ТОРАЙГЫРОВ
УНИВЕРСИТЕТІНІҢ
ХАБАРШЫСЫ

Филологическая серия
Издается с 1997 года

ISSN 2710-3528

№ 3 (2022)

Павлодар
НАУЧНЫЙ ЖУРНАЛ
ТОРАЙГЫРОВ УНИВЕРСИТЕТА

Филологическая серия
выходит 4 раза в год

СВИДЕТЕЛЬСТВО
О постановке на переучет периодического печатного издания,
информационного агентства и сетевого издания
№ KZ30VPY00029268
выдано
Министерством информации и общественного развития
Республики Казахстан

Тематическая направленность
публикация материалов в области филологии

Подписной индекс – 76132

https://doi.org/10.48081/CEQT4278

Бас редакторы – главный редактор
Жусупов Н. К.
d.ф.н., профессор
Заместитель главного редактора
Анесова А. Ж., доктор PhD
Ответственный секретарь
Уайханова М. А., доктор PhD

Редакция алқасы – Редакционная коллегия
Дементьев В. В., д.ф.н., профессор (Российская Федерация)
Еспенбетов А. С., д.ф.н., профессор
Трушев А. К., д.ф.н., профессор
Маслова В. А., д.ф.н., профессор (Белоруссия)
Пименова М. В., д.ф.н., профессор (Российская Федерация)
Баратова М. Н., д.ф.н., профессор
Аймухамбет Ж. А., д.ф.н., профессор
Шапауов Э. К., к.ф.н., профессор
Шокубаева З. Ж., технический редактор

За достоверность материалов и рекламы ответственность несут авторы и рекламодатели
Редакция оставляет за собой право на отклонение материалов
При использовании материалов журнала ссылка на «Вестник Торайгыров университета» обязательна

© Торайгыров университет
The article discusses some aspects of the motivation of the terms in the field of IT in medicine on the basis of the Russian language. Definitions of the concepts «term», «abbreviation», «acronym» are given, motivated and unmotivated types of terms are distinguished. The specifics of the motivation of terms is revealed, which manifests itself in the disclosure of the semantic relationships of the meaning and structure of the terminological unit. In the course of the study, there is a tendency to combine different types of motivation within the same sphere, models of term abbreviations are presented, as well as acronyms and abbreviations in English used in international nomenclature.

The article also presents an analysis of Russian acronyms and abbreviations in the terminological system under study, highlights thematic categories according to the name of organizations, equipment, medical history, treatment methods, names of information databases. In the context of the issues under consideration, groups of information systems are given in terms of content (territorial, problem-oriented).

The authors came to the conclusion that the use of the abbreviation method in term formation indicates the flexibility of the language and its ability to adapt to the changing conditions of modernity, which is an important argument for the functioning of the law of economy of language means. In addition, it was noted that, depending on the field of application, various extralinguistic factors influence the formation of the studied terminological system.

Keywords: term, motivation, abbreviation, acronym, information technology, terminological apparatus.

Introduction
At the present stage of terminology development, the cognitive approach to the study of the formation and functioning of terms reflects the new value orientation
of linguistics, consisting in the comprehension of the need to study linguistic phenomena through the prism of human inner world. Addressing the topic of the study indicates the authors’ increasing interest to the problems of unification and streamlining of terms, and, in this regard, the interest in the linguistic aspects of the development of terminology in the sphere of IT in medicine. A comprehensive study of the IT term system represents a great interest due to the ever-growing trend towards interactive interaction between computer users and specialists in terminology standardization.

The relevance of the study is determined by the fact that at this time the issue of streamlining and standardization of lexical units, as terms of computer or information technology, so demanded in modern society, and the activities of organizations to normalize terminology are becoming more and more active. However, the following questions are not studied yet, as how many elements of the officially adopted term system are reflected in the consciousness of the professional linguistic personality, how widely standardized terms are used in real professional communication, what forms of terminological formation are preferred in the minds of users.

The modern stage in the development of information systems in the field of IT in medicine is characterized by the creation of large information systems that ensure the transition to uniform analysis and monitoring of individual areas of medicine on the basis of data integration in registers of healthcare various levels.

At present time, we can definitely say that individual areas of informatics are being merged and we are observing and participating in the transition to hybrid systems aimed at solving complex problems of individual and public health assessment combined with support for both treatment and diagnostic, as well as medical and organizational issues. The basis for this is the information systems, in the content plan divided into territorial (horizontal) and problem-oriented (vertical) according to the areas of medicine (oncology, phthisiology, hereditary and congenital diseases and malformations, and etc.). Thus, a unified medical information space is being formed, which can be defined as a distributed database of all medical information with the possibility of authorized access for each doctor to any patient data, which can be obtained promptly or after a certain period of time using telecommunications channels from any institution. This approach simultaneously addresses virtually all organizational issues related to the diagnostic and treatment process, including in emergency situations.

The concept of «information technology» includes the entire technological stack that provides the collection, processing, storage, classification of information in digital form. The development of these technologies in the last decade has provided their penetration into various human activities [1]. With a relatively low
cost of implementation and operation, digital systems provide the development of optimal and suboptimal solutions through the use of mathematical methods.

**Materials and methods**

Theoretical analysis of special literature on the research problem; linguistic methods, including the analysis of the dictionary definition of terms and their equivalents in terms of their motivation / non-motivation, the analysis of terms by the methods of term formation, the descriptive method, the method of sampling Russian and English terminological units.

**Results and discussion**

It has become possible to build predictive models of the situation development based on historical data with the increasing amount of digitally accumulated data characterizing processes at different stages, a simultaneous improvement in the computational performance of the system and a drop in the cost of these calculations. These techniques allow to compensate the lack of mathematical models in a number of areas of human activity, including medicine, biology and other spheres.

The concept of information technology first appeared in 1958 in its modern sense, where the authors noted that this new technology had not had a single universally accepted name yet. The authors included three categories in the concept of information technology:
- processing methods;
- application of statistical and mathematical methods to decision-making;
- modeling higher-order thinking using computer programs.

Today, the definition of IT covers all resources necessary for information management, including computers, software, and networks needed to create, store, manage, transmit, and retrieve information, which can be grouped as follows:
- Technical tools;
- Communication facilities;
- Organizational and methodological support;
- Standards used [2].

With the development of IT, the scope and application of IT expand and include various areas of human activity, involving health care. Initially, the role of IT in health care was seen more as a way to automate routine bureaucratic procedures. As the number of IT applications grows, the state role as a regulator of emerging new types of interactions is also increasing.

Up to date, there are many definitions of the concept of “information technology”. In our work, we follow the definition adopted by UNESCO: information technology is a complex of interrelated scientific, technological, engineering disciplines that study methods of effective organization of people labor engaged in information processing and storage; computer technology and
methods of organization and interaction with people and production equipment, their practical applications, as well as the social, economic and cultural problems associated with all this [3].

It is important to note that in recent decades some areas of informatics and medicine have merged, which is reflected in language and is the basis for the study of linguistic aspects of terminological system in order to identify procedures, regularities of special vocabulary formation and is of interest in both linguistic and professional medical sphere.

In this connection it is necessary to consider the definition of the word «term», which we understand as «a special word or word combination accepted in professional activity and used in special conditions» [4, p. 14]. At that, adhering to O. I. Blinova’s definition, we consider motivation «as a structural and semantic property of a word, allowing us to realize the conditionality of the connection between its sound and meaning on the basis of correlation with linguistic or non-linguistic reality» [5, p. 23].

The study of the terminological units’ development has an important place in the field of Russian terminology. Development is a complex characteristic of a term. The manifestation of development in terminology depends on many factors, including the conditionality of the term by the social and scientific and technical development, historical variability of terms, etc.

From the point of view of L. N. Kiyak, who considers that the key concept in revealing of features of the term development is the internal form of the word, making system characteristic of a word or word combination and playing a role of a «bridge» from a sound shell to the meaning of the term [6]. Revealing the development of a word and term it is necessary to consider the comparative characteristics of its meaning and internal form. The boundaries of development are determined by that part of the terminological meaning, which is actualized in the inner form of the word. Semantic components of the internal form, which appeared by chance and have not found or have lost relation with the corresponding terminological meaning, do not reveal the development of the word, but reduce, weaken it, make the term as a whole incorrectly motivated.

The motivological aspect of development makes it possible to determine the development essence of a special word, contributes to the study of the linguistic nature of special vocabulary units, helps to expand the idea of special vocabulary as a system of language [7]. A study of this kind has a particular interest because it allows us to identify the specificity of motivational relations in terminology, which reveals the essence of its motivation, as well as to determine the place of these relations in the process of term formation.

It should be noted that absolutely non-developed terms do not exist, since any term has been improved after a special concept, this has a secondary aspect.
This means that a term always has some degree of motivation, because a certain motivation for conveying the sound complex of the word was present from the beginning. Therefore, we can only talk about the degree of development [8].

Developed, according to experts, can be considered a word or a term that correlates by structure and lexically with other words of the language, that is, contains morphological and/or lexical meaning. The result of the process of term formation are often developed units, which is mainly due to the fact that in the formation of terms the authors include in the created term elements that allow to establish a relationship of this word with already existing terms in this field of knowledge. On this basis, the newly formed term may have structural or lexical development.

A term is considered developed if its structure, its sound complex, i.e. its external form, fully conveys the content of the term, its distinctive features. Developed terms in the field of IT in medicine can be represented:

- term-words taken from general literary Russian or foreign languages, but used in a special meaning (expertise, system);
- term-words derived from Greek-Latin term formative elements, each of which has a developing feature (tomography, roentgenogram, echocardiogram);
- word combinations (electronic medical record);
- abbreviations (PMC – personal medical records; SMIS - Statistical Medical Information Systems).

Despite the great variety of ways of word formation in the IT terminological system, only some of them are particularly productive: borrowings from the English language, borrowings from our own commonly used language and abbreviation.

Despite the great variety of ways of word formation in the IT terminological system, only some of them are especially productive: borrowings from English, borrowings from our own commonly used language and abbreviation.

It is worth mentioning that the terminology of the IT sphere was formed first of all in the English language and the place of origin of computer technologies is the USA. Borrowing of computer terms from the English language has interested linguists at all stages of the development of terminology, it continues to be the focus of attention today. Both Russian and foreign linguists (D. S. Lotte, S. V. Grinev, V. G. Gak, V. N. Telia and others) are dealing with the problem of borrowing, and mainly with Anglicism.

As the terminological apparatus of IT in medicine is dominated by multicomponent, dictated by the desire for disclosure and detailing of concepts, the terms are subsequently subjected to the process of abbreviation. That is why in our work a special place is dedicated to abbreviated terms, which are widely represented in the sphere of IT in medicine.
In the course of our research we came to the definition of the abbreviation concept. For the basis we took the definition of the word «abbreviation», it has a meaning a word formed by the shortening of a word or word combination and read by the alphabetical name of the initial letters or by the initial sounds of the words included in it [9].

Abbreviations are also called structural and stylistic correspondences of words and combinations, which receive «the preferential right of being interchanged, while the expanded name serves only as a means of interpretation of the concept expressed by abbreviations» [10, p. 20].

Abbreviation is not only common in written form, but also colloquially in the form of graphic representation (ultrasound, ECHO), or another type of abbreviated word for the term system – acronyms (EMC – electronic medical records). Analysis of lexical units of the IT system of terms showed that they take a huge place in the composition of this system of terms.

Acronyms are initial abbreviations pronounced as separate words, such as MIS - Medical Information System.

In O. S. Akhmanova’s Dictionary of Linguistic Terms, the term «acronym» is considered synonym to the term «initial type of compound abbreviations» and thus includes all types of initial abbreviations. However, a number of linguists believe that there are no big differences between acronyms and initial abbreviations.

The term «acronym» itself first appeared in American scientific and technical literature in the early 1940s in the meaning of «abbreviation similar to an ordinary word». The «resemblance» of an acronym to of an ordinary word is expressed first of all on the background of its pronunciation, so this feature («word-like») is relevant to the allocation of acronyms into a separate derivative class [Superanskaya 1989].

Statistical research has shown that both initial abbreviations and acronyms occupy an important place in the IT terminological system. Among the abbreviations, a large number are the names of organizations, systems, and programming languages. We meet, for example, such programming languages as: Algol (acronym for ALGOrithmik Language), APL (short for A Programming Language), Lisp (acronym for LISt Processing), Simula (acronym for S1MUlation Language), and others. As for the names of organizations, there are dozens of them among the acronyms. This suggests that at least 10% of all terms in the field of IT are acronyms, and sometimes the number is much higher.

An important requirement for abbreviations and acronyms is their easy pronunciation and harmony. That is why this requirement is often taken into account in creating the names of organizations, systems and programs. Some acronyms are similar in sound to proper names, for example: Diane (an acronym for Direct Information Access Network in Europe) - a European online information system.
providing access to databases on economic, social, scientific, medical and technical issues and thus, acronyms are a rich source of input to IT terminological systems. It should be noted that the structural-semantic and systemic-functional features of abbreviation have been studied quite well. However, the cognitive and discursive aspects of abbreviation currently stay insufficiently studied, especially in the medical context. It is important to note that abbreviations and acronyms are an essential part of modern IT terminology in medicine.

In our work we consider an abbreviation as a language sign, i.e. the unity of a certain thought content (the signifier) and a set of phonemically distinct sounds (the signifier). In the case of abbreviations, the signifier is individual letters, for example, EMC – Electronic Medical Records.

It is not uncommon to call an acronym an alphabetic abbreviation – SMIS, GP. However, we believe that an acronym is not a word, because it has no conceptual equivalent. It is important to note that the use of acronyms allows us to solve the problem of overloading of terms and terminological combinations, which facilitates their perception and reproduction in full form.

Our analysis of Russian acronyms and abbreviations of IT in medicine allowed us to distinguish the following thematic categories:

1 **Names of organizations:**
   - MO – Medical Organization
   - VNOK (SCRF) – Society of cardiology of Russian Federation
   - EMS – Emergency Medical Care
   - WHO – World Health Organization

2 **Medical Equipment, Instruments:**
   - MSCS – Medical Devices and Computer Systems
   - AVR – Artificial Lung Ventilation
   - CPB – Cardiopulmonary bypass machine
   - MRI – Magnetic Resonance Imaging
   - PET-CT – Single Photon Positron Emission Computed Tomography

3 **Clinical interview, case histories:**
   - EMC – Electronic Medical Records
   - IMR – Individual Medical Records
   - PHR – Personal Medical Record
   - EPMR – Electronic Personal Health Record

4 **Diagnostics, procedures, treatment methods:**
   - CT – Computed tomography
   - ET – Electroconvulsive therapy
   - FGDS – Fiberoptic Gastroduodenoscopy

5 **Names of information databases:**
   - DBMS – Database Management System
MIS – Medical Information System
RRI – Regulatory and reference information [2].

It is necessary to pay attention to the fact that in the studied sphere of IT in medicine a special place is occupied by acronyms and abbreviations in English, which are international names of concepts in this field of knowledge.

Undoubtedly, at the present stage of linguistic development the process of borrowing in IT terminology is explained by the following factors:
- the intensive development of science and technology in the field of IT, including medicine;
- the universal nature of developing information technologies;
- international cooperation and integration in the field of medicine;
- an increasing amount of translated information in the field of IT.

Let’s consider some examples of acronyms and abbreviations in English:
- HealthNet – HealthNet Marketplace of the National Technology Initiative;
- OLAP – Online Analytical Processing is a data processing technology for preparing summarized (aggregated) information on the basis of large data files structured according to a multidimensional principle;
- OLTP – Online Transaction Processing - transaction processing in real time;
- IoMT – The Internet of Medical Things.

Conclusion
In the context of our study, the concepts of «term», «acronym» and «abbreviation» were discovered, thematic categories in the classification of terms were considered. It was also revealed that depending on the field of application that a particular terminological system is intended to serve, its formation is influenced by certain extra-linguistic factors, and their role in this process may be different. Since the development, unification and standardization of terms is a conscious, focused, organized process, which reflects the artificial aspect of the formation of terminological systems.

It can be concluded that the study of terms in the sphere of IT in medicine in the context of development aspect takes an important place in the problems of terminological system of the Russian language and contributes to the revealing of the linguistic features of the terms in the studied area. In addition, the consideration of individual aspects of the term’s development in the sphere of IT in medicine, including abbreviation, can be presented as direct evidence of the flexibility of language and its ability to adapt to the changing conditions of the present, as well as an argument for the functioning of the law of economy of language means, which in turn proves the integrity of both individual phenomena in language, and language as a whole.

244
References


References


Material received on 08.09.22.

*Д. Б. Тілеумбетова1, С. А. Иванова2, Н. В. Докучаева3

1,2,3 Абылкас Сағынов атындағы Қарағанды техникалық университеті, Қазақстан Республикасы, Қарағанды қ. Материал 08.09.22 баспаға түсті.

**ИТ САЛАСЫ ТЕРМИНДЕРІНІҢ УӘЖДЕМЕЛІЛІГІ МЕДИЦИНАДА ТЕРМИНОЛОГИЯ КОНТЕКСТІНДЕ**

Мақалада медициналық IT саласындағы терминдердің орыс тіліндегі материалдарға мотиваціясының қейір аспектілері қарастырылады. «Термин», «қыскартулар», «қыскартулар» ұғымдарының анықтамалары беріледі, терминдердің өзгелі және қозгалмайтын түрлері болінеді. Терминологиялық бірліктің магынасы
Мотивированность терминов сферы IT в медицине в контексте терminoобразования

В статье рассматриваются некоторые аспекты мотивированности терминов сферы IT в медицине на материалах русского языка. Даются определения понятий «термин», «аббревиатура», «акроним», выделяются мотивированные и немотивированные виды терминов. Выявлена специфика мотивированности терминов, проявляющаяся при раскрытии смысловых взаимоотношений значения и структуры терминологической единицы. В процессе проведенного исследования наблюдается тенденция к сочетанию разных типов мотивированности в рамках одной сферы, представлены модели...
Сокращений терминов, а также акронимы и аббревиатуры на английском языке, используемые в международной номенклатуре.

В статье также представлен анализ русских акронимов и аббревиатур в исследуемой терминосистеме, выделены тематические категории по названию организации, оснащению, истории болезни, методам лечения, наименованиям информационных баз данных. В контексте рассматриваемой проблематики даны группы информационных систем в содержательном плане (территориальные, проблемно-ориентированные).

Авторы пришли к выводу о том, что применение способа аббревиации в терминообразовании свидетельствует о гибкости языка и его способности к адаптации в изменяющихся условиях современности, что является важным аргументом функционирования закона экономии языковых средств. Кроме того отмечено, что в зависимости от области применения на формирование исследуемой терминосистемы влияют различные экстралингвистические факторы.

Ключевые слова: термин, мотивированность, аббревиатура, акроним, информационные технологии, терминологический аппарат.