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CHALLENGES RELATED TO MEDICAL TERMINOLOGY

The article discusses the current state of Kazakh medical vocabulary, more specifically, its fixation in bilingual or multilingual paper or online dictionaries, as well as translation problems. This is done by overview of the translations of medical vocabulary presented in existing bilingual and multilingual (translation) printed medical dictionaries and the web-based bilingual dictionary of the Termincom.kz portal. The results of the research are as follows: First, our research identified a lack of specialized bilingual and multilingual medical dictionaries. Second, in the analyzed dictionaries, we defined several Kazakh translations for a given Russian or English medical word. Third, the source languages of most bilingual or multilingual dictionaries are Russian, English, or Latin. Finally, despite the State Terminology Committee's approval of the term, there is a discrepancy in the use of translated terms in phrases. This phenomenon demonstrates the lengthy processes of codification, unification, and standardization of medical terms in the Kazakh terminology system. These shortcomings provide crucial insights for future research.

Keywords: language policy, standardization, web-based platform, linguistic aspect, inconsistency.

Introduction

The importance of medical terminology in the context of healthcare communication cannot be emphasized. Effective communication between healthcare providers, i.e. medical professionals, patients and their relatives, and other stakeholders in the system is largely dependent on medical terminology. It offers a common vocabulary that makes easier to communicate precisely and accurately about patient care plans, procedures, treatments, and diagnoses. The standard of healthcare and patient outcomes may be risky in case of a medical

terminology misunderstanding. Then, understanding the world of medical terminology is not without its difficulties.

The paper aims to provide an overview of the linguistic and standardization aspects of medical terms.

By studying these challenges, we can gain insights into the complexity and specificity of medical language as well as the variations in terminology usage across different medical specialties. Issues of translating medical terms accurately and consistently and their fixation in the dictionaries will also be examined.

Materials and methods

In order to achieve the main goal of the research, the following methods and techniques were applied: selection of dictionaries, translation analysis to define appropriate translations of medical terminology units (hereinafter referred to as T-units) of the source language (hereinafter referred to as SL) and into the target language (hereinafter referred to as TL), in Kazakh, particularly.

Paper-based medical dictionaries by Akhmetov M. [1], Momynov T., et al. [2] and the online terminology database termincom.kz [3] were chosen as a material to test our hypothesis and achieve the research goal.

To define if the TL medical terms convey the same meaning as those of the SL translation, equivalence theory by Komissarov V. [4] was applied. We used descriptive translation studies (DTS) by Mona Baker [5] and terminology translation theory of Sue Ellen Wright [6] to examine the translation methods used in rendering SL medical terms into TL in dictionaries entries.

As well as the works of the domestic and foreign researches such as Borankulova B, Proshina Z [7], Borankulova B, Androsova S, et al. [8], Hendrics K. [9], Fischbach H. [10] engaged in medical translation.

Results and discussion

Despite the fact that sufficient and reasonable measures are taken to improve the state language proficiency, the level of “the language of Kazakh science” is still lacking as compared to “the English and Russian scientific languages” in the country. Besides, the technological and infrastructural development and the international cooperation of the country have given new impetus to the formation of new terms and concepts in industry-specific terminology. Moreover, it is known that the new terms emerging in the various branches of science are largely derived from the English language. Of course, Kazakh technical and scientific terminology is no exception. Moreover, it must be admitted that English terms (or other foreign language terms) are still in most cases translated into Kazakh via Russian as an intermediate language.

While studying the issues connected with Kazakh medical terminology, we identified several of them. But we will delve into linguistic and standardization challenges.

As it was mentioned above, one of the challenges of the medical terminology is a linguistic one. The problem is due to the following characteristics of the medical terminology: morphological complexity, terminological variants of medical terms, the frequent use of abbreviations and jargons, semantic precise, cultural sensitivity, and neologisms. These terminology characteristics are bound to the Kazakh medical terms as well. Solving the linguistic challenges requires collaboration between healthcare professionals, medical translators, terminologists and language experts. Strategies such as creating a glossary, standardizing terminology, contextual translation, and cultural adaptation can help overcome language barriers and facilitate accurate communication in healthcare settings.

English is a common language for knowledge dissemination, academic research, and international cooperation among medical specialists, researchers and students all over the world. Nevertheless, not all of the people master English in a level to get informed on the medical news. Therefore, medical translator or interpreter's service is in need.

A prolific medical translator Henry Fischbach [10, p. 21] notes, "Medical translation is not without its problems". Further, he provides his viewpoint by saying that it is not enough for medical translators to know of anatomical structures of the human body and their Greco-Latin names but they should be aware of technology and possess cursory knowledge of medical statistics, chemistry etc. as well (ibid.). Finally, he concludes, "Yet, [...] medical translation can still rely on [...] and a standardized terminology which minimizes misunderstanding and maximizes the transfer of meaning" (ibid.). Concepts are thus obviously part of a particular language. Therefore, when we talk about medical translation, it goes without saying that terminology is also taken into account.

Translation of medical terminology from English or Russian into Kazakh comprises some linguistic peculiarities. To define them, we analyzed the entries in the translation dictionaries to compare the translation equivalents provided for medical terms in different languages. A continuous sampling method was applied to justify challenges existing. Moreover, we consider that medical translation dictionaries are essential tools for translators and interpreters to standardize medical terminology.

According to V. Kommissarov's equivalence theory [4] and descriptive translation studies (DTS) by Mona Baker [5], linguistic equivalence, cultural factor as well as formal equivalence should be considered in medical terminology translation. Therefore 150 T-units were chosen by a sampling method from an English-Kazakh Dictionary of Medical Terms by a group of authors and Russian-Kazakh-Russian Dictionary by M. Akhmetov in order to explore if these requirements were taken into consideration when rendering SL terms into TL.

However, the analysis of medical translation dictionaries revealed that in translating English or Russian medical terms into Kazakh the following challenges exist:

- Terminological inconsistency;
- lack of equivalents;
- ambiguity.

Most of the English medical terms lack proper equivalents in Kazakh and they are transliterated or transcribed. In some cases their descriptions are given in the dictionary entries. The latter is non-desirable way of translation as it contradicts linguistic economy principles of term-formation.

For a standardized terminology, it is preferable that a term be attributed to a single concept.

For example, the term asphyxia is entered with 1. асфиксия, тұншығу; 2. цианоз, көгеру; 3. тамыр соғысының (пульстің) тоқтауы, тамыр соғысының болмауы in the English-Kazakh Dictionary of Medical Terms [2, p. 35]. In Akhmetov's dictionary, the Russian term is given as follows: асфиксия, тұншығу in Kazakh [1, p. 557]. As far as the termincom web-based platform's translation is concerned, we found two versions of translation as асфиксия, тұншығу in Kazakh. However, in 2023, the last decision of the Terminology Commission for the Kazakh language translation of the Russian асфиксия remained as асфиксия [3].

The next terminology unit is medical eponymy Scatchard plot a. The full word combination is Scatchard plot assay, where Scatchard is an eponym. Kazakh translation of the eponymy T-unit is Скэтчард графигін құру (лиганд-рецепторлардың арақатынасын зерттеуге арналған [2, p. 35]. 2 meanings of the term assay demonstrated in the dictionary entry are: 1. анализ, пробирилі анализ, (биологиялық) сынама, тест; сандық анализ // анализді өндіру, сынау; 2. сынама, анализге арналған үлгі. But none of them was applied in the TL translation variant. Moreover, in the Kazakh version, the word құру can be omitted in accordance with the translation theory. Unfortunately, the term was not entered into the termincom.kz platform to compare it with the two paper-based dictionaries.

Another example with the eponym: Marie's ataxia. Kazakh translation is Пьер Мари тұқым қуалайтын мишықтық атаксиясы [2, p. 37]. As far as the translation of the term combination is concerned, contextual equivalency of the eponym is not rendered in the TL, i.e. the relationship of eponym to its subsequent units (Пьер Мари+(дің)тұқым қуалайтын мишықтық атаксиясы) in the Kazakh translation does not fit grammatically. Hence, Kazakh ending -ның /-нің, -тың/-дың which is equivalent of English possessive case apostrophe and s is left out. Therefore it is not understandable for dictionary users whether Pierre Marie is an ataxia or Marie's ataxia. In termincom.kz Russian атаксия is rendered into Kazakh as қимыл үйлесімсіздігі [3].

It is evident that due to the advancement of medical science, medical terminology is also changing greatly. For instance, recent two decades due to continuous biomedical research, the development of innovative therapies and procedures, as well as the emergence of new diseases such as the COVID-19 pandemic, the vocabulary of English medical terminology has been replenished with new words and word combinations. The potential of the COVID-19 pandemic concepts and their translation problems into the Kazakh language was considered in the previous study (see the article by B. Borankulova & Z. Proshina) [7, pp. 18-25].

A few medical neologisms we chose to investigate are telemedicine, nanomedicine, genomics, personalized medicine or individualized medicine, evidence-based medicine, telehealth, iShoe, wireless accelerometer, etc. As a result, it was determined that the new words under consideration haven't been properly translated and included in any of the paper-based dictionary entry as of yet. Only two terms of listed above are present in termincom.kz. The first is Russian геномика remains as геномика in Kazakh (in 2019 by the Commission decision) and the second is телемедицина as теледенсаулық consequently (in 2021 by the Commission decision) [3]. Although their loan translations such as телемедицина, наномедицина, геномика, персоналды медицина, дәлелді медицина, теледенсаулық, Ай шу жеңіл аяқ киімі, сымсыз акселерометр are currently used in medical communication and in mass media. We can therefore conclude that, despite the efforts of the State Terminology Commission, Kazakh medical translations are still considered inconsistent and sometimes contain contradictions [8] (see the article by Borankulova B, Androsova S, et al.).

The same challenges can be said about translation of medical abbreviation. Use of abbreviations is common practice in medical communication. Therefore, to translate them is difficult task that requires a special focus on both specificity and context of medical terminology. Moreover, many medical abbreviations are ambiguous and can possess multiple meanings depending on the context.

For instance,

W.B.C.

1 White blood cell – қанның ақ түйіршігі (лейкоцит) [2, p 550]; лейкоцит (қан құрамындағы ядросы бар формалы элемент) [1, p. 410]; лейкоцит [3]

2 White blood count – лейкоцитарлық формула [2, p 550];

TPR

1 Temperature, pulse, respiration – дене қызуы, пульс, дем алу [2, p. 550];

2 Transpiration – тер бөлу, терлеу [2, p. 550]; терлеу, тер шығуы, тер ағу [1, p. 643]; тер бөліну [3].

The examples we mentioned above show in spite of the standard translations of medical terms accepted by the State Terminology Commission, different translation equivalents are still in practice. The abundance of synonyms shows

the unordered coining of terms which leads to terminological inconsistencies. According to terminological management by Sue Ellen Wright, a prominent figure in medical translation and terminology management, the use of evidence-based methods is to ensure the quality and reliability of medical translation [6].

The unification, standardization, and codification of medical terminology are the next challenges for Kazakh medical terminology. In the era of information technology advancement, codification is crucial for the digitization of healthcare systems and medical analysis. Hence, unambiguousness is important for the reliable operation of automated diagnostic systems, medical research, and health information banks. The main goal of medical language is to optimize communication between experts working in their specialties. To this end, nomenclature, vocabulary, terminology, and coding have been developed to support effective communication between medical professionals and the collection of patient data, whether on paper or, increasingly, through an electronic medical record. These systems are the subject of research in the fields of medical information and library sciences and medical linguistics, a sub-discipline of medical informatics and information sciences that focuses on the processing of medical language data in natural language [9]. Unfortunately, Kazakh terminology is still under development, with special terms originating from English and Russian. The Republican Terminology Commission under the Government of the Republic of Kazakhstan is responsible for standardizing and unifying the Kazakh terminology system. Terminom.kz is a web-based, bilingual platform for standardizing and managing terminology, encompassing science, education, technology, economy, and social life in the previous Kazakh reality. The commission's activities have led to the approval of over 20,000 Kazakh translation variants of terms and words in various fields, demonstrating the progress of Kazakh industry terminology. According to the project, there are 10,178 medical terms in the Terminom.kz database [10]. But here again, we can encounter terminological inconsistency, a lack of equivalents, and ambiguity phenomena.

Conclusion

To conclude, the paper is said to have provided a thorough overview of the linguistic and standardization challenges of medical terminology translation. Several findings have been identified by analysis of medical translation dictionaries: 1. Due to linguistic complexity i.e. its technicality and specificity, medical terminology causes difficulties for translators in appropriate conveying medical concepts in different languages; 2. Issues such as terminological inconsistency, lack of equivalents, and ambiguity in TL medical terminology translations defined when analyzing the dictionaries demonstrate achieving standardization of terminology poses significant challenges due to linguistic peculiarities of each languages and varying healthcare systems.

Moving forward, the results of the paper provide the following insights for future research: First, proposals should be made to revise the approved medical terms in the bank termincom.kz and to revitalize their content with new terms. Second, select the most appropriate TL equivalent of the medical SL term before it is fixed in both a paper-based dictionary entry and in the termincom.kz bank. Third, the compilation of a controlled medical dictionary or thesaurus based on world language tools according to ISO requirements. And this should be done through a joint effort of medical professionals and linguists (terminologists, translators/interpreters), including IT specialists, so that every potential user of an online medical dictionary or thesaurus has the opportunity to get free access for this purpose. And finally, the search for consensus on terminology issues, in particular on the translation of international medical terminology into Kazakh.

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МЕДИЦИНАЛЫҚ ТЕРМИНОЛОГИЯСЫНЫҢ МӘСЕЛЕЛЕРІ

Мақалада қазақ медициналық лексикасының қазіргі жағдайы: аударма мәселелері және оның екі көптілді қағаз немесе онлайн сөздіктерде бекітілуі қарастырылады. Мәселелерді анықтау және талдау қолданыстағы екітілді және көптілді қағаз медициналық (аударма) сөздіктердегі және екітілді Termisome.kz порталында бекітіліп, көпшілікке ұсынылған медициналық лексика аудармаларын салыстыру арқылы жасалады.

Зерттеу нәтижелері төмендегі мәселелерді көрсетті: біріншіден, зерттеу барысында елде мемлекеттік тілді, соның ішінде қазақ ғылым тілін жетілдіру мақсатындағы жасалып жатқан түрлі заңи және ғылыми шараларға қарамастан, кәсіби медициналық екітілді және көптілді сөздіктердің жетіспеушілігі анықталды. Екіншіден, талданған сөздіктерде орыс немесе ағылшын тілдеріндегі нақты бір медициналық терминнің қазақ тіліндегі бірнеше аудармалары тіркелгендігін анықтадық. Үшіншіден, екітілді немесе көптілді сөздіктердің көпшілігінің бастапқы тілдері орыс немесе ағылшын/латын болып табылады. Сол сияқты Мемлекеттік терминология Комитеті бекіткен терминдер аудармасына қарамастан, аударылған терминдердің термин тіркестерін қолдануда сәйкессіздік бар. Бұл құбылыс қазақ ғылыми терминологиялық жүйесіндегі медициналық терминдерді кодификациялау, біріздендіру және стандарттаудың ұзаққа созылған процесс екендігін айғақтайды. Бұл кемшіліктер болашақ зерттеулер үшін нақты ақпарат береді.

Кілтті сөздер: тіл саясаты, стандарттау, веб-платформа, тілдік аспект, сәйкессіздік.

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ПРОБЛЕМЫ МЕДИЦИНСКОЙ ТЕРМИНОЛОГИИ

В данной статье рассматривается современное состояние казахской медицинской лексики: вопросы перевода иностранной медицинской терминологии на казахский язык и ее закрепление в двух- или многоязычных бумажных или онлайн-словарях. Выявление и анализ проблем производится путем сравнения переводов медицинской лексики в существующих двуязычных и многоязычных бумажных медицинских (переводных) словарях и утвержденных на двуязычном портале Termisot.kz, представленный для всеобщего пользования.

Результаты исследования показали следующие проблемы: во-первых, в ходе исследования выявлена нехватка профессиональных медицинских двуязычных и многоязычных словарей, несмотря на различные юридические и научные меры, предпринимаемые в стране с целью совершенствования государственного языка, в том числе научной терминологии. Во-вторых, было обнаружено, что в анализируемых словарях зафиксировано несколько переводов конкретного английского или русского медицинского термина на казахский язык. В-третьих, исходными языками существующих двуязычных или многоязычных словарей являются русский или английский/латинский. И в-четвертых, несмотря на перевод терминов, утвержденный Госкомитетом по терминологии, наблюдается несоответствие в употреблении терминосочетаний переведенных терминов. Это явление свидетельствует о том, что кодификация, унификация и стандартизация медицинских терминов в казахской научной терминологической системе является длительным процессом.

Ключевые слова: языковая политика, стандартизация, веб-платформа, языковой аспект, несоответствие.

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