

IV. PEDAGOGICAL, PSYCHOLOGICAL AND MEDICAL SCIENCES

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COMMUNICATION OF THE LYMBIC SYSTEM AND THE VOMERONASAL ORGAN IN HUMAN BEHAVIORAL RESPONSES

Introduction. Throughout his life, man feels the manifestation of various emotions and instincts: happiness, fear, anger, sadness, disappointment or inspiration. All these are the chemical reactions that the limbic system manages. It consists of four basic structures: the hypothalamus, tonsils, thalamus and hippocampus. The hypothalamus is an important systemic structure, because it is responsible for feeling hunger, thirst, satisfying sexual behavior, manifestation of anger and a sense of pain. But there is a direct anatomical structure that interconnects the sexual behavior of a person guided by the limbic system, with pheromones captured by the vomeronasal organ (VNO) and transmitted over the neuron fibers of the zero pair of cranial nerves of the brain. Thus, the structures of the limbic system and the VNO provide human adaptation to the surrounding conditions and norms of social behavior.

Review of recent publications. Recent years show that such scholars as R.I. Zbar, U. Dannowski, A. Stuhmann, V. Beutelmann et al. discovered the interconnection of the limbic system and the vomeronasal organ in stressful adaptations of the organism and made many interesting conclusions, though the possibilities of the influence on this interconnection for the human brain disorders treatment has not been fully studied yet.

Objectives of the paper. The research aim was to analyze scientific publications and summarize an interconnection of the limbic system and the vomeronasal, which plays important role in the formation of human behavior and on its bases to define the direction of the prospective study.

Results of the research. According to recent publications, it can be stated that scientists confirm the direct connection of limbic system with the vomeronasal organ. The pattern of pheromones transit is from the nasal cavity, to the vomeronasal organ, from where the primary information through terminal nerve (or zero) passes to the ancillary olfactory bulb, that is, to the structures of the limbic system. Due to the uniqueness of its structure, the limbic system processes information, generates memory of it and, as a result, gives a certain nervous impulse to the receptor, which determines a certain behavior of the creatures. It is assumed that this feature is the basis of the difference in the implementation of spatial and social skills. In the experiments of the American psychologist Andriana Mendrek^[6], it was investigated that certain parts of the brain, especially the limbic system, of both men and women produce different reactions to the negative situations depending on the pheromones they feel. It is interesting that a person is more easily adapted to another person, if the aroma of the latter attracts him. This was proved by the German scientists who

conducted the experiment on mice. The females favored the males, which were previously treated with odorous substances.

Conclusion. In recent past, scientists have been able to make a big step in the development of knowledge on limbic system functioning. The lateral system, which is the object of many scientific researches, causes the connection of various parts of the brain, but due to the morphological differences of the limbic system in men and women, they perceive situations and stress factors differently and, as a result, react differently to them. The structure and functions of the limbic system and the vomeronasal organ have not been studied yet. Conducting new studies in this area will make it possible to determine their real place among other parts of the brain and will allow our practitioners to treat the diseases of the central nervous system with new methods.

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