

Formation of New Medical Terms

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Abstract: Changes in medicine lead to modifications in the linguistic picture of the world, the functioning of linguistic structures. This is evidenced by the emergence of neologisms, through the study of which one can see both the development of medicine itself and the transformation of the linguistic picture of the world of medicine. The system of the language of medicine includes a large number of terms related not only to the object and subject of medicine itself - a person and his diseases, but also to methods of diagnosis and treatment. A medical term, being a carrier of special medical information necessary for optimizing the cognitive activity of physicians, denotes phenomena, processes communicatively and cognitively significant in the medical space, the dynamics of the development of medicine.

Keywords: language of medicine, medical term, human body, diseases, medicine, function of linguistics.



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Introduction

The development of medicine is determined by the need to ensure the humanitarian well-being and national security of the country, to protect the health and ecology of the human environment and its language. Among the reasons for the need to develop medicine are:

- ✓ increasing the risk of epidemics (which is currently confirmed by COVID-19);
- ✓ increased incidence, recurring and new infections;
- ✓ change in the spectrum of diseases;
- ✓ changing demographic situation;
- ✓ health protection and disease prevention.

An indicator of the development of society is the emergence of new diseases, the creation of new drugs for their treatment, new technologies, medical devices and medicines, which is expressed in the need for new specialties and specialists, new reflections of all these innovations, on the one hand, by medical personnel, on the other - by patients, as well as by scientists. The same process affects the language of medicine, which always reacts by inventing new medical nominations (scientific and colloquial), i.e. terms that reflect scientific innovations at the lexical and syntactic levels. New treatment options (organ transplantation, cryomedicine, telemedicine, gene

technologies, etc.) make it possible to treat at a higher level. And the combination of scientific achievements and the correct use, understanding of terminology is the main condition in treatment. And since language exists only inextricably linked with thinking, the principle of formation of new terms also affects language "as a system of signs serving to store, process and transmit information". Changes in medicine lead to modifications in the linguistic picture of the world, the functioning of linguistic structures. This is evidenced by the emergence of neologisms, through the study of which one can see both the development of medicine itself and the transformation of the linguistic picture of the world of medicine. Analysis of terms in accordance with the cognitive-discursive paradigm allows us to talk about the role of the latter as a means of storing and transmitting knowledge, as well as communication in a certain professional field.

The system of the language of medicine includes a large number of terms related not only to the object and subject of medicine itself - a person and his diseases, but also to the methods of diagnosis and treatment. A medical term, being a carrier of special medical information necessary for optimization of cognitive activity of doctors, denotes phenomena, processes communicatively and cognitively significant in the medical space, the dynamics of development of medicine. In the process of this development, a word can receive a special meaning (nanotechnology, nanobacteria, nanomaterial, etc.), be determinologized (injection, epidemic, infection, etc.), return from the past: from archaisms to historicisms, and vice versa (zemstvo doctor, patient zero, etc.). Often, already known colloquial words are used in terminological metaphorical nominations - tower skull, chalk tongue, granary disease, etc. This is due to the fact that a medical term is "an element of a system that arises as a result of the progress of medicine; in its development, it acts as evidence of the history of human existence". A term, as a tool for cognition, enriches scientific facts, multiplies new knowledge and transmits it horizontally (to contemporaries) and vertically (to subsequent generations). This is how language implements intra- and intergenerational cognitive connections.

Main trends in the development of medicine today

The current century is already called the century of nanotechnology, which has replaced computers and telecommunications. It is characterized by the rapid development of genetic engineering, bio-cognitive and digital technologies, which affects the further development of medicine. An example is the emergence of tissue and immunobiological technologies in medicine, targeted drug delivery, including online, which can soon revolutionize the ideas about the methods, methodology and methods of treating dangerous diseases, primarily oncological and infectious diseases. The development of molecular medicine, genomic, metabolomic, proteomic, information technologies, etc. allows us to analyze large volumes of data. In addition, they create the basis for new methods of treating diseases; detecting molecular markers of diseases. Changes in medicine indicate the introduction of new rehabilitation systems (cyber systems, neurocomputer interfaces), modifying the entire medical system, making it personalized, effective and highly specific.

The next trend in the development of medicine can be called the integration of related sciences, the development of interdisciplinary research and translational medicine. More and more often there are such concepts as digitalization of medicine, digital concentration camp, biohacking, etc. There are already digital applications in phones that inform a person about pulse, pressure, heart rate, etc. The development of science, human thought, discoveries, inventions are the reasons for the emergence of new terms.

Reasons and meanings of new medical terms

Medicine of our time is becoming more and more technological. It uses artificial medical monitoring technologies, telemedicine, phone applications, digital methods of storing medical history, which have become our everyday reality. New terms blockchain, artificial intelligence in medicine, clothing with a medical monitoring function, pulse oximeter, telepsychiatry,

xenotransplantation, pain-relieving gadgets, digital drugs, aptamers, gadgets that create virtual reality for the disabled are already becoming understandable to doctors and patients. New technologies in the field of medicine include the creation of the artificial eye Argus II, named after the Greek mythological hero - the All-Seeing, many-eyed giant. There is another name for it - Second Sight Medical Product; new names, or rather abbreviations, have appeared for pacemakers - EKS, IVR - pacemaker. They have codes according to their affiliation with treatment, for example, AU1-A - indicates the stimulated chamber of the heart - the atrium, -V - the ventricles, -D - for the treatment of both. The nomination of these concepts is associated with what a person imagined, how he understood and perceived, therefore, mental processes of creation play a large role in the emergence and functioning of the term: idea, sensation, perception.

The use of robots that perform laser, radiation, vacuum, electro- and thermotherapy, etc. indicates the technological nature of medicine. They can be divided into surgical robots, assistant robots, and prosthetic robots. Here are some nominations.

1. Assistant robot - it is used to perform biopsy, endoscopy, laser bone dissection, and insert a transpedicular screw.
2. Diagnostic robot - High articulated intelligent Leg, used to perform orthopedic analyses, create a biomechanical model of the knee.
3. Therapeutic robot or radiation is necessary to soften the movement of the tumor, due to adaptation to the patient's breathing movements. Consequently, the effect of radiation is reduced.
4. The Cyber Knife robot is used in radiation therapy of tumors.
5. The Fanuc robot speeds up the packaging of medicines in pharmaceutical factories.
6. A robot with built-in computer vision, a multi-joint manipulator recognizes and sorts objects, moves them. It is used in patient care. It does not have an exact name.
7. Antibacterial nanorobot. Its function is to remove bacteria from the blood.

The use of robots will allow treatment to be carried out at a qualitatively different level, to facilitate the work of doctors, to make it more efficient and, consequently, to increase the profitability of medical institutions. Perhaps, the use of robots will reduce the errors of specialists, reduce the time of recovery and hospital stay, and improve the patient's quality of life. However, their use can negatively affect the patient's psycho-emotional state, and, consequently, his personal ecology. After all, the purpose of robots is to replace medicus, and this may not always be successful, since a person is a more sensitive nature.

Each new term has its own referent and meaning. Each new term is emotive both for the patient and for the specialist who needs to get used to the new term. For example, after conducting a survey among 23 subjects, it was found that the word prosthesis has a negative effect on all respondents, and bionic hand has a neutral effect, does not have any emotional impact, as does the word robot. The unknown term bionic hand aroused interest and emotion, since it is incomprehensible. This confirms the idea of the relationship between language and life, and "the emotional energy of the word, affecting the consciousness and will of a person, is reflected in his physiology".

Let us explain the meanings of some new terms. The lexeme plaster is known as an everyday word. Today this term functions in a new aspect: it has a different meaning, different functions. A brief explanatory dictionary of medical terms gives it the following definition: "A plaster is a thin sheet or polymer film with a one-sided adhesive coating. It is used to secure bandages, bring the edges of wounds together". In modern medicine, such knowledge functions as plasters collecting and transmitting information about a person's health, indicators of his physical activity. With its

help, human cardiac activity is monitored, continuous electrocardiography of outpatients, respiration monitoring, blood glucose levels; tracking the growth of stress factors; monitoring epilepsy. Such use - a new achievement of medicine evokes positive emotions, surprise and joy in patients. The use of animal organs for transplantation to humans has led to the emergence of the term xenotransplantation.

For the transfer of confidential data, a familiar technical term is used - blockchain. It functions in medicine due to its anonymity, decentralization and cryptographic encryption.

The term biomaterials has become increasingly used, meaning materials that are used to "create implants and endoprotheses, components of biologically active and medicinal products; carriers intended for use in bioengineering methods. These are drugs that function in contact and interaction with living tissues, organs". We emphasize that in the minds of ordinary people, this term is associated with human organs of living people, which are taken for "repair" of adults and children. Often, doctors commit a crime for this. Therefore, the term biomaterials is not environmentally friendly, since it negatively affects the psyche of homosapiens.

Let's continue with the illustrations: biohacking takes the human body to a new qualitative level, improving the patient's well-being and regulating its vital processes. The pulse oximeter device reads the degree of arterial blood oxygen saturation, assesses the level of hypoxia during pregnancy, in premature babies and young children, in anemia, large blood loss, during transportation of patients, in lung disease and anesthesia during surgery. New terms with the adjective perinatal (perinatal center, perinatal medicine, perinatal clinic) do not denote a specific maternity hospital. This term denotes a combination of actions to provide medical care in the prenatal, postnatal periods and care for the mother and child.

The large number of nominations of this disease indicates a lack of understanding or as yet implicit knowledge of the course and consequences of the infection. Therefore, the following words and phrases related to the disease appeared in newspapers: Chinese pneumonia (by location), deadly virus (threat), crowned killer (function), ideal weapon. The meaning of the term coronavirus has changed, as the symptoms and signs of the disease have changed. This confirms the judgment of F. Riggs, who considered the relationship of concepts to terms and words to concepts as "one to many", that each concept can be designated by many terms, and each word can be associated with many concepts. Therefore, the term coronavirus can be interpreted as the need to detail the properties, phenomena, and signs that require adequate nomination.

The specific concept of a virus (from Latin Virus - poison) - a submicroscopic infectious agent, the causative agent of infectious (viral) diseases of humans, animals, plants, is, as it were, the main frame, since a virus is the causative agent of a disease. This concept is updated by the above-mentioned terminology and abbreviations. In any case, the term coronavirus is undoubtedly not environmentally friendly, since it evokes unpleasant associations and experiences. A new term creates a new type of knowledge. Coronavirus (new type of virus) - new coronavirus infection (study of symptoms, signs, treatment, prevention) - COVID-19 - invention (development) of a new vaccine.

The above text demonstrates the descriptive function of language: some parameters and the origin of the term are described. But the example of this disease can be used to demonstrate the role of linguistics in science: it is thanks to it that it names diseases, with the development of knowledge about it it varies these names from scientific to everyday, records everything that happens in connection with this disease: names of drugs, medical equipment, medical procedures, their methods and techniques, various stages of the disease and the results of its treatment, various experiences associated with it, both doctors and patients, and many others. The most important function of linguistics is informational, both horizontal (intragenerational) and vertical

(intergenerational) transmission of information about the course of the disease and methods of its treatment.

Not all terms of the last century have become well known; they function only in a certain sublanguage of medicine, unlike, for example, the term coronavirus. Let us give an example: the medical term *salon dementia* implies a low intellectual level, masked by an outwardly seemingly good, but patterned speech, manners learned in the process of education, exquisite clothes, a known social attitude and spiritual pretensions, manifested mainly in memorized phraseology with a hidden deficiency of critical judgments. The German scientist Bleuler called this syndrome *die Unklaren* - unclear. Articles use such variations of it as constitutional stupidity and *unclarens*.

Thus, the meaning of the emergence of new medical terms is to provide doctors, patients, the scientific community with reliable, objective information about some medical phenomenon or process.

Conclusion

Progress is driven by man, and the concepts nominated by him are connected with his thinking, including emotional thinking. New terms indicate the emergence of new types of knowledge. Examples of such new knowledge are given in the article, and many new knowledge remained beyond its limits. But all of them prove the validity of our thesis: medical innovations are mapped by language and launched into verbalism. Today, borrowed terms function in Russian medicine, which should become international. We believe that the original vocabulary should function alongside them. The presence of synonyms will help confirm which of these terms will take root in the terminology of the language of medicine.

Lexical and syntactic innovations in the language of modern medicine are created not only by the thinking and consciousness of scientists, but also by their emotions, corresponding to a certain communicative-ecological environment. The language of medicine includes in its terminology emotional designations based on metaphorization and personification, performing a cognitive-emotive function.

Methodology

This study employs a qualitative and analytical approach to examine the formation and evolution of new medical terms. A review of recent developments in medicine, such as advances in nanotechnology, genetic engineering, and digital health technologies, is conducted to identify emerging terms. The research involves analyzing existing medical terminology using cognitive and discursive frameworks to understand how new terms are created and how they reflect scientific innovations. Additionally, the study investigates the impact of these new terms on both medical professionals and patients through surveys and linguistic analysis. The data is processed using comparative and descriptive methods to track the adaptation of new terms in medical language. The findings are based on a combination of theoretical analysis and empirical data from the field of contemporary medicine.

Results and Discussion

The study reveals that the rapid advancements in medical science, particularly in areas like nanotechnology, digital health, and genetic engineering, have led to the emergence of new medical terms. These neologisms reflect both technological innovations and the evolving understanding of medical practices. The analysis shows that these terms often emerge from the need to describe new treatments, diseases, and technologies in a more precise and specialized way. Additionally, the use of metaphors and personification in medical terminology, such as “robot-assisted surgery” or “biohacking,” highlights the cognitive-emotive function of language. The findings suggest that the development of new terms is essential for maintaining clear communication in the medical field, ensuring that both healthcare professionals and patients can

understand complex medical concepts. Furthermore, the study emphasizes the importance of the integration of linguistic, technological, and emotional considerations in the formation of these terms.

Conclusion

In conclusion, the study underscores the significant role of language in reflecting and supporting the rapid advancements in medical science. New medical terms are crucial for accurately conveying emerging concepts, technologies, and treatments. As medicine continues to evolve, so too must its language, adapting to new realities and innovations. The creation of these terms is not only a linguistic necessity but also a cognitive and emotional process, highlighting the deep connection between language, thought, and medical practice. The study also suggests that the proper understanding and usage of these terms are essential for effective communication within the medical community and between healthcare providers and patients. Thus, the development of medical terminology is an ongoing process that requires continuous adaptation to the changing landscape of medicine.

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