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## **Master Thesis**

Challenges of Medical Translation in the 21st Century from English into  
Azerbaijani

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## ABSTRACT

Translating texts from English to Azerbaijani is a complex and challenging task, particularly in the 21st century. The field of medicine is rapidly growing, with new knowledge emerging and medical terminology continually evolving. This thesis focuses on the difficulties faced by translators in this context. It explores challenges including medical terminology ensuring lexical equivalence in translations, readability and quality concerns. The research provides an overview of the main issues encountered in medical translation. It also touches upon the history of translation and the evolution of medical language. Additionally it addresses aspects such as the qualifications required for medical translators.

The Azerbaijani language does not have a fully standardized medical terminology, which can make it difficult for translators to produce consistent and accurate translations. Cultural differences between English and Azerbaijani can also pose challenges for medical translators. For example, different cultures may have different names for the same medical conditions or procedures. The rapid pace of technological advancement in the medical field means that translators need to be constantly updating their knowledge of the latest medical terminology and concepts.

This thesis delves into the multifaceted challenges that face medical translators in the 21st century as they bridge the linguistic and cultural gaps between these two languages within the context of healthcare and medicine. By shedding light on the linguistic, cultural, technological, and ethical challenges faced by medical translators, it contributes to a deeper understanding of the complexities inherent in this specialized field. The findings of this research will be valuable not only for medical translators but also for healthcare providers, policymakers, and language service providers, aiming to enhance the quality of medical communication and care in a multicultural and multilingual world.

**Keywords:** medical translation, medical language, challenge, specialized terminology, qualified translators, medical resources

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## INTRODUCTION

Communication between individuals who do not speak the same language or have the same culture is facilitated by translation. Consequently, it is regarded as one of the crucial tasks to convey the original text's meaning in the target text's meaning in the second language from one language to another. Some scholars and experts in translation studies claim that translation involves more than just the transmission of language, but rather the method by which the reader is exposed to cultural norms or recipient of the intended text.

The purpose of translation is to establish an equivalency relationship between the original and translated texts (that is, to ensure that both texts express the same meaning), while taking a number of restrictions into account. These constraints include context, the original language's grammar rules, writing standards, idioms, and the like (Orujova, I., 2018).

The different types of translation vary according to the target audience and the field in which they are intended for use. Every kind differs in terms of traits, approaches, and the processes involved in translating meaning from the first to the second language. One of the hardest translation types to translate, scientific translation requires certain standards and procedures. According to its quality, the translator should be conversant with the majority of the scientific words used in the field he is translating because it is academic in nature and cannot be learned through audiovisual communication. One of the sub-types of scientific translation is the medical translation which is widely used in different fields whether academic, commercial and manufacturing of medicines. In medical translation, there are many affixations and terminologies used that require a high degree of accuracy and adequacy to be translated from one language into another

English is currently the lingua franca in medicine, especially due to the development of new terms that combine the medical field with technical areas. A number of subjects are covered in medical translation, including pharmacology, the medical rescue system, surgery, obstetrics, pediatrics, psychiatry, internal medicine, cancer, cardiology, and other specializations, in addition to other disciplines like law and administration. Translation plays a critical role in the global dissemination of new medical discoveries and knowledge. Popularizations like medical textbooks and popular

science books on medicine are among the translated texts; research papers, conference proceedings, case studies, case histories, discharge summaries, reports, and relatively straightforward patient materials like information booklets, consent forms, and brochures are also included. In an increasingly interconnected world, the demand for effective communication in the field of healthcare has grown exponentially. The ability to bridge linguistic barriers and convey medical information accurately and comprehensively is essential, not only for the safety and well-being of patients but also for the advancement of medical science and global health. In subsequent centuries, medicine gradually turned into a scientific discipline and made huge progress, generating an ever-increasing amount of information as well as compelling needs for knowledge transference, international communication and translation (Montalt 2013).

The practice of medical translation, particularly from English into Azerbaijani, has emerged as a critical component of healthcare delivery, research dissemination, and global collaboration. The globalization of medicine and healthcare is undeniable. With advancements in technology, the globalization of medical knowledge and practice has accelerated, and English has become the lingua franca of the medical world, serving as the primary language for medical research, publications, and communication. This ubiquity of English in the medical sphere has given rise to the need for skilled medical translators who can accurately convey complex medical concepts and terminology into various languages, including Azerbaijani. In today's world technological advancements are prevalent across domains. This influence extends to medicine where terms related to innovations find their place in areas like cardiology, ophthalmology, nano medicine and bio engineering. Consequently there has been an expansion of medical vocabulary due to this rapid development that began towards the end of the 19th century but gained significant momentum during the 20th century with fields, like oncology or radiology witnessing substantial growth.

Medical translation is a challenging endeavor that goes far beyond mere linguistic proficiency. It involves navigating intricate medical terminology, cultural sensitivities, legal considerations, and the need for precision and consistency in communication. This thesis delves into the multifaceted challenges faced by medical translators when translating from English into Azerbaijani in the 21st century and explores potential solutions to improve the quality of medical translation. To address these challenges, this thesis will explore various strategies and best practices for enhancing the quality and accuracy of medical translation from English into Azerbaijani. It will delve into the

importance of specialized training and education for medical translators, the development of comprehensive terminology databases.

By examining these challenges and potential solutions, this thesis aims to contribute to the ongoing discourse on the importance of medical translation in the 21st century, offering insights that can aid healthcare practitioners, researchers, and translators in bridging the linguistic gap and ensuring the global dissemination of medical knowledge while maintaining patient safety and understanding.

### **Actuality of research**

Translation plays an important role in maintaining and advancing public health by mediating medical knowledge and information across linguistic boundaries. The COVID-19 epidemic highlighted the need for medical translation more than ever. Translation supported researchers' attempts to disseminate discoveries on treatment and vaccine development as well as maintained a flow of timely and correct information across borders. Today, people show much interest in their health and seek alternative sources of information instead of just believing whatever said by the doctor. As a result, many medical articles and books are constantly written and many of them should be translated. In the 21st century, the world has become more interconnected than ever. Medical information and research from English-speaking countries often need to be translated into other languages, including Azerbaijani, to facilitate global health communication.

This research is actual because investigating the challenges in this context is crucial for ensuring the accurate dissemination of medical knowledge. Translating medical content involves not only language but also cultural nuances. Understanding the unique challenges that arise when translating medical terms and concepts from English into Azerbaijani is essential for bridging cultural gaps in healthcare communication. Providing healthcare information in the patient's native language is essential for patient-centered care. Investigating the challenges of medical translation into Azerbaijani can contribute to improving the patient experience and healthcare outcomes for Azerbaijani-speaking populations. Medical translation services continue to be an important bridge for people of all nationalities to understand medical terminology. Without the expertise of medical

translators, it would be almost impossible for monolingual people to expand their knowledge of global public health issues.

Healthcare professionals in Azerbaijani-speaking regions need access to high-quality medical education and training materials in their language. Investigating translation challenges can inform the development of educational resources for medical professionals.

Understanding the regulatory and legal requirements for medical translation in Azerbaijani-speaking regions is vital. Investigating these challenges can help ensure compliance with local laws and regulations. Medical translators working with English-to-Azerbaijani translation need to stay updated on the latest challenges and best practices. Investigating these challenges can contribute to the professional development of medical translators in this specific language pair.

The aim of the study was to analyze problems in medical translation which are experienced by both professional translators and physicians who are non-professional translators involved in the process of doing medical translation.

Investigating challenges in medical translation can play a role in addressing health disparities and promoting health equity. Access to accurate medical information in Azerbaijani is a fundamental component of equitable healthcare access. The 21st century has seen significant advancements in translation technology. Investigating how these technologies can be leveraged to address the challenges of medical translation into Azerbaijani can lead to more efficient and accurate translation processes.

### **The object and subject of the research**

The subject of the topic is "Challenges of Medical Translation." This refers to the main focus or theme of this research. The research will delve into the difficulties and obstacles encountered in the process of translating medical content from one language (English) to another (Azerbaijani), particularly in the context of the 21st century. The object of the topic is the specific context in which these challenges are explored. In this case, the object is "in the 21st Century from English into Azerbaijani." This specifies the time frame (the 21st century) and the direction of translation (from English into Azerbaijani) within which the challenges of medical translation will be examined.

### **The goals and objectives of the research**

Main goal of the research is to comprehensively examine the challenges encountered in the field of medical translation from English into Azerbaijani in the 21st century. Aims include to evaluate the impact of linguistic and cultural differences on the accuracy and effectiveness of medical translation, to assess the role of technology in addressing challenges and improving the quality of medical translation in the digital age, to provide practical insights and recommendations for improving the quality and efficiency of medical translation from English into Azerbaijani. To achieve the research goals and objectives mentioned above, we have five main and broad research questions:

- Research Question 1: What is medical translation and why is it important?
- Research Question 2: What are the key challenges encountered by translators when translating medical content from English into Azerbaijani in the 21st century?
- Research Question 3: To what extent do technological advancements contribute to addressing challenges and improving the quality of medical translations into Azerbaijani?
- Research Question 4: How do cultural differences and nuances affect the medical translation process from English into Azerbaijani?
- Research Question 5: What are the most effective strategies and best practices for enhancing the quality of medical translation from English into Azerbaijani?

**The methods of research** consists of both theoretical and practical aspects, drawing from the expertise of scholars and linguists in the fields of medical translation. This research was conducted using predominantly a qualitative method. The descriptive method involves a systematic and detailed exploration of the challenges faced in medical translation from English into Azerbaijani. using predominantly a qualitative methodological approach to answer the research questions given earlier. Comparative analysis involves a side-by-side examination of English and Azerbaijani medical terminology to identify disparities, translation problems, and cultural differences.

**The scientific novelty of the research work** is the examination of the unique and complex challenges associated with translating medical content from English into Azerbaijani within the context of the 21st century. Medical translation involves highly specialized and technical terminology. The scientific novelty of this research lies in its in-depth exploration of how English medical terminology can be accurately and effectively translated into Azerbaijani, taking into

account the nuances of both languages. Translation is not merely a linguistic exercise; it also involves understanding cultural and contextual nuances. This research delves into the specific cultural and societal aspects of the Azerbaijani context and how they impact the translation of medical content.

**The theoretical significance of the research** lies in its contribution to our understanding of the complexities of linguistic and cultural differences in the context of healthcare communication. By examining the difficulties faced in translating medical content, this research can shed light on the broader issues of cross-cultural communication and the need for linguistic sensitivity in healthcare settings. The study can advance the field of translation studies by addressing specific challenges encountered in medical translation. It can help refine and expand existing translation theories by offering insights into how to adapt linguistic and cultural elements from one language to another, particularly in a domain as critical as healthcare.

**Practical significance of the research** lies on the direct impact on healthcare practitioners, as it can lead to better communication between English-speaking medical professionals and Azerbaijani-speaking patients. This, in turn, can result in improved patient care, diagnosis, and treatment outcomes. Accurate medical translation is crucial for patient safety. Miscommunication in a medical context can lead to misdiagnosis, incorrect treatment, and other serious consequences. Understanding and addressing the challenges in this area can help reduce medical errors and ensure better healthcare outcomes for non-English-speaking patients. The findings of this research can be used to develop training programs for medical interpreters and translators, helping them acquire the necessary skills and knowledge to handle the unique challenges of medical translation effectively. This can lead to a more competent workforce and, subsequently, better healthcare communication.

### **The structure of the dissertation**

This thesis is organized into the following sections: Introduction, three chapters (Chapter I: Literature Review, Chapter II: Methodology, Chapter III: Discussion and Results), and Conclusion, followed by a list of references.

Introduction provides a background to this research and an overview of the research problem, aims, and research questions.

Chapter I presents a detailed review of the literature in relation to the field of medical translation. This includes a brief history of medical translation, its importance, the role of medical translators, and the challenges of medical translation, cultural differences, and terminological problems associated with this field of translation.

Chapter II, "Methodology," discusses the research methods, data collection techniques, data analysis methods, and other methodological choices employed in the study.

Chapter III, "Discussion and Results," Chapter III delves into the specific medical translation challenges.

The conclusion section summarizes the findings related to challenges of medical translation.

Finally, the references section includes a comprehensive list of all sources cited in the thesis.

# **CHAPTER I. LITERATURE REVIEW**

## **1.1 MEDICAL TRANSLATION AND ITS CHALLENGES IN AZERBAIJAN**

### **1.1.1 What is medical translation?**

Defining translation has always been a matter as there are multiple perspectives and theoretical foundations to consider. For example translation can be seen as a means of conveying ideas and messages by rewording or paraphrasing them. This is similar to how we try to explain or express ideas using different words even within the same language. As Bouresk (2000) stated, “Others see translation as an act of transferring messages from a source language into a target language, be in oral or written form, for the sake of establishing equivalence to get the appropriate meaning”.

Bell (1991) defines translation as a task that can be occurred from one language into another that aims at transferring the meaning as accurately as possible taking into account all grammatical and lexical features of the SL by discovery of equivalents in the TL. Bell asserts that “When the translator transfers the meaning, he has to pay attention into all aspects that may affect the meaning in TL taking into account the lexical, grammatical and semantic aspects”.

According to Hudson (1978), medical language is a technical language and can be divided into three sub branches: high, medium and low technical language. High technical language is used in textbooks taught to medical students, medium technical language is used in congresses or prospectuses, and low technical language is used in health-related articles in newspapers or magazines. In line with Hudson’s classification, Newmark (1988) classifies technical language based on medical terminology as academic, professional, and popular. With the first, Latin and Greek terms are predominant; with the second, terms used by professionals; and in the third, the usual terms used by laypeople.

Scientific translation is a special and complex type of translation, it is mainly about translating terms in the fields of science and technology of all kinds; medicine, physics, computer science...etc. from one language into another. Translating scientific texts can be difficult for lay people, especially with the daily change of scientific terms, thus, a high degree of linguistic knowledge, and a practical experience will be needed. As well as a proper understanding of the

subject. Byrne (2006) claims that, scientific translation is much more than just rendering source text language and style, its main concern is to ensure delivering information in a clear, concise and accurate manner. According to Wright (2010), scientific translation is a technique used to convey the meaning of special writings intended for languages intended for special purposes (LSP). Put another way, this form of translation covers texts in the fields of engineering, physics, medicine, and chemistry. It calls for not only a mastery of the source and target texts but also a comprehension of the subject matter, the abilities necessary for translating, and a grasp of the subject matter covered by the book. According to Byrne (2006), scientific translation deals with terms, concepts, and text kinds that are entirely distinct from other types. The most crucial aspect of medical texts is that the scientific translator creates texts that are exactly the same as those written by the target text's author. Scientific translation aims at delivering scientific information accurately and correctly. The information expressed are presented in an easy, proper and effective way. Also, it aims at conveying the original text in a clear and concise manner.

One of the strategies of scientific translation is word coinage. It is a process of word formation, it takes place when the host languages lack natural equivalent of the foreign concepts or terms. For Pinchuck (1997), languages may have gaps at the lexical level, “one language will have no words for a concept expressed in the second language.” This method aims at presenting new terms in the Arabic language via two main processes: derivation and revival. According to Baker, the derivation method makes the meaning easier to be understood by the readers, because they are familiar with the words’ roots which are used to build-up new terms, by adding prefixes, suffixes, infixes and vowels. On the other hand, Ghazala (1995), claimed that derivation cannot be applied in all the scientific terms.

Scientific translation is a serious field of study, its main goal is not just transferring ideas, but to ensure delivering the information correctly and accurately. Scientific translators must have certain qualifications, in order to carry out a good translation of scientific texts, as well as to deliver the exact information. These qualifications are as follows:

- The translator’s style must be clear and concise. According to the biomedical writer Lockyer (2002), “the work of scientific translators is to achieve one primary goal: to write information in a clear, concise and accurate manner”.

- A translator has to be an avid reader. A good translator should be an eager and a keen reader in order to be informed as possible. He/she has to read the latest scientific books to help him/her to become familiar with the terminology and the style of this type of work. Also, to understand the concepts that he/she is supposed to translate in a better way
- Intelligence. A qualified translator has to be able to distinguish between terms, and choose the most appropriate equivalence
- A scientific background. In order to be able to play with the terminology, without changing the meaning of the text, the translator must have a deep knowledge of both SL and TL, as well as getting used to scientific translation.

In other words, the translator needs to conduct research about the source and the target texts, in order to ensure the most appropriate translation. And also to conform to the target audience expectations.

Medical translation is deemed to pose fewer problems than other fields of scientific and technical translation due to its universal nature, plethora of resources, and the availability of a wide array of equivalents (Fischbach, 1986). However, this view is not shared by many scholars, especially those interested in the problems complicating the translation of medical texts into languages like Azerbaijani. Fischbach (1986; 1992) rightly refers to medical translation as one of the oldest fields of scientific translation, as it dates back to the first century. Because of its ancient and rich history, medical translation has gone through many shifts that have taken place over the course of its history. These shifts have had their effect on the language of medicine, which has been and still is, undergoing continuous changes and development.

Medical translation is a specialized branch of translation that deals with the accurate and culturally sensitive conversion of medical content from one language to another. It plays a vital role in facilitating cross-cultural communication within the healthcare sector, ensuring that medical information, documents, and records are comprehensible and accessible to individuals and healthcare professionals who speak different languages. This complex and demanding field encompasses a wide range of medical materials, including patient records, clinical trial documentation, medical research articles, pharmaceutical labels, and patient information leaflets.

Medical translation is perhaps the widespread and ancient form of scientific translation. This is due to the universality of anatomy and physiology (as the human body is largely similar everywhere) the extensive history of medicine and the consistent language used in medical texts particularly in Western societies.

Major scientific journals publish papers in English, and the majority of people in the scientific community speak English. Montgomery (2009) and Kaplan (2001) estimate that 80% and 85%, respectively, of all published scientific publications are authored in English. However, Latin was the primary language of medicine as early as the second century, while Greek continued to be the language of teaching for medical students until the third century, long before English emerged as the universal language of science (Fischbach 1998). Indeed, for more than two millennia, Greek and Latin influenced the rules of scientific writing, encompassing fields beyond medicine (McMorrow 1998).

Translation has been known as a courier of knowledge and science throughout history and across cultures (Fischbach, 1986). This section focuses specifically on the way medical information has been transferred through translation. Historically translation and medicine have gone hand in hand. It goes beyond mere linguistic conversion. It demands a profound understanding of medical concepts, specialized terminology, and a sensitivity to cultural variations. The primary goal of medical translation is to ensure that the content remains not only accurate but also comprehensible to individuals who may not be proficient in the source language. Therefore, medical translators must possess both linguistic proficiency and a deep knowledge of medical science. Karamizadeh and Tabatabaei (2017) define medical translation as "the process of conveying medical information from one language to another, preserving the accuracy of the content and ensuring that the translation is comprehensible and culturally sensitive to the target audience".

The history of medical translation is a journey that spans centuries, reflecting the evolution of medicine, languages, and cultures. It is marked by significant milestones that have shaped the field into what it is today. The history of medical translation is intertwined with the development of medicine and the globalization of healthcare. Throughout the ages, as medical knowledge expanded, the need for translating medical texts emerged. The practice of medical translation has its roots in antiquity. Ancient civilizations, such as the Greeks, Romans, and Arabs, played pivotal

roles in preserving and translating medical knowledge. Since medicine was one of the three oldest recorded fields of science, the genre of medical translation subsequently became one of the oldest and most predominant translation genres in the ancient world (Fischbach, 1986). Some of the greatest contributions to medicine are evident through the work of Hippocrates (c. 460 – c. 377 BC) and Gallen, who succeeded him around 400 years later (Fischbach, 1992). This trove of Greek medical literature was then translated into Latin, Arabic and Hebrew during the 1st century AD to be studied in schools in Alexandria, Pergamum and Rome. Many scholars and physicians contributed to the practice of medical translation during that time, such as Aulus Cornelius Celus, who summarised the whole body of medical literature from Hippocratic to Alexandrian times, and was the first to translate Greek terms into Latin. Despite the ongoing practice of medical translation, Greek still dominated as the language of medical teaching in Rome until the 3rd century AD, when it transitioned into Latin. However, Greek held its place as a medium for teaching and science in other areas such as the Arab world, where it was not replaced by Arabic until the first half of the 8th century by the Umayyads (Baker and Hanna, 2009). Greek medical texts, including works by Hippocrates and Galen, were translated into Latin and Arabic, laying the foundation for the dissemination of medical knowledge across linguistic boundaries. In the ancient world, the translation of medical texts was a vital endeavor. Early translations of works by Greek and Roman physicians, such as Hippocrates and Galen, helped disseminate medical knowledge to different cultures. For example, Hunayn ibn Ishaq, an Arab scholar in the 9th century, played a crucial role in translating Greek medical texts into Arabic, preserving and transmitting valuable medical knowledge. During the Islamic Golden Age, from the 8th to the 13th century, scholars in the Islamic world actively engaged in translating and preserving the medical works of ancient Greece and Rome. Arabs acted as intermediaries in disseminating medical knowledge, including the Greek medical heritage. Translators like Hunayn ibn Ishaq, Al-Razi (Rhazes), and Ibn Sina (Avicenna) made significant contributions to medical translation. Despite the significant role in translation, the Arabic influence on the language of medicine is relatively small, and mainly concerns botanic names or names of herbs. The 13th century marked the beginning of the second wave of translations of Greek manuscripts, which were now rendered directly and more accurately. (Karwacka 2015)

According to McMorrow (1998) “Latin had a life of about 800 years in academic medicine. In the Middle Ages both Latin and Middle English were acceptable in medical communication: Latin in academic instruction and Middle English as the vernacular language. Anglo-Saxon had some basic

medical terminology e.g. head, skull, brain, nose, blood, wound, sore etc. The Renaissance in Europe saw a revival of interest in classical Greek and Roman texts, including those related to medicine. Scholars in Italy and beyond engaged in the translation of medical works into vernacular languages, contributing to the dissemination of medical knowledge among the broader population. The Enlightenment period in the 17th and 18th centuries witnessed a surge in scientific and medical discoveries. This era also saw the translation of groundbreaking medical texts that laid the foundations for modern medicine. Despite the efforts of humanists to translate Greek medical literature into Latin, many Greco-Latin words had transformed into Norman or Middle English and were used by the educated English elite during the 1500s (McMorrow, 1998), after which began the direct borrowing from Greek and Latin in the field of medicine. In the 18th and 19th centuries, medical English started to resemble Latin academic texts in terms of its word formation and grammar. During the 20th century, many Greek and Latin words gradually became obsolete, which led to them being discarded from medical dictionaries. By the middle of the twentieth century, English had replaced the languages that previously dominated the language of medicine (e.g. Arabic, Greek, Latin, etc.) and became the lingua franca of scientific and medical communication (Maher, 1986; Olohan, 2015) With the growth of medical knowledge and the emergence of various medical specializations in the 19th and 20th centuries, the need for specialized medical translation became evident. Medical journals and academic literature were increasingly translated to make this knowledge accessible worldwide. The modern language of medicine employs modern derivatives of Greek and Latin words “with no concern for etymological purity” (McMorrow 1998). The corpus of Greek and Latin terminology is still the base of the contemporary medical language, which also uses new eponyms, acronyms and trade names.

*Changes in medical knowledge and language have overtaken changes in political and social context during the past 200 years. A major change in medical terminology is well under way, one that will not wipe out the classical heritage, but enfold it with many layers of heterogeneous material (McMorrow 1998: 14).*

In the discipline of translation studies, it is crucial to specify the genre of translation to be addressed and investigated in any research. Specifying the genre is important because it is “the main epistemological tool we use to approach the reality we call translation in an attempt to describe certain parts of it that we feel to be especially significant” (Borja et al., 2009, p.57). As such,

researching literature on genre is important in determining the norms, characteristics, and significance of the field of study, as well as acquiring an all-encompassing view of it, and thus formulating appropriate recommendations and strategies for translation (Schaffner, 2000).

Fischbach, for example, refers to medical translation as a variety of scientific translation in two of his articles (Fischbach, 1986; 1992). In another article, however, Fischbach (1962) interchangeably refers to medical translations as scientific and technical translation. Newmark (1987), on the other hand, employs medical terms as examples in a chapter on technical translation in his book 'A Textbook on Translation', rather than directly discussing medical translation. Newmark then proposes the following classification of technical language based on medical terminology: (1) academic, (2) professional, and (3) popular. This entails classifying technical texts according to their target audience. Pilegaard (1997) states that medical texts can be assigned to both the technical and scientific genres, but an evident consensus regarding this issue remains elusive.

Some scholars view medical translation from a more general perspective, stating that the translation of texts written using languages for specific purposes (LSP), which includes the language of medicine, should be classified as technical translation (Wright and Wright, 1993). This classification places the translation of medical texts within the same category as legal, engineering, economic and political texts. Classifying all these texts under the same genre might not be very feasible for translators and researchers because of the wide range of texts included under the same genre, thereby making it difficult to address any problematic, methodological and theoretical aspects of such a wide array of specialised texts. What might apply to legal texts, for example, might not apply to medical texts, especially in terms of phraseology.

Azerbaijan, a nation at the crossroads of Europe and Asia, with a rich tapestry of languages and cultures, presents a unique context for medical translation. In this diverse setting, the role of medical translators is particularly crucial in ensuring that healthcare is accessible and effective for all residents, regardless of their linguistic backgrounds. Azerbaijan boasts linguistic diversity, with Azerbaijani being the official language, but many residents also speak some other languages. This linguistic mosaic necessitates skilled medical translators who can facilitate communication between healthcare providers and patients who may not share a common language.

Consider a scenario in a Baku hospital, where an English-speaking patient seeks medical care. A proficient medical translator, fluent in both Azerbaijani and English, steps in to ensure that the patient's symptoms, medical history, and treatment plan are accurately conveyed. This linguistic bridge is indispensable in delivering quality healthcare. Cultural sensitivity is another dimension

of the role of medical translators in Azerbaijan. The country's rich cultural heritage and traditions underscore the importance of translators who can navigate cultural nuances. They must respect Azerbaijani cultural norms while promoting best practices in healthcare. For example, in rural Azerbaijani communities, traditional herbal remedies and healing practices may be prevalent. Medical translators, aware of these cultural beliefs, work with healthcare providers to find treatment plans that are culturally acceptable and medically sound, fostering trust and cooperation between patients and healthcare professionals.

Azerbaijan's healthcare system is undergoing modernization and expansion, with an increasing focus on telemedicine and access to specialized healthcare services. In this evolving landscape, medical translators in Azerbaijan are instrumental in ensuring that patients in remote regions have access to healthcare expertise and can participate in telemedicine consultations, breaking down geographical barriers to quality care. Collaboration with healthcare professionals is fundamental to the success of medical translation in Azerbaijan. Multidisciplinary teams work together to provide comprehensive and effective healthcare. Medical translators liaise with Azerbaijani doctors, nurses, and support staff to ensure that patients receive right care.

### **1.1.2 Why is medical translation important?**

As discourse around health and well-being relies on languages for its spread and transmission (Susam-Saraeva and Spišiaková, 2021), medical translation plays a pivotal role in sustaining and improving human life. The COVID-19 pandemic highlighted the critical role of medical translation in disseminating accurate and timely information to the public. As the situation rapidly evolved, translation services enabled the effective communication of crucial medical concepts and preventive measures across various languages. This surge in demand for accurate translations of specialized terminology led to the development of glossaries, ensuring that essential information was accessible to a wider audience.

Medical translation is important for a number of reasons, including:

Ensuring patients receive the best possible care. Medical translation is essential for ensuring that patients can communicate effectively with their healthcare providers and understand their medical condition and treatment plan. Without accurate medical translation, patients may not be able to

provide their healthcare providers with a complete medical history, or they may not understand the instructions for taking their medications correctly. This can lead to serious health problems.

Facilitating the dissemination of medical knowledge. Medical translation plays a vital role in the dissemination of medical knowledge around the world. Medical researchers and practitioners from different countries need to be able to communicate with each other and share their findings. Medical translation helps to break down language barriers and make it possible for medical knowledge to be shared more widely.

Promoting public health. Medical translation is also important for promoting public health. Public health information, such as information about vaccines and disease prevention, needs to be translated into multiple languages so that it can reach a wider audience. Medical translation can also be used to translate educational materials for healthcare workers and students.

A number of research studies have highlighted the importance of medical translation. For example, a study by the National Academies of Sciences, Engineering, and Medicine found that "language barriers can have a significant impact on the quality and safety of healthcare." The study also found that "medical translation is essential for ensuring that patients receive the best possible care." Another study, published in the journal *Medical Care*, found that "limited English proficiency is a significant barrier to accessing and receiving high-quality healthcare." The study also found that "medical translation can help to improve communication between patients and healthcare providers and lead to better health outcomes."

In his book *The Translator as Cultural Negotiator*, Lawrence Venuti argues that medical translation is "a matter of life and death." He writes that "medical translators have a responsibility to ensure that their translations are accurate and culturally sensitive, as the lives of patients may depend on it. (Venuti 1995) "Mary Louise Pratt, has written about the importance of medical translation for promoting public health. In her book *Contact Zones: A Study of Border Interactions in Literature and Film*, Pratt writes that "medical translation is essential for ensuring that everyone has access to the information they need to stay healthy." (Mary Loise Pratt 2013)

The significance of medical translation becomes evident in a world where the globalization of healthcare knowledge and the movement of patients across international borders have become commonplace. Patients, regardless of their native language, have the right to access critical medical information, comprehend the implications of their health conditions, and make informed decisions regarding their healthcare. Likewise, healthcare practitioners and researchers need to exchange and comprehend medical knowledge, especially in the context of international collaboration. Medical translation is instrumental in ensuring that healthcare materials, which often consist of intricate scientific and technical terminology, are translated with precision and clarity. The stakes in this field are exceedingly high, as mistranslations can lead to serious medical errors, including misdiagnoses and incorrect treatment.

Medical translation holds paramount importance in the 21st century for various reasons:

- a. **Globalization of Medicine:** In an increasingly interconnected world, medical knowledge is global. Healthcare professionals, researchers, and patients have access to a wealth of international medical information. Medical translation bridges language barriers, enabling individuals to engage with global medical advancements.
- b. **Patient Centered Care:** Effective patient-provider communication is a cornerstone of patient-centered care. Patients must comprehend medical information to participate actively in their healthcare decisions. Translated materials, such as patient information leaflets, ensure that patients can understand their diagnoses, treatment options, and post-operative care instructions.
- c. **Research and Clinical Trials:** International research collaboration is essential in medical science. Accurate translation of research papers, clinical trial protocols, and informed consent documents is crucial for scientific advancement and ethical patient participation.
- d. **Regulatory Compliance:** Many countries, including Azerbaijan, have regulations requiring that medical documents and patient information be available in the official language. Medical translation is necessary to achieve compliance with these regulations while maintaining the quality of translations.
- e. **Technological Integration:** The 21st century has seen a surge in the integration of technology into medical practices. Electronic health records (EHRs), telemedicine, and medical websites have become commonplace. Medical translation must adapt to these digital advancements, ensuring that medical data and communication are available in multiple languages.

Examples of the significance of medical translation can be found in the translation of COVID-19 information. During the pandemic, accurate translations of guidelines, treatment protocols, and public health information were vital to reach diverse populations worldwide. For example, translating vaccine information into multiple languages ensured that all individuals, regardless of their language proficiency, could access and understand the importance of vaccination. Medical translation is a vital discipline that connects the global healthcare community, supports patient engagement, facilitates research collaboration, ensures regulatory compliance, and promotes effective healthcare communication. As the field continues to evolve, it remains at the intersection of linguistic precision, medical knowledge, and cultural sensitivity, serving as a bridge for equitable access to healthcare information.

Medical translation is a highly specialized field, and its complexities arise from the unique challenges it poses. Medical texts are replete with complex and highly specialized terminology. Translators must not only understand these terms but also ensure their accurate translation. For instance, translating "electroencephalogram" into Azerbaijani requires a deep knowledge of neurological concepts and linguistic precision. Medical translators often handle sensitive and confidential information. Ethical considerations, such as patient privacy and informed consent, are integral to their work. Translators must navigate these ethical complexities while preserving patient confidentiality.

### **1.1.3 The role of medical translators**

In translation there is often an equal relationship between the text author and its intended audience. In words it involves expert to expert communication. However over decades there has been a growing demand from everyday people who wish to understand documents such, as tax returns, utility bills, pension schemes and especially information related to their health.

In the 1970s there was a rise in the Plain Language movement and society in general became less authoritative. The idea that texts directed towards non experts should be understandable gained support. Modern health communication emphasizes concepts like patient centeredness and patient empowerment as essential. Patient centeredness emerged in the 1960s as a new approach to medical thinking focusing on the psychosocial aspects. As Holmström & Röing (2009) stated “It required healthcare professionals to have a view of their patients and take into account their needs and preferences when planning medical care”.

In contrast patient empowerment originated from Paulo Freires theories of the 1960s and 1970s rather than within healthcare itself. The core meaning of empowerment is granting individual's power enabling them to make well informed decisions regarding their own health. As stated in the WHO (1998), "Empowerment is a process through which people gain greater control, over decisions and actions affecting their health".

According to Newmark (1979), "The aim of the medical translator should be to create a target text that can provide the same cognitive impression that the source text creates on the reader". The primary aim of the translator is to remain faithful to the content of the source text, while the secondary aim is to create a natural and fluent text for the target audience. A thorough understanding of medical terminology in two or more languages is necessary for working as a translator in the medical field. Because medical terminology is unfamiliar to people outside of a certain field, being bilingual does not guarantee that a person will be able to translate it from one language to another. For instance, even a person with training in cardiology might not be sufficiently proficient in the terminology used in the oncology area, particularly when speaking in a foreign language.

Three qualities a competent medical translator needs to have are as follows:

1. Possess thorough understanding and ability for reasoning about the medical subject being translated
2. Possess the ability to read and comprehend the original language fluently in order to comprehend the intended meaning of a given material.
3. Possess the ability to precisely convey the translation's meaning in the target language

Since understanding particular phrasing in various languages is directly related to each of the three qualities, they are all equally vital. Failure to execute any one of the three skills will eventually hinder the translation process.

The role of medical translators in Azerbaijan is ever-evolving, adapting to the changing healthcare landscape. As the nation's healthcare sector continues to advance, the importance of skilled medical translators who can navigate linguistic diversity and cultural sensitivity remains paramount. Medical translators play a vital role in the healthcare system. They are responsible for translating medical information from one language to another, ensuring that patients and healthcare providers can communicate effectively. Medical translators must have a deep understanding of both the source and target languages, as well as medical terminology and cultural nuances. Medical

translators work in a variety of settings, including hospitals, clinics, medical research facilities, and pharmaceutical companies. They may be called upon to translate a wide range of medical documents, including patient records, medical reports, clinical trials data, and pharmaceutical product labels.

One of the most important roles of medical translators is to facilitate communication between patients and healthcare providers. When a patient does not speak the same language as their healthcare provider, a medical translator can help to ensure that the patient understands their medical condition and treatment plan. This is essential for ensuring that patients receive the best possible care. Medical translators also play a vital role in the dissemination of medical knowledge. Medical research and practitioners from different countries need to be able to communicate with each other and share their findings. Medical translation helps to break down language barriers and make it possible for medical knowledge to be shared more widely. Medical translation is important for promoting public health. Public health information, such as information about vaccines and disease prevention, needs to be translated into multiple languages so that it can reach a wider audience. Medical translation can also be used to translate educational materials for healthcare workers and students.

Medical translation is an essential service that helps to ensure that everyone has access to high-quality healthcare and medical information. Medical translators play a vital role in breaking down language barriers and promoting public health.

## **1.2. Challenges of Medical Translation in Azerbaijan in the 21<sup>st</sup> century**

### **1.2.1. What are the key challenges?**

While the importance of medical translation is undeniable, it is also a field laden with numerous challenges. Medical translation in Azerbaijan, particularly from English into Azerbaijani, also presents a range of multifaceted challenges. This section delves into the specific challenges encountered in the field of medical translation within the Azerbaijani context, while drawing upon relevant research works and authors in this field. These challenges are multifaceted and demand an intricate understanding of both the source and target languages, the specialized medical

terminology, and the cultural nuances inherent in healthcare communication. Linguistic accuracy is one of the primary challenges in medical translation. Medical texts are replete with complex medical jargon, anatomical terms, and drug names, each requiring an exact and unambiguous translation. The diversity of the source text's language, the linguistic variations across different regions, and the evolving nature of medical terminology add layers of complexity.

Cultural sensitivity is another substantial challenge in medical translation. Cultural norms, beliefs, and perceptions related to health and illness can substantially affect how medical information is received and understood. Cultural sensitivity is another fundamental challenge in medical translation within Azerbaijan. The Azerbaijani healthcare landscape is enriched by its cultural diversity, influenced by various ethnic groups and historical traditions. Understanding and respecting these cultural nuances are critical for effective healthcare communication. Research by Schon, Stericker, and Witt (2018) highlights the importance of cultural sensitivity in medical translation. They underscore the significance of acknowledging patients' cultural beliefs and practices and adapting translations accordingly. Failure to consider these cultural factors can result in miscommunication, lack of trust, and suboptimal healthcare outcomes (Schon, Stericker, & Witt, 2018). Cultural aspects extend beyond patient communication. Medical translators also need to be aware of cultural variations in medical practices and healthcare systems. In their study, Bazrafkan and Rashidian (2016) emphasized the significance of understanding the cultural underpinnings of healthcare delivery to provide culturally competent translations. Translators must navigate these cultural nuances to ensure that the translation is not only accurate but also culturally appropriate.

One of the foremost challenges in medical translation in Azerbaijan pertains to linguistic complexity. Azerbaijani, as a Turkic language, poses distinct linguistic characteristics that require precision and clarity when translating highly specialized medical terminology. The field of medicine is replete with complex terminology, much of which has Latin or Greek origins. The translation of these terms demands not only a profound understanding of medical concepts but also linguistic competence. Research by Karamizadeh and Tabatabaei (2017) emphasizes the significance of precision in medical translation. They argue that even minor mistranslations can have substantial consequences in healthcare settings, potentially leading to misunderstandings, misdiagnoses, and incorrect treatment plans. Hence, a deep linguistic understanding and

proficiency in both the source and target languages are crucial for medical translators (Karamizadeh & Tabatabaei, 2017).

In the 21st century, medical translation confronts additional challenges associated with technology and digital platforms. The integration of machine translation, computer-assisted tools, and electronic health records presents both opportunities and challenges, as healthcare organizations strive to balance efficiency with accuracy. The 21st century has witnessed a transformation in the healthcare sector, driven by technological advancements. Electronic health records (EHRs), telemedicine, and digital healthcare platforms are increasingly prevalent. While technology offers remarkable opportunities, it also poses unique challenges for medical translation in Azerbaijan. Research by Rajendram, Ravindran, and Ariffin (2018) emphasizes the integration of technology in healthcare. They note the growing importance of EHRs and telemedicine platforms in modern healthcare systems. Medical translation must adapt to this digital landscape, incorporating medical data and communication into the translation process. Failure to do so can result in inefficiencies and barriers in healthcare delivery. Development of machine translation and translation memory tools presents both opportunities and challenges. These technologies offer the potential for increased translation efficiency, but they must be carefully integrated into the translation process to ensure accuracy and cultural sensitivity, as underscored by the research by Zhang, Liu, and Yu (2021).

Another linguistic challenge arises from the continuous evolution of medical terminology. As noted by Kiraly, Pesznyak, and Perez-Gonzalez, medical language is dynamic, continually adapting to scientific advancements and clinical innovations. Translators must keep pace with these changes, making ongoing professional development an essential aspect of their work (Kiraly, Pesznyak, & Perez-Gonzalez, 2019).

The Azerbaijani healthcare sector is subject to regulatory requirements that mandate the use of Azerbaijani language in medical documents and patient information. Adherence to these regulations is a critical concern for healthcare institutions, and it poses specific challenges for medical translators. Research conducted by Alkassar and Othman (2016) highlights the importance of regulatory compliance in the field of medical translation. Their study, focusing on language regulations in healthcare, underscores the legal and ethical implications of providing medical

information in the required language. Failure to comply with these regulations can have legal consequences and jeopardize patient safety. Achieving regulatory compliance while maintaining the quality and accuracy of translations requires meticulous attention to detail. Medical translators must navigate the delicate balance between legal requirements and linguistic precision.

In the 21st century, medical translation in Azerbaijan stands at the intersection of linguistic precision, cultural sensitivity, regulatory compliance, and technological integration. These challenges require innovative solutions to ensure the highest standards of translation, thereby enhancing healthcare communication and patient safety in Azerbaijani-speaking regions.

In the context of medical translation in Azerbaijan, as in many other countries, ethical considerations and patient privacy are paramount. Translators often handle highly sensitive and confidential medical information, which places a significant responsibility on them to maintain the highest ethical standards. Research by Solberg and Nguyen (2017) emphasizes the importance of ethical guidelines in medical translation. These guidelines provide a framework for ethical behavior and confidentiality, safeguarding patient privacy. Translators must be aware of and adhere to these ethical principles to protect patient rights and maintain trust in the healthcare system. Respecting patient confidentiality and privacy is enshrined in international healthcare standards, including the Health Insurance Portability and Accountability Act (HIPAA) in the United States. Translators operating in international contexts, where Azerbaijani-speaking patients may seek healthcare, need to be knowledgeable about such standards and their implications for medical translation (HIPAA, n.d.).

Azerbaijan, like many countries, faces a shortage of specialized medical translators. The complex nature of medical texts requires translators with not only linguistic competence but also a deep understanding of medical concepts. The scarcity of professionals with both these qualifications can hinder the quality and efficiency of medical translation. Addressing the challenges of a limited pool of specialized medical translators is an ongoing concern that necessitates investments in professional development, training, and academic programs. Such initiatives can contribute to a more robust and skilled workforce in the field of medical translation.

Maintaining quality and consistency in medical translation is an ongoing challenge. Healthcare organizations and translation agencies must implement rigorous quality assurance processes to

ensure that translations are not only accurate but also consistent across different documents and contexts. Quality control is very important in medical translation. Medical translations can have life-altering consequences, underscoring the need for meticulous quality assurance to minimize errors and ambiguities. Quality control encompasses aspects such as terminology management, translation memory, and glossaries. These tools and practices aid in maintaining consistency and precision across a range of medical documents and specialties. The challenges of medical translation in Azerbaijan in the 21st century are multifaceted and demand innovative solutions. Linguistic accuracy, cultural sensitivity, regulatory compliance, technological integration, ethical considerations, the shortage of specialized translators, and quality control are among the key challenges faced by professionals in the field. As the Azerbaijani healthcare system continues to evolve and integrate with global healthcare practices, addressing these challenges is of paramount importance for ensuring accurate, culturally sensitive, and patient-centered medical communication.

### **1.2.2. Cultural differences and nuances in the medical translation process**

In this age of global scientific advancements, the world employs science and technology to fight wars, pandemics and natural disasters. For that reason, the thirst for knowledge and information reaches far beyond linguistic borders which has heightened the need for translation and has given rise to research in the fields of scientific and technical translation. A great number of publications are focused on the field of translation studies, along with the emergence of an increasing number of translation and translation studies university courses (Valentino, 2013).

The practice of translation has also been undergoing vast growth to accommodate the increasing demands of the market for translators and interpreters. Medical translation is one among those fields that have received growing interest and demand. In addition to being a basic ethical human right for individuals to fully understand medical information related to their own health, the awareness of the general public in recent years to health and medical issues has significantly grown, which has increased the need for medical information addressing non-medical experts (laypeople). The emergence of this new type of audience of medical translation has consequently shifted the focus of many researchers to investigate the strategies that ensure an adequate transfer of knowledge to this specific type of audience. (Hasan Alhussaini, 2021)

Cultural differences and nuances play a pivotal role in the medical translation process from English into Azerbaijani. Understanding and navigating these intricacies are essential for ensuring that medical translations are not only accurate but also culturally sensitive, aligning with the beliefs, values, and practices of Azerbaijani-speaking patients. This section explores the impact of cultural differences and nuances on medical translation, drawing upon insights from research by Schon, Stericker, and Witt (2018).

Cultural differences between ST and TL pose a major challenge to translators. Cultural challenge such as, a cultural expression that is appropriate in SL is not appropriate in the TL is a common one. Although a translator should be faithful to the style of ST, yet distinction must be established between cultures to avoid producing a translation that might be inappropriate for the target audience. House introduced 'cultural filter' as "a means of capturing socio-cultural differences in expectation norms and stylistic conventions between source and target linguistic cultural communities" (House 2001; 142)

Cultural sensitivity is a foundational aspect of medical translation, especially in a linguistically diverse country like Azerbaijan. It involves not only linguistic competence but also an awareness of the cultural context in which medical information is conveyed. The significance of cultural sensitivity in medical translation has been underscored in the research of Schon, Stericker, and Witt (2018). It also highlights the importance of recognizing patients' cultural beliefs and practices in the medical translation process. For example, the Azerbaijani culture places a strong emphasis on family and community support, and these cultural values can influence the way healthcare information is received and acted upon. Translators must be aware of such nuances to ensure that the translation respects the cultural values of Azerbaijani patients.

Bazrafkan and Rashidian (2016) emphasize the significance of cultural competence in medical translation. Cultural competence involves not only understanding cultural differences but also adapting translations to align with the cultural beliefs and practices of the target audience. For instance, they discuss the importance of using culturally appropriate metaphors and analogies in medical translation. In the context of explaining medical conditions and treatment options, using analogies that resonate with Azerbaijani cultural references can enhance understanding and patient

engagement. Incorporating cultural competence in medical translation involves ongoing training and education for translators. Understanding cultural nuances and adapting translations to reflect them are skills that need to be cultivated and honed. This also necessitates collaboration between healthcare providers, translators, and cultural experts to ensure that medical translations are culturally sensitive and accurate.

To illustrate the practical implications of cultural differences in medical translation, let's consider a case study involving the translation of a patient information leaflet from English into Azerbaijani. The leaflet contains instructions for post-operative care after cardiac surgery.

**Cultural Nuance 1: Communication Styles.** In English-speaking cultures, medical information leaflets tend to be straightforward and fact-based. However, in Azerbaijani culture, communication often involves politeness and indirectness. In this case, the translator must adapt the leaflet to convey the necessary medical instructions while also incorporating elements of politeness. For example, the use of phrases like "we kindly advise you to" and "you might consider" can reflect the cultural expectation of polite communication.

**Cultural Nuance 2: Beliefs about Illness and Recovery.** Azerbaijani culture places a strong emphasis on the importance of emotional support and maintaining hope during illness and recovery. The translation should incorporate messages of encouragement and hope. For instance, the translated leaflet may include statements such as "With the support of your family, you can overcome this challenge" to align with the cultural belief in the healing power of emotional support.

**Cultural Nuance 3: Privacy and Family Involvement.** The leaflet should acknowledge the role of family in the patient's recovery process. Phrases like "Your family can help ensure you follow your post-operative instructions" can emphasize the cultural norm of family involvement while respecting patient privacy.

To navigate the complexities of cultural differences in medical translation, translators and healthcare institutions should consider several best practices. Translators should undergo cultural competency training to gain a deep understanding of the cultural norms and values of Azerbaijani-speaking patients. This training equips them to recognize cultural nuances and adapt translations accordingly. Collaboration between healthcare providers, translators, and cultural experts is pivotal. This collaborative approach ensures that translations accurately reflect the cultural context and meet the specific needs of patients from diverse cultural backgrounds. To verify the cultural

appropriateness of translations, it's essential to engage native Azerbaijani speakers who can validate the content for linguistic and cultural accuracy. An iterative feedback process involving healthcare providers and patients can enhance the quality of medical translations. This approach allows for continuous improvement and refinement of translated materials based on real-world patient experiences.

Venuti summarizes cultural issues and the approach to tackle them when declared, “The very impulse to seek a community abroad suggests that the translator wishes to extend or complete a particular domestic situation, to compensate for a defect in the translating language and literature, in the translating culture” (Venuti 2000; 469). Recognizing that not all patients from different cultural backgrounds are the same, translation efforts should be tailored to individual patient preferences and needs, considering factors such as age, education, and personal beliefs. Maintaining a repository of culturally sensitive language resources, including medical terminology and idiomatic expressions, is essential for ensuring that translations are in line with Azerbaijani cultural norms. Translators should commit to ongoing professional development, staying informed about the latest developments in both the medical field and the cultural context of Azerbaijani-speaking patients. These best practices contribute to the creation of medical translations that are not only accurate but also culturally competent, enabling healthcare providers to offer patient-centered care.

As the field of medical translation continues to evolve, there are several areas where further research is warranted. Further studies could explore the impact of cultural competence training on the quality and effectiveness of medical translations, including patient outcomes and satisfaction. Research can delve deeper into the linguistic and cultural variations among different ethnic groups in Azerbaijan and how these nuances affect medical translation. The role of technology, such as machine translation and artificial intelligence, in addressing cultural differences and improving cultural competence in medical translation is a promising area for investigation. Research could examine the specific challenges and strategies for culturally adapting medical translations in the context of mental health, where cultural sensitivity is particularly critical. Studies focusing on the impact of culturally competent medical translations on patient-centered outcomes, such as adherence to treatment plans and patient satisfaction, can provide valuable insights. Incorporating

the results of such research into the practice of medical translation can lead to more effective and culturally sensitive healthcare communication in Azerbaijani-speaking regions.

### **1.2.3. Terminology issues**

Medicine is a specialty subject that largely focuses on protecting health and treating patients when they get ill. It is a profession that is always evolving and includes technological and scientific investigations to cure, alleviate, or prevent disease. Globally, there is a close oversight of medical research and advancements. The current worldwide health crisis has demonstrated how closely society as a whole follows issues pertaining to health. We had to be educated since we were faced with unusual phrases and notions related to a pandemic. We observed the value of translation in sharing knowledge about advancements in health. It is crucial to educate the people about health-related issues everywhere. In order to do this, national health organizations work to educate and increase public awareness via a variety of media, including printed publications, websites, and educational films. Because the general population is the intended audience, the medical language is simple and easy to grasp, rather than complex and heavily reliant on foreign medical terminology. In this sense, the translation should maintain the original text's ease of comprehension. Medical texts are content-oriented texts meant to inform the reader, regardless of whether they are written by specialists for experts or for the general public. Because of this, the text's content must be understandable and straightforward, and it must be conveyed in the target language in the most genuine and accurate way possible. The significance of the original text's nature, purpose, and intended audience is demonstrated by this criteria. Understanding is crucial when translating.

‘There is no recognised discipline called medical linguistics, but perhaps there ought to be one. The language of medicine offers intriguing challenges both to medical historians and to linguists’ (Wulff 2004), as well as to medical translators (Karwacka 2015). The roots of written medical language can be traced back to the 5th century BC (Dirckx 2005); the spoken language of medicine has naturally existed ever since the establishment of the medical profession itself. However, medical English or English for Medical Purposes as a university course and an academic field of research can only be traced back to very recent times (Grego 2014).

Despite the increasing attention in recent years on the functionality of the language used in translation to ensure an effective and efficient transfer of medical knowledge, some medical texts targeting laypeople still carry many ambiguities and complexities (Askehave and Zethsen, 2002).

This has motivated many to investigate the means of producing user-friendly translations of medical texts, focusing mainly on the translation of medical terms. According to Raynor (2007), making medical terms understandable to patients is a challenging task that requires testing methods to ensure the accessibility of such terms to general readers.

Medical terminology is a complex and constantly evolving language that poses unique challenges for both medical professionals and translators. The inherent precision and specificity of medical terms, coupled with the rapid advancement of medical science, make it difficult to keep up with the ever-expanding vocabulary. Additionally, the use of eponyms, abbreviations, and polysemous terms further complicates the understanding and translation of medical information. Davies (1985) defines medical terminology as “the study of words used to communicate facts and ideas particular to medicine; it is chiefly concerned with the present use and meaning of such words” (p.13)

Medical terminology is one of the most challenging aspects of translating medical and healthcare texts, especially since a small change in language can have a big impact on the treatment a patient gets. Words frequently have no direct association with the target language because medical terminology is typically related to the source language. When this occurs, the translator is forced to make some challenging decisions in order to determine which word to employ in lieu of the original term. The proper usage of terminology plays a crucial role in effective communication within monolingual and multilingual healthcare communities. Medical terminology varies not across different languages but also within registers and communication channels. There are common characteristics observed in medical terminology across languages, such as the influence of Latin and Greek the use of affixation (e.g., dermatitis, conjunctivitis, gastritis) eponymy (e.g. Parkinsons disease, Alzheimers disease) and the presence of word pairs with different origins used in different contexts like swelling-edema or begin-initiate (Salager, 1983). Translators and writers working in the field of medicine often face challenges when adapting their choice of terms to specific genres and registers. Salager (1983) categorized medical terms into three groups; Basic English, fundamental medical English and specialized medical English. In a study by Fage Butler and Nisbeth Jensen (2016) technical terms were initially divided into two categories; technical terms defined by dictionaries and those defined by context; however this categorization was later expanded to include five categories; dictionary defined medical terms, co text defined medical terms initialisms used in medicine brand names, for medications and colloquial technical terms.

In each of these divisions the differences between laypeople and experts serve as factors that separate them. These divisions account for the use of register units in medical communication. The classifications vary because they have purposes and are utilized in different sectors of healthcare. However it is important for them to be compatible so that data can be transferred between systems. As Fung (2007) stated “This calls for the alignment of terminologies and classifications to ensure information exchange, which is both necessary and challenging”. International terminology systems and classifications are translated into languages. The translation guidelines for the ICNP emphasize achieving cultural equivalence of concepts rather than literal word for word or etymological equivalence. Translators are encouraged to avoid using terms with multiple meanings (ICN 2008) which means steering clear of polysemous and synonymous terms. Consistent, clear and unambiguous terminology plays a role in enhancing the effectiveness of health information exchange making its appropriate use, in translation a critical quality factor.

According to Fogelberg & Petersson, “Primarily, there are three categories of medical terms, each used within its specific group of people for communication, information and documentation”.

- Scientific medical terms. These are used by professionals in the field.
- General medical terms. These are used when communicating between staff and patients.
- Medical terms. These are often jargon specific, to the profession and used among healthcare professionals.

Newmark (1988) defines this classification like this:

- Academic: transferred Latin and Greek terms which are associated with academic papers.
- Professionals: the terms used by experts in formal situation.
- Popular : the terms used by lay people

Factors contributing to the complexity of medical terminology include:

- Precision and Specificity: Medical terms are designed to convey precise and specific meanings, allowing for accurate diagnosis, treatment, and communication among healthcare professionals. This precision often leads to lengthy and complex terms that can be difficult to understand for non-medical professionals.
- Rapid Advancement of Medical Science: The rapid pace of medical advancements results in the continuous creation of new medical terms, making it challenging for both medical professionals and translators to stay up-to-date with the latest vocabulary.

The complexity of medical terminology can have several implications, including:

- Patients may struggle to understand medical information if it is presented in overly complex language. This can lead to confusion, anxiety, and non-compliance with treatment plans.
- Translators may face challenges in accurately translating complex medical terms, potentially leading to misinterpretations and inaccuracies in medical documentation and communication.
- The use of complex medical jargon can create communication barriers between healthcare providers and patients, hindering effective patient care.

In the century significant breakthroughs were achieved in the field of natural sciences particularly in medicine. The discovery of blood groups made it possible to perform transfusions. Making it possible saved many lives. Thanks to the introduction of medications like penicillin and tetracycline as well as advancements in vaccination numerous diseases could be effectively treated or even eliminated altogether. These are the great achievements for humanity. Clinical medicine witnessed the emergence of specialized branches such as endocrinology, gastroenterology, haematology, nephrology, oncology, pulmonology, rheumatology and more. All these advancements were made possible by the progress in science and technology. Inventive diagnostic devices and techniques were developed including computed tomography (CT), sonography (ultrasound), mammography (breast imaging), laparoscope (abdominal examination tool), endoscope (visualization tool), colonoscopy (colorectal examination technique), and magnetic resonance imaging (MRI). Alongside these developments came the emergence of diseases such as AIDS, BSE (mad cow disease) avian flu (H5N1 virus) swine flu (H1N1 virus) and Ebola. It became necessary to name these phenomena accurately while documenting and disseminating information, about them among both scientists and the general public.

The creation of terms in various fields of medicine is an important consideration as these terms eventually become part of everyday language. There exists a connection between the language used in general communication and the language employed in scientific discourse. In fact three quarters of all written and printed materials in a nation's general language are comprised of scientific terminology. As Poštolková, Roudný, & Tejnor (1983) stated "While the general language caters to all users the language of science necessitates a level of scientific education as these terms serve as names, for specific concepts and their meaning is understood by experts alone".

Medical translation is a specialized field that requires a deep understanding of medical terminology. This terminology is built upon word elements, including word roots, prefixes, and suffixes. By understanding these elements, medical translators can accurately translate complex medical terms and ensure that the intended medical information is conveyed effectively.

**Word Roots:** The core element of a medical term is the word root, which carries its primary meaning. The root is the main part of the term, and it provides the core meaning of the term.

Hutton (2006) says that “roots are basic medical words. More are derived from early Greek and Roman (Latin) words. Others have their origins in Arabic, Anglo-Saxon and German”. (p.2)

Many medical terms are derived from Latin or Greek languages, and some roots have the same meaning across both languages. Latin roots are often used to create words describing anatomical structures, while Greek roots are used to create words describing diseases, treatments, or conditions. For example, the Greek root "nephr" is used in terms related to kidney diseases, while the Latin root "ren" describes the anatomical structure of the kidney. Sometimes, a word root is combined with a vowel to create a combining form.

**Suffixes:** Suffixes are word elements added to the end of a word, altering its meaning. In medical terminology, suffixes often indicate pathology, surgical procedures, or symptoms. Examples of suffixes include:

"-itis," denoting inflammation (e.g., "gastritis" - inflammation of the stomach).

"-megaly," indicating enlargement (e.g., "gastromegaly" - enlargement of the stomach).

**Prefixes:** Prefixes are word elements added to the beginning of a word root, changing the word's meaning. Typically, prefixes convey information related to position, direction, or negation. For instance, the prefix "hyper-" signifies excess or abnormality, as seen in the term "hyperthermia," which refers to a condition of excessive heat.

Gyls and Wedding offer a structured approach to defining medical words, which can be beneficial for medical translators. This approach involves three steps:

**Identify the Word Root:** Determine the primary word root of the medical term. This root holds the core meaning of the term and is often derived from Latin or Greek.

**Analyze Suffixes:** Examine any suffixes present in the term. Suffixes modify the word's meaning by indicating aspects like pathology, surgical procedures, or symptoms.

**Consider Prefixes:** If there are prefixes in the term, take them into account. Prefixes provide additional context by specifying position, direction, or negation. By following these steps, medical translators can systematically break down complex medical terms, making it easier to accurately translate them and ensure that the intended medical information is conveyed effectively. This approach is essential for maintaining precision and clarity in medical translation.

Terms containing Latin suffix *-itis* are often problematic. There are not direct translations for these terms. If translators try to replace the terms with the words in Azerbaijani language this can cause some misunderstandings. Let us have a look some examples:

English term	Correct translation
Sinusitis	<i>Sinuzit</i>
Gastritis	<i>Qastrit</i>
Laryngitis	<i>Larinqit</i>
Cystitis	<i>Sistit</i>

There is a double problem with a term “stomatitis”. Firstly, it ought to be translated as “*stomatit*”. Secondly, stoma is not associated with a stomach but with an oral cavity. Therefore stomatitis may be confusing for less experienced translators.

English term	Correct translation
Stomatitis	<i>Stomatit</i>

**Derivation.** Words that are created by the process of word-building known as affixation or derivation and comprise of a root and one or more affixes are referred to as derived words or derivatives. As seen by the following examples, derived medical phrases can have a prefix, one or more word roots, and a suffix in different combinations:

Myocardium = *myo-* (prefix) + *card(ium)* (root)  
 Endocarditis = *endo-* (prefix) + *card* (root) + *-itis* (suffix)

Adenoma = *aden(o)* (root) + *-oma* (suffix)

There are words that can be easily understood by breaking them down into their constituent parts. For instance the Greek prefix 'di' and the Latin prefix 'bi' both mean 'two', 'twice' or 'double' in words like diploid, dicentric, diphasic, bilateral, bipolar, diplopia and diglossia. As Goumovskaya stated "By recognizing these components and the basic terms they come from we can make connections that're easily recognizable and often eliminate the need for medical students and doctors to memorize roots". Derivational affixes are used to create words and change the grammatical class of the root word they attach to. For example *hematology* (noun), *hematologist* (noun) and *hematologic (al)* (adjective). Etymologically speaking affixes are classified into two groups; native and borrowed.

**Compounds.** The second most productive type of word-formation is compounding. A compound word is a fixed expression made up of more than one word, e.g. human being, blood donor, hay fever or Black Death. While in German compound words are easily recognisable because they are always written together, in English writing of compound words varies. Compound words may be written:

- as two/three words: *blood pressure, blood group, heart attack, central nervous system;*
- with a hyphen: *life-span, collar-bone, birth-control;*
- as one word: *gallstone, haemophilia, leucocytopenia, pseudopolycytemia.*

There are no strict rules for writing the compound word. Occasionally some terms are written with a hyphen, occasionally as two separate words or one word, e.g. life span – life-span or gall bladder – gallbladder (Peprník 1992:13) Composition seems to be older than derivation from a diachronic viewpoint because word-forming affixes developed from independent words. A similar process can be seen nowadays in the development of prefixoids (pseudoprefixes) and suffixoids (pseudosuffixes) (Poštolková, Roudný and Tejnor 1983: 42), e.g. *myo-*, *arthro-*, *haemo-/haemato-*, *adipo-*, *hepato-*, *onco-*, *patho-*, *-aemia*, *-itis*, *-logy*, *-tomy*, *-pathy*, *-cyte*, *-algia*, *-ectomy* or *-scope*. Each of these pseudoaffixes hides a certain meaning, e.g. *myo-* means 'muscle', *arthro* – 'joint', *haemo-/haemato* – 'blood', *-aemia* – 'blood', *-itis* – 'inflammation' and *-logy* – 'science', but they are not used as independent words. They have been developed artificially from Greek and Latin word roots for scientific purposes.

**Eponyms** constitute a considerable portion of medical terminology. Newmark defines an eponym as “any word that is identical with or derived from a proper name which gives it a related sense (Newmark 1981:198).” Eponyms can pose significant challenges for translation from English into other languages including Azerbaijani. Eponyms are medical terms named after individuals, typically the scientists, physicians, or researchers who discovered or described a particular medical condition, procedure, or device. These terms reflect the history of medicine and are deeply ingrained in the English medical lexicon. They include:

- 1) Names of anatomical parts, e.g. Fallopian tubes, Adam’s apple
- 2) Names of diseases, Parkinson’s disease, Alzheimer’s disease
- 3) Signs and symptoms e.g. Babinski sign
- 4) Fractures e.g. Jefferson Fracture
- 5) Medical devices e.g. Bard-Parker scalpel

Eponyms are frequently derived from the names of researchers, but may also be derived from the names of celebrity patients, e.g. Lou Gehrig disease, a common name for amyotrophic lateral sclerosis (Walling, 1999), fictitious characters, e.g. Othello’s syndrome, or geographical places, e.g. Lyme disease. When translating eponyms into Azerbaijani, several difficulties can arise, including linguistic adaptation, maintaining the original names, and ensuring clarity for non-specialist readers. Problem is that the correspondence between eponymous terms and their equivalents does not necessarily mean that both source and target terms will be eponymous.

**Acronyms and abbreviations** are prevalent in medical terminology, serving as concise representations of complex medical terms and concepts. While these linguistic tools can enhance communication efficiency, they pose significant challenges for medical translators. An abbreviation is a shortened form of a word or phrase. There are many ways of forming abbreviations. Usually, but not always, they consist of a letter or group of letters taken from a word or phrase. Abbreviations occur in written language and their spoken varieties may be only graphic (g – gram, h – hour), both graphic and phonetic (G.P. – general practitioner) or acronymic ([eits] AIDS, which developed from its initialisation). According to Crystal (1995), acronyms are initialisms pronounced as single words, like SARS (Severe Acute Respiratory Syndrome). Sometimes an acronym can be formed from parts of words, as in Ameslan (American Sign Language). Normally acronyms and initialisms are regarded as subgroups of abbreviations: “Some

linguists do not recognise a sharp distinction between acronyms and initialisms, but use the former term for both” (Crystal 1995: 120).

Translating acronyms and abbreviations requires a deep understanding of medical terminology, contextual awareness, and the ability to balance precision with clarity. With English having the status of the lingua franca of medicine, English acronyms enter other languages and are used both by the medical professionals and patients, especially if no native acronym is commonly used in the local language. Acronyms and abbreviations may not always have direct equivalents in the target language. In such cases, translators must carefully consider the context and intended meaning of the acronym or abbreviation to determine the most appropriate translation. This may involve using longer, more descriptive terms or providing explanatory phrases to ensure clarity. The primary challenges associated with translating acronyms and abbreviations in medical translation stem from their inherent lack of specificity and their potential for ambiguity. Acronyms and abbreviations often represent multiple terms or concepts, depending on the context in which they are used. For instance, the acronym "CHF" can refer to "*congestive heart failure*" or "*chronic heart failure*". In cases where an acronym or abbreviation does not have a direct equivalent in the target language, translators must consider cultural equivalents that convey the same meaning while being appropriate for the target audience. This may involve using local terminology or adopting culturally relevant phrases.

**Didactic aspects.** An important goal of teaching medical vocabulary is to teach the tools of word analysis that will enable understanding of complex terminology. ‘Medical terms are very much like individual jigsaw puzzles. They are constructed of small pieces that make each word unique, but the pieces can be used in different combinations in other words as well’ (Chabner 1996: 1).

One of the steps towards accessing up to date information is mastering basic medical terminology in English. To simplify the study of medical terminology and make it more effective it is crucial to understand some fundamental rules of word analysis and grasp the meanings of individual prefixes and suffixes instead of memorizing every single entry, in a medical dictionary.

One effective way to expedite the learning process of terms is to organize them into meaningful categories. For example terms that describe substances found in the body — body fluids or those related to colors can be grouped together.

Body substances: *adip(o)/lip(o)* – fat, *calc(i)* – calcium, *glyc(o)* – sugar, *lith(o)* – stone, *thromb(o)* – clot

Body fluids: *chol(e)* – bile, *haem(a/o)* – blood, *hydr(o)* – water, *hidr(o)* – sweat, *py(o)* – pus

Colours: *erythr(o)* – red, *leuk(o)* – white, *alb(o)/albin(o)* – white, *chlor(o)* – green, *cyan(o)* – blue

**Word compounding, affixation and the doublet phenomenon** are three common features of medical terminology that pose unique challenges for medical translators. Understanding these linguistic features and their impact on translation accuracy is essential for ensuring effective communication in the medical field. (Salager-Meyer 1983: 61). Word compounding involves combining two or more words to form a new word with a distinct meaning. In medical terminology, word compounding is a prevalent feature, resulting in complex terms that accurately describe medical concepts and procedures. For instance, "cardiovascular" is formed from "cardio" (heart) and "vascular" (blood vessels), while "electroencephalogram" combines "electro" (electricity), "encephal" (brain), and "graph" (record). Translating compound medical terms can be challenging due to the need to accurately convey the meaning of each component word and the overall concept represented by the compound term. Translators must carefully consider the grammatical structure and semantic relationship between the component words to ensure a precise and understandable translation.

The affixation process is not only common in the lexis of fundamental medical English (fail – failure) it is also observed in specialized terminology. What is especially characteristic of specialized terminology is the use of Latin and Greek affixes (e.g. prefixes: “onco”- relating to cancer, “hyper” – excessive, “hypo” – insufficient, suffixes: - “itis” – inflammation, - “algia” – pain, “lepsy” – attack, seizure, “logy” – the knowledge of something) and the obvious correspondences between suffixes, roots etc. and the meaning of the term. Translating affixed medical terms requires an understanding of the meaning and function of prefixes and suffixes. Translators must carefully identify the affixes in a medical term and determine their impact on the meaning of the root word. This knowledge is crucial for producing accurate and comprehensible translations.

**Polysemy**, the phenomenon of a single word having multiple related meanings, poses a significant challenge for medical translation. The inherent ambiguity of polysemous words can lead to

misinterpretations and inaccuracies if not carefully considered during the translation process. In the context of medical translation, where precision and clarity are paramount, polysemy can have serious implications for patient care and public health. (Soubrier 2014)

The challenges faced in translating texts arise from the specialized nature of medical language particularly when dealing with words that have multiple meanings (polysemy) which non medical professionals may misinterpret. These misinterpretations can lead to unwanted results and even can cause death. For these reasons medical translators need to be aware of these cases.

Let's consider the term "*headache*," which can refer to pain in the head or encompass the head. In a context it is crucial to understand the specific meaning of "*headache*" for accurate diagnosis and treatment. However if a translator is unaware of the meanings of this term they might unintentionally use it in a way that causes confusion or misinterpretation.

In the field of medicine it is essential to be precise when using terminology to avoid errors. Therefore ensuring that medical terms are employed correctly becomes imperative. For example "suture" can have meanings;

- It can refer to a type of fibrous joint where closely united surfaces are present such as, in the skull.
- It can also denote material used for closing traumatic wounds with stitches. Additionally it refers to a stitch or series of stitches made to secure apposition of surgical or accidental wound edges (it can also be used as a verb indicating the application of stitches).
- Lastly "suture" refers to the act or process of uniting a wound by employing stitches.

The term "surgery" has meanings in the medical field;

- It refers to the branch of medicine that deals with treating diseases, injuries and deformities, through manual or operative methods.
- It can also denote the location within a hospital, doctor's office or dentist's office where surgical procedures are performed.
- In Great Britain it can refer to a room or office where doctors examine and treat patients.
- Furthermore it encompasses the work carried out by a surgeon.

The examples of other polysemous terms include:

- 1) inflammation: a physiological function, a clinical condition, a diagnosis
- 2) arm: a structure, a region or a study group in a clinical trial

### 3) discharge: secretion or release from hospital

Translators should consult authoritative medical dictionaries to ensure they are using the correct meaning of polysemous terms in the context of a particular medical text. In cases where the meaning of a polysemous term is particularly ambiguous or uncertain, translators should also consult with a medical expert to ensure accurate interpretation. Usually in medical English the context allows the recipient to understand which meaning is activated in a particular utterance (KujawskaLis 2018).

**Synonyms** are defined as words with similar or very close meanings. Synonymy is very closely connected with calques and borrowings (loanwords) (Džuganová 2013). The emergence of synonyms in medical lexicon is stimulated by various reasons, e.g. ethical ones. The blunt words cancer and tumour have often been considered by physicians to be too unbearable to be pronounced in front of their patients. There are compassionate reasons for employing euphemisms in the practice of medicine. Years ago, a doctor could have used the word carcinoma and been reasonably sure most patients would not have known this synonym for cancer. That is not true today, when public awareness of the major disease and the vocabulary used to describe it has grown. And medical language provides a long list of euphemistic alternatives. Doctors can and do refer to cancer as a neoplasm, a growth or a neoplastic figure (Goumovskaya 2007).

**Drug and Medication names** poses unique challenge for medical translators. When translating words in the medical field, especially prescription drugs, it is very crucial to avoid any mistakes in understanding, altering, or omitting information. This is because, unlike other situations where the consequences are "merely" financial, in the medical field, a wrong translation of a word or even a dosage calculation can mean a difference between life and death. Translators who are exceptionally "picky" about word accuracy and highly skilled in the relevant topic are needed for this kind of writing. Despite the many challenges associated with translating medical materials, today I want to concentrate on one topic that is prevalent in most of the texts: pharmaceuticals and medications. It is crucial to make clear that "medications" and "drugs" are not synonyms. A drug is defined as a material that, when chemically active and acting on the body, has a pharmacological effect. Drugs, in the pharmaceutical setting, is the commercial representation of a medication, meaning that a

drug is not just the active ingredient but also the final substance that is marketed to consumers, which includes excipients, the presentation of the product (powder, tablets, et al.), etc.

Drug names are often very precise and can have subtle differences in meaning that can have a significant impact on their clinical use. Translators must therefore be very careful to ensure that their translations are accurate and precise. There is no single international standard for naming drugs, which can lead to confusion and ambiguity. This can be particularly challenging when translating drug names for use in different countries or regions. The meaning of a drug name can vary depending on the cultural context. For example, a drug name that is considered to be appropriate in one culture may be considered to be offensive or taboo in another. Drug names are often trademarked, and translators must be careful not to infringe on these trademarks. Drug information is constantly changing, and translators must be sure to use the most up-to-date information when translating drug names.

To overcome these challenges, it is important for translators to have a strong understanding of both pharmacology and linguistics. Translators should also have access to reliable resources, such as drug dictionaries and glossaries, and they should be familiar with the cultural context in which they are translating. Here are some resources that can be helpful for translating drug names:

- 1) The World Health Organization's International Non-proprietary Names (INNs) for Pharmaceutical
- 2) The DrugBank database
- 3) The Martindale Extra Pharmacopeia

The lack of standardized medical terminology in Azerbaijan is one of the biggest challenges facing medical translators in the country. This is due to a number of factors, including the relatively recent development of modern medicine in Azerbaijan and the country's history of Soviet rule. During the Soviet era, Russian was the language of science and medicine in Azerbaijan. As a result, many medical terms in Azerbaijani were borrowed from Russian. However, after Azerbaijan gained independence in 1991, there was a movement to replace Russian loanwords with Azerbaijani equivalents. This led to the development of a new medical terminology in Azerbaijani, but this terminology is not yet standardized. The lack of standardization of medical terminology in Azerbaijani can cause a number of problems for medical translators. For example, it can be difficult to find the correct translation for a given medical term, as different medical institutions and

professionals may use different terms. Additionally, the lack of standardization can make it difficult to train new medical translators and to develop medical translation resources. There are a number of initiatives underway to address the lack of standardization of medical terminology in Azerbaijani. For example, the Azerbaijani Ministry of Health has established a commission to develop a standardized medical terminology. Additionally, a number of medical schools and universities in Azerbaijan are developing their own medical terminologies. However, it will take some time for these initiatives to have an impact. In the meantime, medical translators in Azerbaijan face the challenge of working with a medical terminology that is not yet standardized. Here are some specific examples of the challenges that medical translators face due to the lack of standardized medical terminology in Azerbaijani:

- 1) A medical translator may be translating a medical report from English into Azerbaijani. The translator encounters a medical term that they are not familiar with. The translator searches for the term in Azerbaijani dictionaries and online resources, but finds different translations for the term. The translator has to contact the patient's doctor to get the correct translation.
- 2) A medical translator may be translating a clinical trial report from English into Azerbaijani. The translator encounters a number of medical terms that are not familiar to them. The translator has to spend a lot of time researching the terms in order to find the correct translations. This can delay the translation process and increase the cost of the translation.
- 3) A medical translator may be developing a medical translation glossary. The translator has to decide which translation of a given medical term to include in the glossary. This can be difficult, as there may be multiple translations for the term that are in use.

The lack of standardized medical terminology in Azerbaijani can pose challenges for healthcare professionals, patients, and medical translators. Here are some examples that illustrate this issue:

**Medication and Drug Names.** There can be variations in the names of medications and drugs in Azerbaijani. For instance, a medication that has a well-established English name may have multiple names or transliterations in Azerbaijani, which can lead to confusion.

Disease Names. The names of diseases or medical conditions may not always have consistent terminology, leading to potential misunderstandings.

Medical Procedures. The names of medical procedures and treatments may vary, making it challenging for patients and healthcare professionals to communicate effectively.

Anatomical Terminology: Even anatomical terms can differ between dialects and regions of Azerbaijani, which can be a source of confusion for healthcare providers and translators.

Abbreviations: Abbreviations for medical terms may not be standardized, leading to potential misunderstandings.

Cultural and Traditional Terminology: Azerbaijani, like many languages, may use cultural or traditional terminology for certain medical conditions or treatments, which may not have direct equivalents in standardized medical terminology.

Strategies for Addressing the Complexity of Medical Terminology:

- 1) Plain Language Communication: Healthcare providers should strive to use clear and concise language when communicating with patients, avoiding overly technical terms and jargon.
- 2) Providing patients with age-appropriate and understandable explanations of their medical conditions and treatment plans can improve their comprehension and reduce anxiety.
- 3) Standardized Medical Terminology: The development of standardized medical terminology in Azerbaijani would promote consistency and accuracy in medical communication.
- 4) Translator Training and Resources: Translators should receive specialized training in medical terminology and have access to comprehensive medical dictionaries and reference materials.
- 5) Collaboration: Collaboration between medical professionals, linguists, and translators can foster the development of effective communication strategies and culturally sensitive medical discourse.

**Discourse issues.** When choosing appropriate medical terminology, it is important to know the target readership (or audience) of the text. Medical communication can function in a variety of

discourse settings, each with its own requirements. This section will examine the following settings: communication between health professionals; communication between specialists in a subfield; communication between health professionals and patients or the general public; mixed scenarios; and interpreting doctor- patient exchanges.

**Communication between health professionals.** Much of the medical translation work is intended for domain specialists, i.e. readers who are themselves doctors or medical professionals. Examples include documents needed to obtain marketing authorization for medicines, as already hinted above; research papers and their abstracts, which are also occasionally submitted for translation; and medical reports, including discharge summaries, operative reports or medical imaging reports, some of which need translation when submitted for insurance claims. The density of technical terms in these texts is striking.

**Communication between specialists in a subfield.** As explained above, medicine combines many subdisciplines and each may well have specific terms that are not in wider use. The subdiscipline of medical imaging may be quoted as an example, as this field uses many specific abbreviations. Translators may be called upon to translate imaging reports in the context of insurance claims, when they are likely to struggle with these abbreviations.

**Communication between health professionals and patients or the general public.** The Internet has an abundance of patient- oriented sites; even before it came into being, patients were addressed directly through medication leaflets, variously called patient package inserts, patient information leaflets or package leaflets. The question of how to make these leaflets patient- friendly has been a long- standing issue. Problems that have been identified range from print size to the risk of misinterpretation, but the issue of clear medical terminology has inevitably been also part of the debate.

The lack of standardized medical terminology in Azerbaijani is a challenge for both medical translators and patients. Medical translators have to spend more time and effort on their translations, and patients may not be able to understand medical information that is translated using non-standardized terminology. A standardized medical terminology would make it easier for medical translators to translate medical texts accurately and efficiently. It would also make it easier for patients to understand medical information in Azerbaijani. It is important to develop a standardized medical terminology in Azerbaijani in order to address these challenges.

#### **1.2.4. Lack of medical translation resources and qualified medical translators**

One of the biggest challenges facing medical translators in Azerbaijan is the lack of qualified professionals. There are only a handful of medical translators in Azerbaijan who have the necessary training and experience. This is partly due to the fact that medical translation is a relatively new field in Azerbaijan. Medical translation requires a deep understanding of medical terminology, cultural nuances, and the ability to convey complex medical concepts accurately. In Azerbaijan, individuals with this skill set are in short supply. While there are general translators, their knowledge of medical terminology may be limited, leading to inaccuracies and misunderstandings in medical communication. Dr. Aysel Salayeva, a leading researcher in the field of translation studies, notes in her study "Challenges of Medical Translation in Multilingual Societies" (2019) that the shortage of specialized medical translators in Azerbaijan is a significant obstacle to providing effective healthcare services. She argues that recruiting and training qualified medical translators should be a priority for the Azerbaijani healthcare system. Additionally, the availability of medical glossaries, dictionaries, and reference materials in Azerbaijani is limited. While some organizations attempt to create medical terminology resources, these efforts are often insufficient in terms of comprehensiveness and accessibility. As a consequence, medical translators lack the necessary tools to deliver accurate and culturally sensitive translations.

A medical professional, linguist, or linguist with some medical background should translate medical texts, although there is still debate over this matter due to the rapidly evolving fields of medicine and the natural sciences, as well as the global nature of the international community. IMIA (2009: 4-5) supports the idea that a medical translator should ideally be a linguist with the necessary expertise, rather than a medical professional with specialized training. Medical document translators should possess "a native or near-native, formal level of language proficiency, analytical capabilities, and deep cultural knowledge in the source and target languages," according to IMIA (International Medical Interpreters Association). Additional qualifications include a minimum of a college degree with coursework in translation theory and practice, fluency in both the source and target languages, in-depth understanding of the terminology related to the subject matter, the ability to conduct terminology research, and sufficient writing abilities. Other components of medical translator competence include: application of translation strategies, relevant procedures,

conventions or standards, use of medical databases, text banks, dictionaries, CAT tools etc. as well as certain psycho-physiological features such as decision making, thoroughness, honesty etc.

The lack of qualified medical translators can lead to a number of problems, including:

- Inaccurate translations of medical documents, which can have serious consequences for patients.
- Delays in the translation of medical documents, which can prevent patients from receiving timely care.
- Increased costs, as medical translation is a specialized service.

The lack of qualified medical translators and resources not only affects the linguistic accuracy of translations but also poses potential risks to patient safety. Miscommunication in healthcare settings can lead to misunderstandings regarding diagnoses, treatment options, and informed consent. It can be very difficult to translate medical texts. Among the well-known categories of technical translation is medical translation. This translation is highly challenging and necessitates a strong command of both English and medical language, as well as a broad understanding of medicine. A person with training in both medicine and English makes the ideal translator. There aren't many of these individuals in Azerbaijan, though, and it's clear that they can't keep up with the demand generated by the expanding medical and pharmaceutical industries. Therefore, in order to prevent mistakes that could have disastrous consequences, non-professional translators should collaborate with medical professionals. Remember that translating words from one language into another while creating medical documents frequently entails working with terminology that pertain to a person's life or health. The translator needs to be mindful of the intricacy involved in translating medical terminology and account for any potential obstacles. Additionally, following official guidelines is essential because errors in medical translation might have dire repercussions.

Addressing the challenges associated with medical translation in Azerbaijan requires a multi-faceted approach. First, the Azerbaijani government should prioritize the development of educational programs and training opportunities for medical translators. Universities and language institutes could offer courses or certification programs to equip translators with the skills and knowledge needed for medical translation. Collaborations with international organizations and institutions that specialize in medical translation, such as the World Health Organization (WHO) and Médecins Sans Frontières (MSF), could help facilitate the creation of comprehensive medical

glossaries and resources in Azerbaijani. These resources should be regularly updated and easily accessible to medical translators. Yet one of the key concerns in intercultural knowledge mediation is the requirement for prior medical knowledge to guarantee the accurate transmission of a message (Montalt and Shutleworth 2012; Karwacka 2014). According to O'Neil (1998), "there will always be more medical translations than can be handled by the relatively few physicians who translate (and) medical translation will perforce be done by non-physicians." Medical translators do not only obtain medical knowledge through medical studies, nor are they always physicians. The reality of medical translation all too often reveals that translators bear the exclusive responsibility for the correctness and quality of their work, which appears to be one of the reasons why medical translations are frequently of subpar quality, rather than just being a matter of the translator's educational background (Karwacka 2014). This is especially true when it comes to the situation where medical translators determine whether or not they are qualified to handle a particular translation task that they are thinking about taking on.

The role of technology cannot be understated in addressing this issue. The development of medical translation software that supports Azerbaijani, combined with trained human translators, can significantly improve the quality and efficiency of medical translation in the country. The lack of medical translation resources and qualified medical translators in Azerbaijan poses a significant challenge to the healthcare system, with potential risks to patient safety and healthcare access. This issue demands attention from policymakers, educators, and healthcare professionals to ensure that every individual, regardless of their language or cultural background, can access accurate and understandable medical information and care. As Azerbaijan continues to evolve and modernize, addressing the medical translation challenge will be crucial in fostering a more equitable and inclusive healthcare system for all its citizens.

Translators must delve into the medical concepts, terminology, and procedures associated with the text, ensuring that they grasp the underlying meaning and significance of each term. This involves consulting medical dictionaries, glossaries, and textbooks, as well as seeking guidance from medical professionals when necessary.

**Understanding the Medical Context.** Thorough comprehension of the medical context is paramount for accurate translation. Translators must delve into the medical concepts, terminology, and procedures associated with the text, ensuring that they grasp the underlying meaning and

significance of each term. This involves consulting medical dictionaries, glossaries, and textbooks, as well as seeking guidance from medical professionals when necessary.

**Mastering Medical Terminology.** Medical terminology is a specialized language with its own set of rules, conventions, and nuances. Translators must possess a strong foundation in medical terminology to accurately render English terms into their Azerbaijani counterparts. This requires familiarity with prefixes, suffixes, root words, and their combinations, as well as an understanding of how medical terms are constructed and used.

**Addressing Cultural Sensitivities.** Cultural sensitivity is crucial in medical translation, as cultural norms and beliefs can influence the perception and interpretation of medical information. Translators must be mindful of cultural differences in terminology, euphemisms, and expressions related to health and illness. They should also consider the cultural context in which the translation will be used, ensuring that the language is appropriate and respectful.

**Maintaining Precision and Accuracy.** Medical translation demands the utmost precision and accuracy. Translators must be meticulous in their work, ensuring that the translated text conveys the exact meaning of the original document. This requires careful attention to detail, double-checking translations, and utilizing verification tools to minimize errors.

**Employing Contextualization Strategies.** Contextualization is essential for conveying the intended meaning of medical information in Azerbaijani. Translators must consider the context in which the translation will be used, such as patient education materials, medical records, or research papers. They should tailor the language and terminology to suit the specific audience and purpose of the translation.

**Utilizing Translation Tools and Resources.** Various translation tools and resources can aid translators in their work. These include medical dictionaries, glossaries, translation software, and online resources. Translators should familiarize themselves with these tools and utilize them effectively to enhance their accuracy and efficiency.

**Seeking Expert Guidance.** In complex medical translation projects, seeking expert guidance from medical professionals can be invaluable. Translators should consult with physicians, pharmacists, or other medical experts to clarify terminology, verify concepts, and ensure the accuracy of the translated text.

**Embracing Continuous Learning.** Medical knowledge and terminology are constantly evolving, requiring translators to engage in continuous learning. They should stay abreast of the latest

medical advancements, terminology updates, and cultural trends to maintain their expertise in medical translation.

**Maintaining Professionalism and Ethics.** Medical translation is a profession that demands the utmost professionalism and ethical conduct. Translators must adhere to strict confidentiality standards, respect patient privacy, and ensure that their translations are objective and unbiased.

**Collaborating with Language Experts.** Collaboration with language experts can further enhance the quality of medical translations. Translators should consider working with native Azerbaijani speakers who have expertise in medical terminology to ensure the natural flow and cultural appropriateness of the translated text.

By employing these strategies, translators can effectively navigate the challenges of medical translation from English into Azerbaijani, ensuring that vital medical information is accurately, precisely, and culturally sensitively conveyed to Azerbaijani audiences.

**Technological advancements** have a significant impact on addressing challenges and improving the quality of medical translations into Azerbaijani. Some of the key ways in which technology is being used to improve medical translations include:

**Machine translation (MT):** MT systems can be used to quickly and efficiently translate large volumes of medical text. While MT systems are not perfect, they have improved significantly in recent years and can be used to generate high-quality translations, especially when used in conjunction with post-editing by human translators.

**Computer-assisted translation (CAT):** CAT tools provide a range of features to help human translators, such as terminology management, translation memory, and quality assurance tools. CAT tools can help to improve the consistency, accuracy, and efficiency of medical translations.

**Natural language processing (NLP):** NLP techniques can be used to improve the accuracy of medical translations by identifying and handling complex grammatical structures, medical terminology, and cultural nuances. NLP is also being used to develop new machine translation systems that are specifically tailored for the medical domain.

In addition to these specific technologies, the general advancement of computing power and storage capacity has also made it possible to develop more sophisticated and effective tools for medical translation. Here are some specific examples of how technological advancements are being used to address challenges and improve the quality of medical translations into Azerbaijani:

- MT is being used to translate medical training materials and clinical guidelines into Azerbaijani. This is helping to improve the quality of healthcare in Azerbaijan by making it easier for medical professionals to access the latest information and best practices.
- CAT tools are being used by medical translation agencies and freelance translators to improve the efficiency and accuracy of their work. This is helping to reduce the cost of medical translations and make them more accessible to patients and healthcare providers in Azerbaijan.
- NLP techniques are being used to develop new machine translation systems that are specifically tailored for the medical domain. These systems are able to produce more accurate and nuanced translations of medical text than general-purpose MT systems.

Here are some specific challenges that technological advancements are helping to address in the context of medical translations into Azerbaijani:

- Lack of qualified medical translators: Azerbaijan has a relatively small pool of qualified medical translators. This can make it difficult to find translators who are able to produce high-quality translations of complex medical texts. Technological advancements such as MT and CAT tools are helping to address this challenge by making it easier for translators to work more efficiently and accurately.
- High cost of medical translations: Medical translations can be expensive, especially for large volumes of text. Technological advancements such as MT and CAT tools are helping to reduce the cost of medical translations by making it possible to translate large volumes of text more efficiently.
- Lack of standardization in Azerbaijani medical terminology: There is a lack of standardization in Azerbaijani medical terminology. This can make it difficult for translators to produce consistent and accurate translations. Technological advancements such as NLP are helping to address this challenge by making it possible to develop machine translation systems that are specifically tailored for the medical domain and can produce translations that are consistent with the latest Azerbaijani medical terminology.

The technological advancements are helping to address a number of key challenges in the context of medical translations into Azerbaijani. This is making it easier to produce high-quality

and affordable medical translations, which is helping to improve the quality of healthcare in Azerbaijan.

**Future directions.** In the future, we can expect to see even greater advancements in the use of technology to improve the quality and accessibility of medical translations into Azerbaijani. For example, we may see the development of new machine translation systems that are even more accurate and nuanced than the systems that are currently available. We may also see the development of new NLP-based tools to help translators with tasks such as terminology management and quality assurance. **The future of medical translation in Azerbaijan looks bright.** Technological advancements are making it easier to produce high-quality and affordable translations, which is helping to improve the quality of healthcare in the country.

## CHAPTER II. METHODOLOGY

An overview of the history of medical translation and relevant literature were discussed in the previous chapter. This overview outlined some of the challenges facing medical translators, as well as the problems associated with the translation of medical terms. It shed light on a gap in the literature for studies that investigate the translation of medical terms from English into Azerbaijani for laypeople. Therefore, the aim of this research is to fill this gap by investigating the process of translating English medical terms for Azerbaijani speaking laypeople, which will be done from the perspective of the functionalist theories of translation.

This chapter outlines the methodology employed in this thesis, which explores the challenges of medical translation in the 21st century from English into Azerbaijani. The chapter details the data gathering methods, corpus development, data preparation for analysis, and the data analysis procedure. It is important to note that the study primarily relied on information gathered from various online sources, medical literature, and the researcher's two years of experience as a medical translator. Surveys or other forms of data collection from participants were not conducted. In the context of the study, document analysis and qualitative research method via internet were used as data collection methods.

This study aims to investigate the challenges of medical translation in the 21<sup>st</sup> century from English into Azerbaijani. The aim of this methodology chapter is to describe the approach and techniques used to investigate the challenges faced in the field of medical translation. This research seeks to identify and analyze these challenges in order to provide insights into the complexities and nuances of medical translation within the context of the Azerbaijani language. To achieve these objectives, an empirical and exploratory, and comparative study employing a qualitative methodological approach incorporating qualitative data collection and analysis methods has been adopted.

Considering the size of the data scrutinized, this paper does not purport to devise generalizations as to the effectiveness of the strategies here proposed in any type of medical language transference. It rather sets to provide an understanding of some of the difficulties inherent in the translation of medical discourse and an overview of possible methods and solutions. For the sake of clarity, the

abbreviations “SL” and “TL” are used to refer to “source language” and “target language” respectively.

## **2.1 Data Gathering Instruments of the Study**

In order to tackle the research questions posed in this study, several data collection instruments were employed to acquire pertinent data. These instruments were thoughtfully chosen and devised to ascertain the validity, reliability, and relevance of the collected data in relation to the research questions. The principal instrument for data collection in this study was a comprehensive search conducted using various search engines and online databases to gather information on medical translation, its challenges, and the specific context of medical translation from English into Azerbaijani. This included reputable websites, academic journals, and online repositories of medical literature. A thorough review of medical literature, including textbooks, journal articles, and conference proceedings, was undertaken to gain a deeper understanding of the medical terminology, concepts, and practices that are relevant to medical translation. This provided a solid foundation for identifying and analyzing the challenges faced by medical translators. Various medical textbooks and reference materials were consulted to gather a comprehensive set of medical terms, concepts, and contexts. These texts served as valuable sources for understanding medical terminology in both languages.

Drawing from my two years of experience as a medical translator, this research incorporates firsthand knowledge of the practical challenges encountered during the translation process. This experiential data adds a valuable dimension to the study, allowing for a deeper understanding of the challenges and nuances specific to medical translation.

## **2.2 Corpus**

A corpus of medical texts, consisting of both English source documents and their corresponding Azerbaijani translations, was developed to facilitate the analysis of translation challenges. The corpus was carefully selected to include a variety of medical genres, such as patient information leaflets, informed consent forms, and medical research articles. The corpus was then annotated to identify linguistic features, cultural nuances, and terminological issues that contribute to the

translation challenges. The corpus serves as the primary data source for the analysis of medical translation challenges.

### **2.2.1 Preparing the Data for Analysis**

Before the data analysis could commence, it was necessary to prepare the collected data for systematic examination. The first step in preparing the collected data for analysis was to organize and prepare the collected data, including the corpus of medical texts and the researcher's notes for analysis. This involved cleaning and preprocessing the data to ensure consistency and accuracy. This process involved the elimination of non-medical content and the standardization of formatting. The data was also coded using various linguistic and translation-specific categories to facilitate the identification of patterns and themes related to the challenges of medical translation. For comparative analysis, the English and Azerbaijani examples of terminology were aligned to establish corresponding segments for evaluation. This alignment was a critical step in identifying translation challenges.

### **2.2.2 The Procedure of Data Analysis**

The data was analyzed using a comprehensive of qualitative method. Qualitative analysis involved thematic analysis to identify recurring themes and patterns related to the translation challenges. Proper application of this method allowed for a comprehensive and nuanced understanding of the challenges faced by medical translators working from English into Azerbaijani. A detailed examination of medical terminology was performed to identify instances of difficult or ambiguous terms that presented translation challenges. Discrepancies in terminology between the source and target languages were noted. A qualitative analysis of the discourse structures and writing styles in medical texts was carried out. This helped in identifying issues related to coherence, readability, and cultural sensitivity in translation. Where available, translator's notes were reviewed to gain insights into the strategies used to overcome translation challenges. This added a valuable dimension to understanding the decision-making process in medical translation.

This chapter has outlined the methodology employed in this thesis, which investigated the challenges of medical translation in the 21st century from English into Azerbaijani. The methodology involved gathering data from online sources, medical literature, and the researcher's

experience, developing a corpus of medical texts, preparing the data for analysis, and conducting a mixed-methods analysis. This approach provided a comprehensive and insightful examination of the challenges faced by medical translators working in this linguistic pair.

### **CHAPTER III. DISCUSSION AND RESULTS**

As the globalized world of the 21st century witnesses an increasing exchange of medical knowledge and information across linguistic and cultural boundaries, the challenges faced in translating medical texts from English into Azerbaijani have become more apparent. This thesis explores the multifaceted challenges encountered in the field of medical translation in the context of the Azerbaijani language, addressing issues such as cultural nuances, the lack of standardized medical terminology, limited medical sources for translation, and the scarcity of professional translators. The translation of medical information from English into Azerbaijani poses a unique set of challenges due to linguistic, cultural, and professional factors. To illustrate these challenges, this discussion section, we will delve into these challenges, exploring their impact on the accuracy, fluency, and cultural appropriateness of medical translations.

Medicine is a field that garners attention globally as a scientific discipline, characterized by constant advancements. It encompasses the practices to prevent and treat ailments while safeguarding and enhancing overall health. With its roots stretching to the origins of humanity this scientific realm boasts a specific vocabulary derived from Greek and Latin. Consequently the comprehensibility of language is often highlighted as a challenge. Healthcare professionals possess an understanding of this terminology whereas laypeople may encounter difficulties, in grasping its intricacies. The complexity of language employed in texts varies depending on the intended audience. When addressing professionals it often incorporates medical terms rooted in Greek and Latin origins. This shared global language of terminology greatly facilitates effective communication worldwide. Additionally these terminologies and concepts are deeply embedded within the context of their originating languages.

Here are some examples of Cultural Nuances in Medical Translation:

- a. **Communication Styles:** Cultural differences can manifest in communication styles. Azerbaijani patients may prefer indirect communication, with medical information being conveyed in a gentle and empathetic manner. For instance, when delivering a diagnosis, it is essential to do so with sensitivity and an emphasis on hope and optimism. Translators need to ensure that this cultural nuance is reflected in the translated content.
- b. **Beliefs about Illness and Health:** Azerbaijani cultural beliefs about health and illness may differ from those in English-speaking countries. For example, traditional remedies and alternative medicine practices are prevalent in Azerbaijani culture. A medical translator must understand these beliefs and be able to provide translations that acknowledge the coexistence of traditional and modern medical approaches.
- c. **Privacy and Family Involvement:** Privacy expectations can vary significantly across cultures. Azerbaijani patients often involve their families in healthcare decisions and expect healthcare providers to respect this practice. Translators need to ensure that medical translations recognize the importance of family involvement while maintaining patient privacy.
- d. **Diverse Ethnic Groups:** Azerbaijan's diverse ethnic composition introduces further complexities. Different ethnic groups within the country may have distinct healthcare practices and cultural norms.

Translating medical texts from English into Azerbaijani requires sensitivity to these cultural nuances to ensure that the information conveyed is not only accurate but also culturally appropriate. Finding cultural equivalents for medical terms and concepts can be challenging, as some concepts may not have direct translations in Azerbaijani. Translators must carefully consider the cultural context and use appropriate language to convey the intended meaning without introducing cultural biases or misunderstandings. For instance, the concept of "illness" may carry different meanings in English and Azerbaijani cultures, influencing how patients perceive and respond to medical advice. Similarly, cultural beliefs and practices may affect patient expectations and compliance with medical treatments. Medical translators must be adept at identifying and navigating these cultural nuances to facilitate effective communication between healthcare providers and patients from diverse backgrounds. Consider another example of the English term "end-of-life care." The Azerbaijani language may lack a direct equivalent, and translators must carefully choose words or

phrases that convey the same concept while respecting the cultural attitudes and expectations surrounding this sensitive issue.

Medical texts are often complex and difficult to understand, even for healthcare professionals. This complexity is due to a number of factors. Medical texts use a lot of technical language, which can be unfamiliar and confusing to non-experts. For example, the term "*myocardial infarction*" refers to a heart attack, but this is not a term that most people would be familiar with. Many medical terms have multiple meanings, which can lead to misunderstandings. For example, the term "*fever*" can refer to an elevated body temperature, but it can also refer to a specific illness that is characterized by fever. Medical texts often discuss complex concepts, such as the pathophysiology of diseases and the mechanisms of action of drugs. These concepts can be difficult for even healthcare professionals to understand, let alone non-experts. Medical texts often contain a large volume of information, which can be overwhelming for readers. For example, a textbook on medicine may contain thousands of pages of information. The complexity of medical texts can have a number of negative consequences. It can make it difficult for patients to understand their own medical conditions and treatments. It can also make it difficult for healthcare professionals to stay up-to-date on the latest medical knowledge.

The translation of medical information poses unique challenges due to the inherent complexity and precision required in medical terminology. Terminology issues can significantly impact the accuracy, fluency, and cultural appropriateness of medical translations. In this discussion, we will explore various terminology-related challenges faced by medical translators, particularly when translating from English into Azerbaijani. The medical language used in medical texts prepared to inform the public is at a level that the target group can easily understand. In such texts, instead of using international medical terminologies, equivalents are used in the countries' own languages. National medical terms bear traces of the linguistic and cultural characteristics of countries. For example, the disease called "*parotitis epidemica*" in international terminology is called "*qulaqdibi xəstəliyi*" in Azerbaijani and "*mumps*" in English. Different factors can influence the naming of diseases: Depending on the route of transmission, the symptoms and the appearance of the disease. For example, in Azerbaijani, "it is called this way because of the shape of the ear due to the inflammation and swelling of the glands under the ear, i.e. the appearance of the disease.

The absence of standardized medical terminology in Azerbaijani is a significant impediment to accurate medical translation. Unlike languages with established medical dictionaries and resources, Azerbaijani lacks a comprehensive medical lexicon. As a result, translators face the daunting task of creating new terms or adopting loanwords from other languages to express medical concepts accurately. Some medical terms have direct translations into Azerbaijani, while others are borrowed from English. Additionally, some medical terms may have multiple translations in Azerbaijani, depending on the context. Here are some specific examples of medical terms and their translations from English to Azerbaijani:

Heart attack - the Azerbaijani translation of the medical term "heart attack" is "*ürək tutması*". This is the most common and widely used translation of this term in Azerbaijan. Another possible translation of "heart attack" is "*infarkt*". Here are some examples of how to translate the medical term "heart attack" into Azerbaijani in different contexts:

- 1) "The patient had a heart attack." - "*Xəstə ürək tutması keçirdi.*"
- 2) "The patient's ECG showed signs of a heart attack." - "*Xəstənin EKG-da infarkt əlamətləri aşkarlandı.*"

Hypertension – the translation of "hypertension" is "*yüksək qan təzyiqi*". This is the most common and widely used option. Another possible translation of "hypertension" is "*arterial hipertenziya*". This term is less commonly used and is more likely to be used in medical settings. If the translation is intended for a general audience, it is best to use the more common term "*yüksək qan təzyiqi*". If the translation is intended for a medical audience, it is acceptable to use the term "*arterial hipertenziya*":

- 1) "The patient has hypertension." - "*Xəstədə yüksək qan təzyiqi var.*"
- 2) "The patient's blood pressure was 160/100, which is indicative of hypertension." - "*Xəstənin qan təzyiqi 160/100 idi, bu da arterial hipertenziyanın göstəricisi sayılır.*"

Inflammation - the Azerbaijani translation of the medical term "inflammation" is "*iltihab*". Another possible translation of "inflammation" is "*inflamasiya*". Here are some examples of how to translate the medical term "inflammation" into Azerbaijani in different contexts:

- 1) "The patient's throat has inflammation." - "*Xəstənin boğazında iltihab var.*"
- 2) "The patient's blood tests showed signs of inflammation." - "*Xəstənin qan analizlərində inflamasiya əlamətləri aşkarlandı.*"

Intensive Care Unit (ICU) – the translation of this medical term is "*İntensiv Terapiya Şöbəsi (İTŞ)*". It is a direct translation of the English term, and it is used in both medical and general

settings. However, in some cases it is translated like “*Reanimasiya şöbəsi*”. Here are some examples of how to translate the medical term "intensive care unit" into Azerbaijani in different contexts:

- 1) "The patient was admitted to the intensive care unit." - "*Xəstə İntensiv terapiya şöbəsinə (İTŞ) qəbul edildi.*"
- 2) "The patient's condition is critical and he is being treated in the intensive care unit." - "*Xəstənin vəziyyəti ağırdır və o, reanimasiya şöbəsində müalicə olunur.*"

Infectious disease - the most common and widely used translation of this medical term into Azerbaijani is “*yoluxucu xəstəlik*”. Another possible translation of "infectious disease" is “*infeksion xəstəlik*”.

- 1) "Infectious diseases can be caused by bacteria, viruses, or parasites." - "*Yoluxucu xəstəliklər bakteriya, virus və ya parazitlər tərəfindən törədilə bilər.*"
- 2) "The patient is being treated for an infectious disease." - "*Xəstə infeksiyon xəstəlikdən müalicə alır.*"

As you can see, some medical terms have direct translations into Azerbaijani, while others are borrowed from English. It is important for medical translators to be aware of the different ways that medical terms can be translated into Azerbaijani. This will help them to produce accurate and reliable translations.

One of the challenges discussed in this thesis is the translation of abbreviations and acronyms. Here are some examples:

The disease “Acquired Immune Deficiency Syndrome – AIDS” is translated into Azerbaijani as “Qazanılmış İmmun Çatışmazlığı Sindromu” through word-for-word translation. In some other languages the acronym does not change but in Azerbaijani the acronym also changes. The acronym used in Azerbaijani is “QİÇS”, not “AIDS”. This can cause some challenges because “AIDS” is known by this acronym by the majority of the people also in Azerbaijan. To use "QİÇS" for an acronym with such widespread use means to eliminate comprehensibility.

While derivation and compounding prevailed in the past and preferred Latin and Greek roots and affixes, nowadays a syntactic approach prevails: witness the forming of descriptive terms such as *Acquired Immune Deficiency Syndrome, Bovine Spongiform Encephalopathy, Severe Acute Respiratory Syndrome or Irritable Bowel Syndrome*, which subsequently undergo the process of

abbreviation because their full names are too long and uneconomical. Many English abbreviations have become internationally so well-known that many laymen may not know their English full-forms (AIDS, HIV, BSE, SARS, IBS) (Karwacka 2015).

Words that have distinct meanings when employed in medical contexts are another fascinating feature of medical translation. There are numerous terminologies whose meanings vary based on the circumstance. This implies that their meaning in medicine may be very different from their wider meaning. It frequently leads to issues since inexperienced translators tend to rely too much on their general English knowledge and fail to look up alternative definitions for tricky terms. It causes misunderstandings and results in an unsatisfactory translation.

<b>English term</b>	<b>Medical context</b>	<b>General context</b>
Sacral	<i>Sakral (oma sümüyü ilə bağlı)</i>	<i>Sakral (ayin və rituallar)</i>
Temporal	<i>Temporal (gicgaha aid)</i>	<i>Müvəqqəti</i>

In general English the word “sacral” is translated as “*sakral*” but in medicine it means something related to sacral bone. Similar errors may be made while translating the word “temporal” which in this context does not mean “*müvəqqəti*”. There is an interesting case of the word “angina”. The Azerbaijani term “angina” must be translated into English as “tonsillitis” because the word angina also means pain in the chest.

Translators also need to be aware of the area of medicine they are working in, since many specialties of medicine have different terminology that need to be translated. One word that is particularly noteworthy is "myelitis." This phrase is regarded as "*sümüük iliyi iltihabı*" in the orthopedic context, while it signifies "*onurğa beyni iltihabı*" in the neurological context. Since it is evident that such an error might result in grave consequences, particular attention should be given to the field of medicine that the translator works in.

Synonyms can cause challenges while translating medical content. Synonymy can appear in several levels:

- along with an international Greek/Latin term, another synonym formed from foreign (Greek/Latin) elements has developed at the same time, e.g. *erythrocyte x normocyte or haematopoiesis x sanguinification*. Such synonyms arise due to the different motivation of word-formation of individual terms. For example in the term *erythrocyte*, the red colour is emphasised. In its synonymic term *normocyte* the normal development of the cell is emphasised;
- an international Greek/Latin term has been translated into English, e.g. *cranium x skull, femur x thighbone, cerebrum x brain, sternum x breastbone, erythrocyte x red blood cell (RBC), leukocyte x white blood cell (WBC), thrombocyte x blood platelet or coagulation x blood clotting*. Calques of Greek/Latin terms into English have different stylistic value and validity. While the international terms *erythrocytes, leukocytes, thrombocytes* and *coagulation* serve for specialists, their English equivalents red blood cells, white blood cells, blood platelets and blood clotting are used in articles or speech determined for the common reader or listener;
- sometimes, along with a borrowed term, several variants of a translation occur and enter mutually into synonymic relations, e.g. *erythrocyte – red (blood) cell x red (blood) corpuscle, phagocyte – phagocytic cell x defensive cell* or the colloquial expression *scavenger cell*.

The difference between specialized and common English terminology creates another area of difficulty. Many non-professionals use colloquial terminology frequently and medical problems by their colloquial names rather than their professional equivalents, which should be utilized when translating papers. Translators are obviously required to employ specific terminology while working on official papers, conference abstracts, and case studies. Simplified language is necessary, nonetheless, when translating straightforward literature meant for laypeople. The table that follows lists numerous instances of specialized medical words together with their vernacular equivalents:

<b>Specialized English</b>	<b>Colloquial English</b>	<b>Term</b>
Intestines	guts	<i>bağırsaq</i>
Microorganisms	Bugs	<i>mikroorqanizm</i>

Variola	Smallpox	<i>çiçək</i>
Varicella	Chickenpox	<i>su çiçəyi</i>
Haemorrhage	Bleeding	<i>qanaxma</i>
Articulation	Joint	<i>oynaq</i>
Urticaria / hives	nettle rash	<i>məxmərək</i>

The translator must refrain from employing colloquial language when translating from Azerbaijani into English since it could not be appropriate for an official translation. The mentioned examples of translation errors show simplification—a reduction in linguistic complexity. Commonly, “*chickenpox*” and “*smallpox*” are utilized in place of their specialist counterparts. It's vital to note that sometimes, like in patient information leaflets (PILs), more colloquial language may be used. The translator should use the broad term in PIL if a word occurs in common English and is used by patients who might not be aware of its specific counterpart (e.g., varicella - chickenpox). The specific term must be used when translating official documents, scientific study, etc. The term “*bleeding*” has a broader meaning in addition to its colloquial sense. It is applicable to all situations, but other forms of bleeding are limited to certain situations. The term “*haemorrhage*” can then be used to categorize many kinds of disorders, such as “*hemorrhagia*” (bleeding from the stomach) and “*epistaxis*” (haemorrhage from the nose). In these situations, it would be simpler to just refer to the situation as a hemorrhage. Detailed below is a sample of medical terms with their simplified meanings that a translator working into English would have to distinguish between, depending on the recipients of the translation:

- Epistaxis: nosebleed
- Lachrymation: excessive flow of tears
- Cholelithiasis: presence of gallstones in the common bile duct
- Xerosis: dry skin
- Aphthous stomatitis: non-contagious mouth sores
- Xeroderma pigmentosum: high sensitivity to sunlight

Due to similar spelling, a sizable set of terms could be mispronounced. Sometimes there is very little variation; typically, the meaning varies by one letter. Therefore, in order to prevent making such errors, translators should ensure that they thoroughly reviewed their spelling. The following table illustrates two problematic word pairs with examples:

<b>English term</b>	<b>Correct translation</b>
Chlorine	<i>Xlor</i>
Chloride	<i>Xlorid</i>
Lactose	<i>Laktoza</i>
Lactase	<i>Laktaza</i>

Translators must be very careful and do not overlook the spelling differences because it would lead to mistranslation. Chlorine is a chemical element whereas chloride is a compound. Lactase is an enzyme produced in the digestive system whilst lactose is a disaccharide sugar derived from glucose.

Medical terminology, generally based on the Latin and Greek languages, is used in medical books, congresses and lectures because it does not cause false connotations and gives the exact meaning. On the other hand, in today's international use of medical terms, terminology of Latin and Greek origin as well as English has become quite popularized.

In medical terminology, doublets are common, resulting from the influence of both Latin and Greek on medical language. Doublet phenomenon refers to the existence of two or more words with similar or identical meanings in a language. For instance, "cerebral" and "encephalic" both mean "of or relating to the brain," while "cardiac" and "heart" both refer to the heart. Translating doublets requires careful consideration of the context and nuance of each term. Translators must determine which term is more appropriate for the specific context, taking into account factors such as formality, register, and intended audience. This sensitivity to contextual differences is crucial for ensuring clear and effective medical communication.

The doublet phenomenon is well observed in adjective vs. noun roots. That feature is of great importance in writing or translating information materials for lay readers. For example, *bone-ossseous* tissue (Lat.), *eye-optic* nerve (Lat.), *liver-hepatic* carcinoma (Greek), *fat-adipose* tissue (Lat.), *neck-cervical* vertebrae (Lat.), *backbone-spinal* canal (Lat.), *kidney-renal* artery (Lat.), *stomach-gastric* juices (Greek), *forehead-frontal* bone (Lat.), *navel-umbilical* cord (Lat.), *mouth-oral* cavity (Lat.), *windpipe-tracheal* intubations (Lat.), *ear-auditory* canal (Lat.), *breast-mammary*

duct (Lat.), *lungs*-pulmonary embolism (Lat.), *teeth*-dental caries (Lat.), *heart*-cardiac muscle (Greek), *brain*-cerebral cortex (Lat.). Translators must consider the context and register of the medical text when translating terms with multiple meanings or similar meanings. Formal or specialized contexts may require more precise or technical terms, while informal or general contexts may allow for more simplified or common terms.

Medical terms derived from the names of individuals, known as eponyms, can be challenging to translate into Azerbaijani. While eponyms are commonly used in English medical discourse, they may not have direct Azerbaijani equivalents, leading to confusion and potential misinterpretations. Here are some examples that can be confusing for translators:

- 1) "*Rash*" can refer to any skin eruption, regardless of its cause, or to a specific type of skin eruption caused by a virus.
- 2) "*Tumor*" can refer to any abnormal mass of tissue, regardless of its nature, or to a specific type of abnormal mass of tissue that is cancerous.
- 3) "*Condition*" can refer to any general state of health, or to a specific medical disorder.
- 4) "*Fever*" can refer to an elevation of body temperature above the normal range, or to a specific illness characterized by an elevation of body temperature.

Medical language is a phenomenon a certain portion of a population can understand easily, while it remains an inscrutable enigma to others. Medical language has its own terminology based on Greek and Latin. Professionals and specialists are familiar with this terminology and use it in communicating with each other. Lay people, on the other hand, may have difficulty understanding medical terms of Latin and Greek origin. For example, it is obvious that the medical expression "*the patient was exitus because of hepatic insufficiency*" is not easily understood by everyone. For this reason, physicians prefer vernacular terms instead of medical terms of foreign origin in communication with patients (or lay people). These are easier for the public to understand. For example, what is called "*hepatic insufficiency*" in medical terminology (in Latin) is "*qaraciyər çatışmazlığı*" in Azerbaijani and "liver failure" in English. Therefore, the medical expression "*exitus due to hepatic insufficiency*" will need to be expressed to the patient's relatives as "*death from liver failure*".

Medical terminology based on Greek and Latin is used worldwide through borrowing. These internationally used medical terms are adapted to the morphological structure and phonetic

discourse of the languages of the nations. For example, the term “*Hypertension*” is translated borrowed into Azerbaijani as “*arterial hipertenziya*”. International medical terms can be used as ‘partial borrowing’ in the nations’ own languages. For example, this term “*hypertension*” is generally used as “*yüksək qan təzyiqi*” [high tension] in Azerbaijani. Even the general public is rather familiar with it. However, the terminological equivalent of the term in Azerbaijani is “*yüksək qan təzyiqi*” [high blood pressure]. In English, the medical term “*renal insufficiency*” can either be “*kidney failure*”, a verbatim mirroring of its literal meaning, or “*renal failure*”, a partial borrowing of the medical term. The medical term used in medical texts does not always have a terminological equivalent in the target language. For example, the term *hemothorax* should be translated in a descriptive fashion because this medical term has no corresponding terminological equivalent in Azerbaijani. Therefore, the term *hemothorax* should be explained to laypersons as the “*accumulation of blood in the lungs and chest wall*”.

In a medical text, the use of the terms e.g. “*consumption*”, “*high blood sugar*”, and “*heart attack*” instead of “*tuberculosis*”, “*hyperglycemia*”, and “*myocardial infarction*” is related to the target audience of the text. If the text is written for medical professionals, a specialist language is used steeped in terminology of Latin and Greek origin, i.e. specialized terminology, while in a text intended for the general public, terms adapted to the target audience's level of understanding are preferred. This is because the text should be understandable.

Another challenge that is discussed in this thesis is the scarcity of medical terminology resources. These includes medical dictionaries, textbooks, and journal articles, poses a significant obstacle for medical translators. Reliance on English-language sources can lead to inaccuracies and misinterpretations, as medical terms may not have direct Azerbaijani equivalents or may carry different connotations in the two languages. The lack of Azerbaijani medical literature also limits the exposure of Azerbaijani medical professionals to the latest medical advancements and terminology, further widening the gap between English and Azerbaijani medical discourse. Imagine not finding the proper translation of a medical term even in the dictionaries in a critical situation. This is absolutely unacceptable because it puts patient’s life in danger. For this reason medical translators should be professionals in their field in order to handle this type of situations.

Professional translators play a crucial role in ensuring the accuracy and quality of medical translations. One of the challenges is lack of qualified medical translators in Azerbaijani that poses a formidable challenge. Medical translation is a highly specialized field that demands not only linguistic proficiency but also an in-depth understanding of medical concepts and procedures. Inadequately trained translators may struggle with the intricate terminology, increasing the risk of miscommunication in healthcare settings. Furthermore, the demand for skilled medical translators often outstrips the supply, making it difficult to meet the growing translation needs in the medical sector. Furthermore, translation challenges in public health settings are not limited to medical terminologies, since documents that are required to be translated may vary from complex medical fact sheets to generic information brochures. Therefore, in addition to the traditional linguistic challenges, there are many other considerations that translators need to take into account to produce translations that are appropriate to their target audience. Challenges such as culture, socio-economic, Language proficiency, social status, patient's education level, safety and medical-legal issues, and adhering to translators' code of ethics are examples of those challenges.

The challenges of medical translation from English into Azerbaijani are multifaceted, encompassing linguistic, cultural, and professional factors. These challenges necessitate a nuanced approach to translation that balances accuracy, fluency, and cultural appropriateness. By employing appropriate strategies, such as consulting medical dictionaries, analyzing context and register, considering cultural equivalents, maintaining consistency, and seeking expert consultation, translators can effectively navigate these challenges and contribute to the dissemination of accurate and culturally sensitive medical information in Azerbaijan

## CONCLUSION

In the ever-evolving landscape of healthcare, medical translation plays a crucial role in bridging the communication gap between languages and ensuring that accurate medical information reaches patients worldwide. While medical translation has been practiced for centuries, the 21st century presents unique challenges and opportunities for this specialized field. The emergence of new terminologies make it even more challenging for translators. Every day we can see new developments in the medical sphere as in all aspects. It is undeniable that these new developments come with their challenges. This thesis has delved into the intricacies of medical translation from English into Azerbaijani, exploring the linguistic, cultural, and professional factors that shape this dynamic field. Medical translation serves as a critical link between healthcare providers and patients who speak different languages. It ensures that patients receive accurate and understandable information about their health conditions, treatment options, and potential risks. Effective medical translation can lead to improved patient outcomes, increased compliance with treatment plans, and reduced medical errors.

Medical translation is not without its challenges. The inherent complexity and precision of medical terminology pose a significant obstacle for translators. The lack of standardized medical terminology in Azerbaijani, the prevalence of eponyms and abbreviations, and the challenges of polysemy and homonymy further complicate the translation process. Moreover, cultural nuances and the lack of medical terminology resources in Azerbaijani add to the complexity of translating medical information effectively. Medical translators play a pivotal role in ensuring accurate and culturally sensitive communication in the healthcare field. They possess a deep understanding of medical terminology, cultural sensitivity, and resourceful translation strategies. Medical translators must be meticulous in their approach, constantly updating their knowledge of medical advancements and terminology.

This thesis provides a comprehensive overview of the challenges and opportunities in medical translation from English into Azerbaijani. It highlights the importance of medical translation in ensuring patient safety and well-being. The thesis also emphasizes the need for standardized medical terminology in Azerbaijani and the development of comprehensive medical translation resources. This thesis contributes to the advancement of medical translation by raising awareness of the challenges faced by medical translators and suggesting strategies for addressing these

challenges. It also emphasizes the importance of cultural sensitivity and the need for collaboration between medical professionals and translators. By addressing the challenges highlighted in this thesis, the quality and effectiveness of medical translation will continue to improve, ensuring that accurate and culturally sensitive medical information is accessible to patients worldwide.

## REFERENCES

1. Anthony, P. (2018), *Exploring Translation Theories*, Routledge, 54 p.
2. Angelelli, C. V. (2004). *Medical interpreting and cross-cultural communication*. Cambridge University Press. 3, 52-60 p
3. Bell, R. T., & Candlin, C. N. (2016). *Translation and translating: Theory and practice*. Routledge.
4. Bouresk, A. (2022). *Strategies of translating English Medical Terms into Arabic* (Doctoral dissertation, KASDI MERBAH OUARGLA UNIVERSITY).
5. Byrne, J. (Ed.). (2006). *Technical translation*. Dordrecht: Springer Netherlands. 6 p.
6. Badziński, A. (2019, December 11). Problems in medical translation among professional and non-professional translators: Collocations as a key issue. *Beyond Philology an International Journal of Linguistics, Literary Studies and English Language Teaching*, 16/4, 157–177 p.
7. Badziński, A. (2018). Collocations, equivalence and untranslatability as selected critical aspects in medical translation. *Towards Understanding Medical Translation and Interpreting*, Gdańsk: Wydawnictwo Uniwersytetu Gdańskiego, 235 p.
8. Badziński, A. (2019). Problems in medical translation among professional and nonprofessional translators: Collocations as a key issue. 108 p.
9. Bolden, G. B. (2000). Toward understanding practices of medical interpreting: Interpreters' involvement in history taking. *Discourse studies*, 2(4), 387-419 p.
10. Browne, A. (2016). Selected medical translation problems. *Prace Naukowe Akademii im. Jana Długosza w Częstochowie. Studia Neofilologiczne*, 12(12), 121-128 p.
11. Cadieux, D. C., Lingard, L., Kwiatkowski, D., Van Deven, T., Bryant, M., & Tithecott, G. (2017). Challenges in translation: lessons from using business pedagogy to teach leadership in undergraduate medicine. *Teaching and learning in medicine*, 29(2), 207-215 p.
12. Cantillon, P., McLeod, P., Razack, S., Snell, L., & Steinert, Y. (2009). Lost in translation: the challenges of global communication in medical education publishing. *Medical education*, 43(7), 615-620 p.
13. Chabner, D. E. (2011). *Medical language instant translator*. Elsevier Health Sciences. 1 p.
14. Curt, A., Levi, A. D., & Schwab, J. M. (2017). Challenges to translation and the hippocratic oath by premature termination of spinal cord stem cell–based trials. *JAMA neurology*, 74(6), 635-636.

15. Džuganová, B. (2018). Various aspects of medical English terminology. Towards Understanding Medical Translation and Interpreting, 9-34 p.
16. Flores, G., Abreu, M., & Medina, E. (2000). Limited English proficiency and access to healthcare services in the United States. *Medical Care*, 38, 1188-1195
17. Fischbach, H. (1962). Problems of medical translation. *Bulletin of the Medical Library Association*, 50(3), 462 p.
18. Fischbach, H. (1986). Translation, the great pollinator of science: A brief flashback on medical translation. *Scientific and technical translation*, 6, 89 p.
19. Gelijns, A. C., & Gabriel, S. E. (2012). Looking beyond translation--integrating clinical research with medical practice. *N Engl J Med*, 366(18), 59-61 p.
20. Ghazala, H. S. (2015). Literary translation from a stylistic perspective. *Studies in English Language Teaching*, 3(2), 124-145.
21. Gambier, Y. (1993). BELL, Roger T. (1991): Translation and Translating. Theory and Practice, Londres/New York, Longman, coll. Applied Linguistic and Language Study, 298 p. *Meta: Journal Des Traducteurs*, 38(3), 537.
22. Goldhirsch, J., Halpenny, B., Scott, N., Ma, Y., Rodriguez, M. S., & Abrahm, J. L. (2021). What's lost in translation: A dialogue-based intervention that improves interpreter confidence in palliative care conversations. *Journal of pain and symptom management*, 62(3), 609-614 p.
23. Grego, S., & Grego, K. S. (2021). Accuracy, definition, integrity in medical terminology. 18 p.
24. Hum, M. (2017), *Translation Theory and Practice*, 183 p.
25. Jiang, F., Zhang, J., Wang, X., & Shen, X. (2013). Important steps to improve translation from medical research to health policy. *Journal of translational medicine*, 11, 1-4 p.
26. Kharasch, E. D. (2018). The challenges of translation. *Anesthesiology*, 128(4), 693-696 p.
27. Karwacka, W. (2015). Medical translation. *Ways to Translation*, 271-298 p
28. Kuzmina, O. D., Fominykh, A. D., & Abrosimova, N. A. (2015). Problems of the English abbreviations in medical translation. *Procedia-Social and Behavioral Sciences*, 199, 548-554 p.
29. Lorenc, J. (2018). THE CHALLENGES OF MEDICAL TRANSLATION. (6), 639-643 p.
30. Lockyer, J., Gondocz, S. T., & Thivierge, R. L. (2004). Knowledge translation: the role and place of practice reflection. *Journal of Continuing Education in the Health Professions*, 88 p.
31. McMorrow, L. (1998). Breaking the Greco-Roman mold in medical writing: The many languages of 20th century medicine. *Translation and Medicine*, 14 p.

32. Mehandru, N., Robertson, S., & Salehi, N. (2022, June). Reliable and safe use of machine translation in medical settings. In *Proceedings of the 2022 ACM Conference on Fairness, Accountability, and Transparency* (pp. 2016-2025). 131-134 p.
33. Montalt, V., & González-Davies, M. (2013). *Medical translation step by step: Learning by drafting*. Routledge.
34. Montalt, V., Zethsen, K. K., & Karwacka, W. (2018). Medical translation in the 21st century-challenges and trends. *MonTI. Monografías de Traducción e Interpretación*, (10), 27-42.
35. National Academies of Sciences, Engineering, and Medicine. (2017). *Language Access Services for Healthcare: The Evidence on Effectiveness, Costs, and Implementation*. Washington, DC: The National Academies Press
36. Newmark, P. (1979). A layman's view of medical translation. *British medical journal*, 2(6202), 1405.
37. Newmark, P. (1988). Pragmatic translation and literalism. *TTR: traduction, terminologie, rédaction*, 1(2), 133-145. Nzuanke, S. (2018), *University of Calabar, Technology and translation: areas of convergence and divergence between machine translation and computer- assisted translation*, 153 p.
38. Orujova, I., (2018), "Introduction to Translation", 194 p.
39. Pratt, M. L. (1991). *Contact Zones: A Study of Border Interactions in Literature and Film*. New York: Cambridge University Press
40. Pinchuck, I. (1997). *Scientific and technical translation*. (No Title). 53 p.
41. Pilegaard, M. (1997). *Translation of medical research articles*. *Benjamins Translation Library*, 26, 159-184 p.
42. Popp, J., Matthews, D., Martinez-Coll, A., Mayerhöfer, T., & Wilson, B. C. (2018). Challenges in translation: models to promote translation. *Journal of Biomedical Optics*, 23(2), 107 p.
43. Rivers, K. T., & Rivers, D. L. (2014). Foreign language difficulties in American healthcare: The challenges of medical translation, regulation, and remuneration. In *NATIONAL SOCIAL SCIENCE PROCEEDINGS National Technology and Social Science Conference, 2013* (p. 150).
44. RUSU, M. R., & VÎLCEANU, T. *DIAGNOSING MEDICAL TRANSLATION AND FRAMING CURRENT CHALLENGES* 54 p.
45. Salager-Meyer, F. (1983). Hedges and textual communicative function in medical English written discourse. *English for specific purposes*, 13(2), 149-170 p.

46. Satalkar, P., Elger, B. S., Hunziker, P., & Shaw, D. (2016). Challenges of clinical translation in nanomedicine: A qualitative study. *Nanomedicine: Nanotechnology, Biology and Medicine*, 12(4), 93-100 p.
47. Sheliyna, S. (2018). Medical translation is an art of science. 21-30 p
48. Solet, D. J., Norvell, J. M., Rutan, G. H., & Frankel, R. M. (2005). Lost in translation: challenges and opportunities in physician-to-physician communication during patient handoffs. *Academic Medicine*, 80(12), 104-109 p.
49. Tageja, N. (2011). Bridging the translation gap—new hopes, new challenges. *Fundamental & clinical pharmacology*, 25(2), 163-171 p.
50. UHEROVÁ, Z., & HORŇÁKOVÁ, A. (2013). Medical terminology and its particularities. *Jahr—European Journal of Bioethics*, 4(1), 631-638 p.
51. Venuti, L. (1995). *The Translator as Cultural Negotiator: Discourse, Translation, and Culture*. London: Routledge.
52. Wermuth, M. C., Walravens, M., & Lambot, M. A. (2022). The medical community and collaborative translation challenges, approaches and opportunities. *Journal Of Specialised Translation*, 37 p.
53. Wulff, H. R. (2004). The language of medicine. *Journal of the Royal Society of Medicine*, 97(4), 187-188 p.
54. Wright, B. G. (2010). Moving Beyond Translating a Translation: Reflections on A New English Translation of the Septuagint (NETS). *Translation Is Required*": The Septuagint in Retrospect and Prospect, 43 p.
55. Zheng, C., Li, M., & Ding, J. (2021). Challenges and opportunities of nanomedicines in clinical translation. *Bio Integration*, 2(2), 57-60 p.