, subject personal qualities in the structure of ecological consciousness act as a condition of subject-environment interaction type. Interactions are considered to be ecological if they contribute to preservation of physical and psychological health of patients as subjects of natural and social environment.

Medical profession is contradictory in the sense that the patient is also a natural object whose life and health are to be preserved with the help of medical technologies applied to him. At the same time, the result of therapeutic intervention depends much on the patient as a subject of his recovery. It is essential that the idea of health preservation is to be the ground of doctor's or nurse's attitude to the patient as an object of therapeutic intervention or a subject that needs medical care.

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