Sudan University of Science and Technology

College of Graduate Studies

College of Languages

Investigating Difficulties Encountered by MA Translation Students in Translating Medical Terms from English into Arabic

“Problems and Solutions”.

(A Case Study of MA Translation Students at Bahri University)

تقصي المشكلات التي يواجهها طلاب ماجستير الترجمة عند ترجمة المصطلحات الطبية من اللغة الانجليزية إلى اللغة العربية

"المشكلات والحلول".

(دراسة حالة طلاب ماجستيرالترجمة بجامعة بحري)

A Thesis Submitted in Fulfillments of the Requirements for the Degree of Ph.D. in English language (Translation)

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بسم الله الرحمن الرحيم

قال الله تعالى:

(وَمِنْ آيَاتِهِ خَلْقُ السَّمَاوَاتِ وَالْأَرْضِ وَاخْتِلَافُ أَلْسِنَتِكُمْ وَأَلْوَانِكُمْ ۚ إِنَّ فِي ذَٰلِكَ لَآيَاتٍ لِّلْعَالِمِينَ)

سورة الروم آية 22

Preface

(And among his signs is the creation of the heavens and the earth, and the variations in your languages and your colours: verily in that are signs for those who know.)

Alrum - Aya 22

Dedication

To my beloved parents who have always been a source of inspiration and encouragement, to face the eventualities of life with zeal, enthusiasm and fear of god.

To my brothers for their warm love and to my sincere friends.

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I express my gratitude to all who helped me in conducting this work.

Abstract

This study aims at investigating difficulties encountered by MA translation students in translating medical terms from English into Arabic and also finding solutions for such difficulties. The study used a quantitative approach in both, the investigation and discussing the related problems. It more over، focused on the etymology of different types of medical terms in the course of identifying such problems and finding solutions for them. For data collection the study used a test divided into three questions to explore difficulties that face MA translation students at Bahri University and what are the methods used in translating medical texts, then a questionnaire which contains 15 statements to the English translation teachers about their views on difficulties that face MA translation students. The results obtained from the data analysis showed that the translation of the medical terms posed real difficulties and challenges for the students. Hence, the results highlight the problems of translating medical terms from English into Arabic and the importance of training to work in the medical field as a translator. Also, the study concluded that literal translation, the heavy use of transliteration, explanation, the students' lack of sufficient experience and practice in medical translation, and lack of updated English-Arabic medical dictionaries are factors that have given rise to problems in medical translation. The findings also revealed that Abbreviations, acronyms, eponyms, non-equivalence, neologism, polysemy pose serious translation problems. Moreover, the complex structures that medical terms can be explained to various semantic, lexical and grammatical interpretations. Based on the findings the study came up with a number of recommendations that MA translation students must have a special course in medical translation which

is going to enlarge their knowledge and help them in their career as translators. Also Curriculums supposed to be oriented to meet the needs of future translators. Teachers of translation should be trained on teaching medical courses. The study is also ended by some suggestions for further studies.

Abstract (Arabic Version)

مستخلص الدراسة

تهدف هذه الدراسة إلى تقصي الصعوبات التي يواجهها طلاب الترجمة لدرجة الماجستير في ترجمة المصطلحات الطبية من اللغة الإنجليزية إلى اللغة العربية ، وكذلك تهدف إلى إيجاد حلول لهذه الصعوبات. استخدمت الدراسة منهج التحليل الاحصائي الكمي في كل من التقصي ومناقشة المشاكل ذات الصلة. لقد ركزت الدراسة على أصل الأنواع المختلفة من المصطلحات الطبية في سياق تحديد مثل هذه المشاكل وإيجاد حلول لها. استخدمت الدراسة لجمع البيانات اختبار مقسم إلى ثلاثة أسئلة لمعرفة الصعوبات التي تواجه طلاب ماجستير الترجمة بجامعة بحري كدراسة حالة وما هي الطريقة المستخدمة في ترجمة النصوص الطبية ، ثم استبيان يحتوي على 15 بيان لاساتذة الترجمة باللغة الإنجليزية حول آرائهم حول الصعوبات التي تواجه طلاب ماجستير الترجمة. أظهرت النتائج التي تم الحصول عليها من تحليل البيانات أن ترجمة المصطلحات الطبية طرحت صعوبات وتحديات حقيقية للطلاب. حيث تسلط النتائج الضوء على مشاكل ترجمة المصطلحات الطبية من الإنجليزية إلى العربية وأهمية التدريب للعمل في المجال الطبي كمترجم. كما خلصت الدراسة إلى أن الترجمة الحرفية ، والاستخدام المكثف للترجمة الصوتية (النقهره) ، والشرح ، ونقص خبرة الطلاب في الممارسة الكافية للترجمة الطبية ، وعدم وجود قواميس طبية محدثة من الإنجليزية إلى العربية ، كلها عوامل أدت إلى ظهور مشاكل في الترجمة الطبية.

كشفت النتائج أيضًا بأن الاختصارات ، والمرادفات ، وعدم التكافؤ ، والكلمة الجديدة المستحدثه ، وتعدد المعاني تشكل مشاكل ترجمة حقيقية. علاوة على ذلك ، يمكن تفسير التراكيب المعقدة التي تحتوي عليها المصطلحات الطبية إلى تفسيرات دلالية ومعجمية ونحوية مختلفة.

بناءً على النتائج ، توصلت الدراسة إلى عدد من التوصيات حيث أن طلاب ماجستير الترجمة ينبغي أن تكون لديهم دورة خاصة في الترجمة الطبية والتي من شأنها أن توسع معرفتهم وتساعدهم في حياتهم المهنية كمترجمين. ومن الاجدى أيضًا أن تكون المناهج الدراسية موجهة لتلبية احتياجات المترجمين المستقبليين. ويجب تدريب أساتذة الترجمة على تدريس الدورات الطبية.وخلصت الدراسة أيضًا ببعض الاقتراحات لمزيد من الدراسات والبحوث المستقبلية.

List of Abbreviations

CBC Complete Blood Count

MRI Magnetic Resonance Image

CPR Cardiopulmonary Resuscitation

INN International Nonproprietary Name

CF Cardiac Failure

GP General Practitioner

IMIA International Medical Interpreters Association

UMD Unified Medical Dictionary

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Introduction

Background:

This chapter involves some literary contents under the traditional sub-titles which are statement of the study problems, questions of the study, hypothesis, objectives, significance, methodology, and limits of the study.

1.1 Overview:

Translation is an old craft necessitated by the co-existence of human societies that speak different languages, and are in need of communicating with one another. Translation flourishes as a result of increase of communication between nations, states and organizations. It becomes even more prosperous as a consequence of the growth in commerce and expansion in knowledge and information. This is in addition to the establishment of the too many official and non-official organizations and bodies at all levels; regionally and in the international area. Moreover, it is needless to say that all nations nowadays strive to catch up with development and civilization through gaining access to new advancements in the various fields of science and knowledge. Therefore, institutions and establishments have been set up for translation and principles and theories have been laid for it – which has led to the spread of translation in all of its types.

What has been mentioned above is, perhaps, the main reason behind the increasing feeling of the utmost significance of translation in this era, in which the world has become a global village with thanks to the remarkable

advancement in communication media, quality-wise and quantity-wise, which has motivated communication between people at all levels and in different fields. This is why translation has become a vital requirement and all people have started to realize its significant role in their personal and professional life. The language of technology, computers, the net and the social media instituted and stressed the already mentioned.

On the other hand, medical thoughts and terminologies had been written since many years ago. Today, there are still new discoveries made, and much knowledge is to be gained within medicine. Every time there is news within the medical world; this news need to be shared with the whole world.

Based on the huge development of medical science and practice, the translation of medicine has become the leading language to come up with medical revolution.

In this study, the researcher wants to shed light on Translating English Medical Terms into Arabic Language by MA Students Majoring English language "Translation" Problems and Solutions seeking for the proper translation of medical terminologies.

1.2 Statement of the Problem:

The language of medicine is founded on Greco-Latin terminology and has specific lexical and discourse features. The global spread of science and technology has made the English language of international communication. Due to huge development of medical science and practice, the English language of medicine has become the leading language. Modern medicine has transgressed the boundaries of the Greco-Latin terms and must create a new terminology for medical branches, illnesses, disorders, new discoveries

of medicines and medical registration. The English language of medicine has been extensively studied. It serves as a model for other nations as to how to create their languages of medicine which are under its strong influence.

Medicine has numerous specializations and sub specializations which require specific language of medicines.

Therefore, in this study the researcher notices that there are difficulties in translating medical terms encountered by English language students at university level hence, the researcher wants to shed light on problems and solve these difficulties, in particular, Arabic and Sudanese students are subjected to various linguistic influences.

1.3 Questions of the Study:

1- To what extent do the MA Translation students majoring English language "Translation" encounter difficulties in translating medical terms?

2- According to the views of the teachers of translation, why do MA translation students face difficulties in translating medical terms?

3- What are the translation methods used by MA translation students in translating medical terms?

1.4 Hypotheses of the Study:

1. MA students of translation are expected to encounter difficulties in rendering medical terms.

2. Teachers of translation view that the difficulties facing MA translation students may be attributed to the lack of updated English –Arabic dictionaries, failure to find the accurate equivalent of English medical terms in Arabic, understanding affixes and understanding the origin of

medical terms.

3. Translation, explanation, and transliteration are expected to be the commonest translation strategies used by MA Sudanese students of translation in rendering medical terms.

1.5 Objectives of the Study:

This study is about to explore the world of medical languages with special emphasis on translating medical terms with the following objectives in mind:

1- Very few studies in this domain have been carried out in Sudan as far as the researcher knows, and hence this present study is a breakthrough in this field.

2- The study will have good implications for students of translation particularly those who are specialized in medical terms translation.

3- The study will further urge many researchers to conduct similar studies in other genre of medical terms.

1.6 Significance of the Study:

Medical terms seem to be a somewhat neglected area within translation researches, medical files of patients, and case studies, and therefore Medical translation is necessary in order for medical professionals to provide the necessary care and treatment to patients who speak another language. It is important for healthcare professionals to be able to communicate effectively and efficiently with their patients no matter what language they speak. Hence, the aim of this thesis is to discover the difficulties of translating medical terms that encounter university student with recommendations for translating medical language for experts, semi-experts, translators, teachers and laypersons respectively.

1.7 Methodology of the Study:

- This study will use the descriptive analytical method.
- A test will be used to examine M.A students of translation, college of languages at Bahri University which will consist of medical terms as a tool in this study.
- A questionnaire will be distributed to English translation teachers as data gathering tool.

1.8 Limits of the Study:

This study will be limited to translate medical terms only at university students (MA translation student at Bahri University as case study).

The time allocated for the test and questionnaires is only three months which is relatively short in 2019.

Chapter Two

Literature review and previous studies

Chapter Two

Literature review and previous studies

Introduction:

This chapter includes literature reviews and previous studies along with related issues of topics

A: Literature Review

2.1 Etymology of Translation.

Christopher Kasparek(1983:83) states that The English word "translation" derives from the Latin word translatio, which comes from trans, "across" + ferre, "to carry" or "to bring" (-latio in turn coming from latus, the past participle of ferre). Thus translatio is "a carrying across" or "a bringing across": in this case, of a text from one language to another. Also Etymologically, "translation" is a "carrying across" or "bringing across." The Latin "translatio" derives from the past participle, "translatus," of "transferre" ("to transfer" — from "trans,""across" + "ferre," "to carry" or "to bring"). The modern Romance, Germanic and Slavic European languages have generally formed their own equivalent terms for this concept after the Latin model — after "transfer" or after the kindred "traducer" ("to bring across" or "to lead across"). Additionally, the Greek term for "translation" "metaphrasis" ("a speaking across")," (Kasparek: 1983: 83-84).

2.2 Definition of Translation.

Translation is a mental activity in which a meaning of given linguistic discourse is rendered from one language to another or it is a process of

substituting a text in one language for a text in another language. It is the act of transferring the linguistic entities from one language into their equivalents into another language; Translation is an act through which the content of a text is transferred from the source language into the target language (Foster, 1958). The language to be translated is called the source language (SL), whereas the language to be translated into or arrived at is called the target language (TL). The translator needs to have good knowledge of both the source and the target language, in addition to a high linguistic sensitivity as he should transmit the writer's intention, original thoughts and opinions in the translated version as precisely and faithfully as possible.

Due to its prominence, translation has been viewed differently. According to Ghazala (1995), "translation is generally used to refer to all the process and methods used to convey the meaning of the source language into the target language" (P.1. Ghazala's definition focuses on the notion of meaning as an essential element in translation. That is, when translating, understanding the meaning of source text is vital to have the appropriate equivalent in the target text thus, it is meaning that is translated in relation to grammar, style and sounds (Ghazala, 1995).

Translation is a process and a product. According to Catford (1995), translation is the replacement of textual material in one language (SL) by equivalent textual material in another language (TL) ", (p 20). This definition shows that translation is a process in the sense that is an activity. Performed by people through time, when expressions are translated into simpler ones in the same language (Rewording and para-phrasing). It can be done also from one language into another different language. Translation is, on the other hand, a product since it provides us with other different cultures,

to ancient societies and civilization life when the translated texts reach us (Yowell and Mutfah, 1999).

According to the above definitions we conclude that translation has steps to follow which are:

1- Reading the text.
2- Understanding the text.
3- Substituting the meaning, ideas, words, culture, and equivalences.
4- Reproduction of the text
5- Decision making process of translation.

2.3 History of Translation.

Since the beginning, civic establishments have required interpreters and mediators to share their way of life, shrewdness and works with whatever remains of the world. Pretty much every verifiable enroll, religious book, magnum opus of world writing, innovation patent, real understanding or worldwide arrangement has experienced the hands and eyes of interpreters. The interpretation of the Hebrew Bible into Greek in the third century BC is viewed as the main real interpretation in the Western world. In a way, interpreters are the extension between various dialects, as well as between times of history, helping individuals everywhere throughout the world break the dialect hindrance. Interpreters and mediators invest a ton of energy exchanging and adjusting writings and talks from the source to the objective dialect. So it's a given that the birthplace of the thing interpretation — and, by expansion, (to) decipher and interpreter—, has the right to be investigated on this blog.

The Arabs have better-known translation since their earliest times, and Dr. Abdulsalam Kafafi, in his book "Comparative Literature", noted that the Arabs were "traveling to exchange summer and winter and being influenced by their neighbors in numerous aspects of life. They knew the country of the Persians and emotional colours from their culture. Farsi to Arabic, and appeared within the poetry of the best poets, and was the foremost famed of the folks that used their Persian words, similarly as some knew their neighbors Byzantines. The Arabs, since their content of the 3 peoples encompassing them, the Romans within the north and also the Persians within the east and also the Ahbash within the south. it's tough to form such literary and economic connections while not the existence of a translation, albeit in its primitive stages. In the time of the Ommiah state, the dawaween had been translated, and also the translation movement was involved with blue blood Khalid bin Yazeed bin Mu'awiyah ibn AbiSufyan.
In the Abbasid era, once the Arab conquests, the enlargement of the Arab state towards the East and West, and also the direct contact of the Arabs with alternative neighboring peoples, particularly the Persians and Greeks, particularly within the Abbasid era, the requirement for translation accumulated. The Arabs translated the Greek sciences, They translated Greek medication, astronomy, arithmetic, music, philosophy and criticism، also Aljahid on his book(Alhayawan) points on the interference of languages,the source and the target text. The translation movement reached a complicated stage within the era of the swayer Harun al-Rashid and his son al-Ma'mun , UN agency says that he would grant some translators like Haneen ibn Ishaq up to the load of his books into Arabic gold. it's better-known that al-Ma'mun based Dar al-Hikma in Bagdad with the aim of activating the work of translation. Ibn Ishaq translated and authored several

books and sciences, and his son patriarch Ibn Haneen ibn Ishaq continuing this work. In the ninth century, the Arabs translated most of the works of Aristotle , and there are several works translated from Greek to Arabic, and lost its Greek origin later,they came back to the Greek language through the Semitic, that if it didn't translate into the Semitic for the ultimate. Translators like Haneen ibn Ishaq and Thabit ibn Qurra were fluent in Arabic and Syriac similarly because the sciences they translated. Hanin ibn Ishaq had lived in Hellenic Republic for the aim of learning the Greek language. The sentence was translated into a sentence that was identical in Arabic, and it didn't translate each single word, as John Ibn El -Batin, Ibn Homsi et al. translated. Likewise, the style within which Haneen ibn Ishaq followed is that the best. Among the books translated by Haneen mountain patriarch the book "Ethics" of Aristotle, and "nature" of the author himself. Within the Abbasid era, the Arabs were involved concerning the accuracy of the interpretation, and for this reason many translations of 1 text appeared. for instance, Abu-Bishr translated Matthew ibn Yunus's book "The Poetry" of Aristotle (384-322) and was translated once more by Yahya ibn Uday. The repetition of the interpretation indicates its accuracy. At the same time, translation began within the Abbasid amount from Arabic to foreign languages, and orientalists mentioned the role of Arabs in European civilization throughout this era. As some Western writers pointed to the virtue of Arab science on the West, we have a tendency to recall from the German author dramatist (1749-1832).

*إن الثمانين – وقد بُلِّـغْـتَـها *** قد أحوجتْ سمعي إلى ترجُمان*

In the above verse, we found the word Turjoman which translated into Dragoman and as Wikipedia points that the word dragoman was an

interpreter, translator, and official guide between Turkish, Arabic, and Persian-speaking countries and polities of the Middle East and European embassies, consulates, vice-consulates and trading posts. A dragoman had to have knowledge of Arabic, Persian, Turkish, and European languages.
In Sudan, during colonization, the foreign people needed to translate for understanding Sudanese slang languages, and it flourished at Nabilion Bonabort French campaign, so we have a village in Sudan called Altrajmah(التراجمه).

In the west, the date of interpretation in the West goes back to the interpretation of the Septuagint, which Is the primary interpretation of the Old Testament from Hebrew to Greek. It was known as the Septuagint interpretation since it chipped away at Deciphered seventy-two interpreters, as the main clerics in Israel around then, Interpreters to Alexandria in line with the Governor of Egypt, to decipher The Torah to help the Jewish people group in Egypt, which he couldn't peruse The Old Testament is in its unique Hebrew. This interpretation later turned into the reason for different interpretations, which were deciphered at that point to Armenian, Georgian, Latin, Coptic and furthermore Slavic. also, in spite of the fact that (the interpretation of the Septuagint) was poor by and by, just that Has not undermined its picture; despite what might be expected, it is still interpretation Which has been received by the Greek Church to date, however the bible has been the reason for various interpretations into Different dialects in the old Mediterranean nations. In The Middle Ages interpretations have been moderately influenced by interpretation, and the purpose behind this is because of conviction "The individual isn't a mastermind and a researcher in the genuine sense unless he composes in

Latin), so masterminds and researchers composed their thoughts in Latin They realized it well notwithstanding their essential dialect. Each portrays them as a motivation and a real craftsmanship dependent on non-abrasiveness of articulation It isn't troublesome for Forster to know the interpretation Great on it: an interpretation that satisfies indistinguishable reason in the new dialect from it did Unique reason.

In Sudan we have Sudanese translators who practice medical translation such as Algenaidd,Ali Almak,and Abu Giseesah.

2.4 History of Medical Translation.

Probably the earliest records of antiquated medication that we have are from the compositions of Homer from about the eighth century BC. He is said to have formed the Iliad while he functioned as a vice president of medicinal staff amid the Trojan War, and his Iliad contains some point by point therapeutic portrayals (Nutton 2013). In any case, the antiquated therapeutic works that were most persuasive for the advancement of Western drug are credited to Hippocrates, Dioscorides and Galen. Perhaps the most punctual records of old drug that we have are from the compositions of Homer from about the eighth century BC. He said to have made the Iliad while he filled in as a vice president of therapeutic staff amid the Trojan War, and his Iliad contains some point by point restorative portrayals (Nutton 2013). In any case, the antiquated restorative works that were most compelling for the improvement of Western drug are ascribed to Hippocrates, Dioscorides and Galen. The Muslim time frame and the Graeco-Arabic interpretation development came in the early Middle Ages, there was a lot more noteworthy enthusiasm for the Greek medicinal legacy in the Middle East

than in the West. Sergius of Reshaina is an early precedent. He was a specialist who deciphered some of Galen's works into Syriac in the sixth century (Clagett 1955, Montgomery 2000). Medical procedure was trailed by other striking interpreters, as an example, Ibn Masawaih (c. 777-857), a specialist from Gundishapur and the dad of Hunayn ibn Ishâq (Vadet 2016). Ibn al-Batriq (dynamic 796-806) interpreted a portion of the more vital Hippocratic and Galenic writings from Greek to Arabic, despite the fact that his restorative interpretations were exceptionally strict ('verbum promotion verbum') and many were later amended by Hunayn ibn Ishâq. Be that as it may, Middle Eastern commitments to drug were not obliged to therapeutic interpretation of early Greek creators. Doctors, for example, Al-Razi , Ibn Cinaa and Avicenna not just examined and condensed the Hippocratic and Galenic writings they likewise created autonomous and critical commitments to therapeutic science. The time of Arab restorative interpretation began "From about the center of the eighth century as far as possible of the tenth, all non-artistic and non-chronicled mainstream Greek books that were accessible all through the Eastern Byzantine Empire and the Near East were converted into Arabic" as referred to by (Gutas 1998). This colossal attempt occurred principally in Baghdad and was bolstered by the 'Abbãsid caliphs as well as by the higher classes of Arabic culture, albeit the vast majority of the interpreters were Syriac-speaking Christians. A critical consequence of this development was that antiquated Greek therapeutic learning that had been disregarded or lost in the West was restored and revived within the Middle East and at last passed on to Europe and the soonest colleges. Characteristic of Toledo is archived as having been an ordinance at the church of Toledo from 1193 to 1216 and is one of only a handful couple of interpreters of the Arabic-Latin development separated

from Gerard to have deciphered restorative writings, including Galen's On Pulses, On the Usefulness of Pulses, and On Obvious and Hidden Movements, of which the Greek content has been lost (Burnett 2005).

2.5 Scientific Translation.

Hager (2000) states that: “translation is at the heart of international scientific and technical communication”.in addition to that, Yowell and Lataiwish (2000) claimed that terminology could be one of the most serious obstacles that may face translators of scientific texts, especially, if the target language is Arabic. Likewise, Kingscott (2002:247) states: “It has been estimated that scientific and technical translation now accounts for some 90% of global translation output” (as cited in, Gharsa M. Argeg (2015), p.18).

Scientific texts are typically written for consultants around the world and contain vital study findings, investigations and analysis results. They are written exploitation scientific language and infrequently contain a mess of field-specific terms. Universities, faculties and analysis establishments trust heavily on skilled translators. The content of the text and respect to the present state of analysis and literature should be conclusive, correct and consistent. As a result of the contents of those field-specific texts and their translations are typically employed in science by more authors or quoted as sources within the preparation of on own new scientific literature, correct translation is one of substantial importance. The scientific translation, therefore, might not contain any errors and should be ready with tutelage by a competent, qualified translator.

Scientific translators have an excellent responsibility for the accuracy and dependableness of their texts, as scientific works typically still be scanned for several years when publication, furthermore as excerpted, quoted and employed in more work by different analyzers and research facilities or institutes in different countries.

Medical translation is a branch of scientific and technical translation and it is a very important type of translation. Montalt (2011) emphasizes that medical translation is one of the most active types of professional translation, for Nida's (1964) point of view:" it is not easy at all to translate scientific terms that emerged in western developed countries languages into a language of a third world countries which are still having financial and social problems". Medical translation is one of the most active types of professional translation. Many medical articles/texts and terminologies are constantly written and many of them required to be translated. For instance, medical professionals for whom English is a foreign language are often perfectly capable of understanding medical article about Dermatology in English. However, laypersons and semi-experts for whom English is a foreign language, it might be difficult to them to understand English medical articles about Dermatology. Being an educated translator means that you are a language expert in the languages you have studied and you are expected to be able to translate any text from any field of language, be it legal, lateral, economic, business, technical or medical. Translation is a crucial factor in substituting knowledge and new discoveries in the medical field globally. Medical translation does not concern a single genre or a homogenous discourse. The translated texts do not only include popularizations, such as textbooks for medical students, popular science book on medicine, but also

research papers, conference proceedings, case studies, and case histories, which need translation.

2.6 Methods and Techniques of Translating Medical Terms:

All fields of translation are equally vital and involve specific options, difficulties, ways and methods. One of these methods which can help in translating medical terms is Direct and Oblique method. Jean Paul Vinay and Jean Darbelnet in the 1950s wrote a seminal work that became very important for the practitioners of translation. They came up with seven methods of translation and as many ways to attain equivalence. Their view was that if literal translation or direct translation was impossible, then the translator would have to resort to what they termed oblique translation. Oblique translation is another term for free translation or indirect translation where the translator exercises his/her freedom to attain equivalence. Direct method divides into:

1- Borrowing (الاقتباس) 2- calque (النحل) 3- literal translation (الترجمه الحرفيه)

Indirect translation or oblique translation divides into:

1- Transposition (الابدال)2- Modulation (الاقتباس)3- Equivalence(التكافؤ)
4- Adaptation (التكييف)

2.6.1 Borrowing:

Bosco (1997) says that" borrowing means using foreign terms from SL and put them into TL. These words are naturalized to agree with the grammar

and the pronunciation of the target language. Finally, these terms become part of the lexicon system of the target language as in Arabic language"

For example:

Anemia – أنيميا

Vitamin - فيتامين

Djinn: Jinn is a word of the collective number in Arabic, derived from the Arabic root ǧ-n-n meaning 'to hide' or 'be hidden'. Other words derived from this root are maǧnūn 'mad' (literally, 'one whose intellect is hidden'), ǧunūn 'madness', and ǧanīn 'embryo, fetus' ('hidden inside the womb').

Also the English language has borrowed numerous words from different Languages. For example:

pancreas – بنكرياس

Malaria – ملاريا

2.6.2 Calque:

Calque refers to a term or an expression introduced into another language by 'literally' translating it from the original language, with no grammatical or semantic adjustments. Bosco (1997) claims that: "It is to translate a phrase borrowed from SL literary, maintaining the source language structure and the manner of expression which may not be familiar to TL".

Example:

Test-tube babies / اطفال الانابيب او اطفال انابيب الاختبار

Warm blooded – من ذوات الدم الحار

2.6.3 Literal Translation:

Literal translation of terms, also called pure translation. This mechanism involves translation from the SL into the TL and the preservation of the same effect and wording of the source text, where only the language is changed. In the literal translation, changes which may affect the source text structures are not allowed for instance:

Oxygen – أكسجين

Carbon dioxide – ثاني اكسيد الكربون

Biology: بيولوجي

2.6.4. Transposition:

It is to change part from the parts of speech in another part without prejudice to the whole meaning and may be within the same language.as we said in Arabic:

يسرني أنك معافى

إلى:

سرني تعافيك

Or as we say in English language:

To jog in the morning is healthy.

To: *jogging in the morning is healthy.*

In the above example we replace

1- *To jog* – infinitive

To:

2- *Jogging* – Gerund

2.6.5 Equivalence:

Medical terms cause the foremost issues in translating medical texts and therefore, there are a lot of medical terms that seem within the supply text, more over there are a lot of issues arise in translating the lexical things into the target text. During this state of affairs, translators typically use bilingual medical dictionaries however these are typically not updated within the target language and this, in turn, might have an effect on the interpretation.

So a translator can give some thought to the notion of equivalence that is one among the most options of translation study.

Vinay and Drabelnet (cited in Cronin2003: 121) describe equivalence as "The process of replacing elements in the ST with corresponding elements in the TT so as to replicate the same situation as in the original whilst using completely different wording.".

The translator of technical texts should be aware of the technical terms in the field he/she is translating in the SL and the intended meaning of the text and give the appropriate equivalent for each term in the TL. For example,

"All drugs should be stored in a dark and dry place."

Drugs, in the sentence, may either refer to medicine or to illegal substances. Equivalence refers to the relationship between two texts: a source text (ST) and a target text (TT). A translator's failure to achieve an appropriate equivalent translation can result in a mistranslation which may be misleading in most fields but which can be fatal in the field of medicine (Baker and Saldanha, 2009). Problems of equivalence occur at various levels, ranging from word to the textual level.

2.6.4.1 Grammatical Equivalence:

Grammatical rules vary across languages. Each language has its own grammatical rules which pose some problems in terms of finding a direct correspondence in the TL. Baker (2011: 88) states: "Grammar is the set of rules which determine the way in which units such as words and phrases can be combined in a language and the kind of information which has to be made regularly explicit in utterances."

In this respect, the information in a text should be organized and linked by grammatical rules in order to be understood and a translator should be aware of these grammatical rules in both the SL and the TL. Having knowledge of the grammatical structures in the SL and in the TL is very important for the translator to be able to produce an accurate translation.

Baker (2011) argues that grammar is organized along two main dimensions: morphology and syntax.

Morphology covers the structure of words and the ways in which the form of a word changes to indicate specific contrasts in the grammatical system. Syntax covers the grammatical structure of groups, clauses and sentences. A translator should bear in mind the different aspects of grammar in the SL and in the TL. Baker (2011) states that, unlike the Arabic grammatical system, the English system makes very few distinctions in terms of number, gender and verb agreement. For example, in English, there are few distinctions between masculine and feminine. Consider the following examples:

The word '*patient'* can be translated into Arabic as مريض *marid* (masculine) or مريضة *marida* (feminine).

The word *'child'* can be rendered into Arabic as طفلة *tifla* (feminine) or طفل *tifl* (masculine).

So, the following sentence could be translated into Arabic in two ways, in regard with the word *'patient'*:

"The patient will need an operation within the next two weeks."

Can be translated as:

يحتاج المريض الى عملية جراحية في خلال الاسبوعين القادمين (masculine)

yahtaj al-marid ila amaliyya jirahiyya fi khilal al-usboayn al-qadimayn

Or as:

تحتاج المريضة الى عملية جراحية في خلال الاسبوعين القادمين (feminine)

tahtaj al-marida ila amaliyya jirahiyya fi khilal al-usboayn al-qadimayn

In this situation, if the context is not helpful for arriving at the correct choice, the translator may use both translations separated by a slash as:

تحتاج المريضة | المريض الى عملية جراحية في خلال الاسبوعين القادمين

tahtaj al-marida / al-marid ila amaliyya jirahiyya fi khilal al-usboayn al-qadimayn

English uses singular and plural forms, whereas Arabic uses singular, plural and dual forms which affect the form of the sentence. For example:

The affected finger

الاصبع المصاب *al-isbaa al-musab* (singular)

The affected fingers

Could be

الاصبعان المصابان *al-isbaan al-musabaan* (dual)

Or

الاصابع المصابه *al-asabi al-musabah* (plural)

The meaning depends on the context of the situation and any choice affects the use of other sentences' components such as verbs, adjectives, etc.

2.6.4.2 Cultural Equivalence:

Culture means the manners that are favored by a certain group of people in a certain place in the world and their way of living, including their society, ethics symbols, customs, values, daily activities, ways of thinking, geography, history, science and arts. Their manners and way of living can have an impact on their language. Hence, translation involves not only a movement between SL and TL but also between their cultures. Faiq (2000: 1) states: "Culture refers to beliefs and value systems tacitly assumed to be collectively shared by particular social groups and to the positions taken by producers and receivers of texts, including translations, during the mediation process."

Within this framework, a language is intrinsically linked to its culture and translation can thus be used to describe and explain the world views of one people to another (Alma'ni, 2000).

On the other hand, a language is influenced by its culture. So a translator should have background knowledge of both the language and culture of the SL and the TL.

For example, different peoples express their feelings of pain in different ways. For instance, if one of them hurts his finger when he beats a nail:

Arabic person says: *"آخ"*

English person says: *"Ouch"*

French person says*: "Aie"*

Even in one country like Sudan people at North Darfur-city of Alobaied say:

عندي وجع نوايط *indy wajaa nawaiyet.*

When they are complaining from pain on their kidneys by using slang languages.

Many English words do not have an equivalent in Arabic because they do not exist in Arabic culture; for example, an expression like *'partner'* does not exist in Arabic culture and can be translated into Arabic only as *زوج zawj* or *شريك shareek* which means husband. In English culture, there is a difference between using these expressions (partner and husband) as husband refers to the married man, but partner usually refers to one of a couple who live together without marrying or it refers also to the student who sit beside his or her colleague inside the class when the teacher says "answer this activity with your partner". Also sometimes a translator needs to use the opposite meaning to translate a sentence from English into Arabic so to be understood by the TL reader in the same way that the SL reader understands it. For example:

You warm my heart

Can be translated into Arabic as:

اثلجت قلبي athlajta qalbi

Which literally means:

You cooled my heart

This expression is used in both cultures, when one hears good news that one is waiting for. But in Arabic the word *'cool'* is used instead of *'warm'*. Perhaps the Arabs prefer *'cool'* as they live in hot countries, while the English prefer *'warm'* as they live in a cold country.

In this regard, the translator needs to have a cultural awareness of both languages and be aware of the cultural differences between the SL and the TL.

Cultural gaps between Arabic and English are inevitable and cannot be easily bridged especially when translating literature such as novels and poems. In the medical field, culture does not affect translation too much and it is more important for the translator to have knowledge of the subject matter and of medical terminologies than knowledge of culture of the SL and the TL.

2.6.4.3 The Problem of Non-equivalence:

As is self-evident, all languages are different, and this makes it hard to find appropriate equivalents for some words or concepts in the target languages. An Arabic translator sometimes faces the problem of finding lexical equivalents for English words, objects and events in Arabic. Baker (2011: 23) states "non-equivalence at word level means that the target language has no direct equivalents for a word which occurs in the source text."

Many English words and concepts have no equivalents in Arabic and vice versa. Medical translations ought to be localized. Localization addresses cultural components like healthful dosages (ounces versus grams or milliliters), acronyms like TBD (twice per day), as an example, most

countries address their doctors and medical professionals in numerous ways that some cultures still have ancient drugs combined with trendy drugs. There are variations in time, personal area, and also the means within which procedures are scheduled and administered.

In several cultures, the means professionals are self-addressed is extremely necessary. To use the incorrect formality within the language would be terribly offensive, whether or not the content itself were correct.

2.6.5. Mechanisms of Translating Medical Terms into Arabic:

2.6.5.1 Terminologies:

Medical texts are historically characterized by scientific terminology which defines the biological and physiological universe according to very specific holistic criteria. One issue that comes up in medical translation is proper terminology. For instance, in the table below there are some Lay Terms with their Corresponding Scientific Medical Terms.

Lay terms (popular terms)	**Scientific terms**
Tummy	*Abdomen*
Fit	*Epilepsy*
Baby (during pregnancy)	*Fetus*
Bleeding	*Hemorrhage*
Toothache	*Dentalgia*

When translating medical documents, the medical translator should use the scientific term or the layman's term for a medical condition, treatment, or diagnosis. Lungu (2015:13) explains that terms are components of a

specialized language that represents the denomination of concepts in a specific scientific or technical field, and that they have a strictly referential function. Newmark (1979:1405-1407) warns translators of the abundance of synonyms and false friends (defined by Newmark as misleading cognate words) in medical texts. He suggests that translators use bilingual special purpose dictionaries in combination with monolingual special purpose dictionaries. Williams (1996:275–299) added a recommendation about target texts after conducting a study on translators' use of references, which showed that a combination of the use of dictionaries and target texts was the most successful way to translate medical texts. The medical translator hence needs access to specialized dictionaries and relevant target texts. These need to be up-to-date, since, as pointed out by Cabré (1999:4), the rapid development of science and technology contributes to the creation of new terminology. Examples of new terminology from the consensus statements that were translated in this study concerns *pre-hospital equipment*, which is in constant development, as well as new medical techniques like blood recycling. Another example, *spondylolysis* is a combination of *"spondylo*, " which means *vertebra*, and *"lysis,"* which means *dissolve*, and so means dissolution of a vertebra.

2.6.5.2 Compound Words:

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, Black Death.*

Compound words may be written: 1. as two/three words:

Blood pressure, blood group, heart attack, sleep walker, central nervous system; 2. With a hyphen: *life-span, collar-bone, birth-control*; or 3. as one word: *gallstone, hemophilia, leukocytopenia*. 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. For instance: *life span – life-span; gall bladder – gallbladder.*

Trask (1993:53) defines the process of compounding in very general terms, as "The process of forming a word by combining two or more existing words: *newspaper, paper-thin, babysit, video game*". As can be noted in these examples, there are three different ways of forming compounds in the English language: compounds can appear in solid form, as in *newspaper*, they can be hyphenated as in *paper-thin*, or appear as separate words, as in *video game*. Nakov (2013:295) claims that the solid form of compounds, which he calls "concatenated" compounds, are almost exclusively used in Germanic languages, like Swedish. Hellspong & Ledin (1997:72) confirm that the most common way to create Swedish specialized terms is by compounding. Different word-classes can combine in compounds, e.g. Adj+N, Adj+V, N+N, and the word class of the compound is usually decided by its last word according to Nakov (2013:293). From here on, focus will lie on N+N compounds.

Compound words can be formed when 2 or more word roots are used to build the word. Sometimes word roots are words.

Word root	+	word root =	Compound word
Chicken	+	Pox	= Chickenpox

Compound word can also be formed from a combining form and a whole word.

Word root		word root		compound word
Therm/o	+	meter	=	Therm/o/meter
Combining form		word		compound word

More examples for Compound words:

Micr/o + scope	*Microscope*
Micr/o + surgery	*Microsurgery*
Micr/o + meter	*Micrometer*
Hydr/o + phobia	*Hydrophobia*
Hydr/o + cele	*Hydrocele*
Hydr/o + therapy	*Hydrotherapy*

2.6.5.4. Acronyms and Abbreviations:

The medical world is full of acronyms and abbreviations. While English is the lingua franca in medicine and many of the English abbreviations and acronyms are adapted by other languages, there are exceptions and the translators have to deal with this. Richard & Hohulin (1982) define an acronym as "combining the initial letter or letters of each of the elements making up the complex lexical units." (p. 27)

Acronym is a word form may be a word shaped from the initial letters of a bunch of words, whereas an abbreviation may be a shortened style of a word or phrase. Richard & Hohulin (1982: 27) outline an abbreviation as: "a

shortened style of a word or a phrase, however not essentially solely the initial letter or letters." They outlined a word form as combining the initial letter or letters of every of the elements creating up the complicated lexical units. Acronyms and abbreviations in Roman script are nearly always written in capital letters. for example:

WHO is the acronym for the *World Health Organization.*
CBC is the acronym for the *Complete Blood Count*.

(Jablonski, 2005: 22). Cites that Acronyms and abbreviations are quite common in English, particularly within the medical field, and many medical terms are written as acronyms and abbreviations". Kasprowicz (2012) argues "that medical English employs a good several abbreviations and acronyms. He believes that the popularity of such shortened forms in medical language is because of the historical tradition of the language of drugs, and therefore the economy in area and time they supply. In Arabic there's a scarcity of medical abbreviations and acronyms and that they are seldom used. Newmark (1988: 148) argues that "Arabic resists most acronyms and explicates them". Therefore, in translating acronyms and abbreviations, the Arabic translator undertakes a direct translation for every individual word. To exemplify this, think about the example:

MRI is an acronym for '*magnetic resonance image'* which is translated into Arabic as: *التصوير بالرنين المغنطيسي*

For common English medical acronyms, a translator may use a direct translation of the English name. For example:

AIDS (Acquired Immunodeficiency Syndrome)

Is translated into Arabic as:

مرض عوز المناعة المكتسبة الايدز

Monolingual medical dictionaries are helpful so as to test the meanings of some acronyms and abbreviations that cannot be found in bilingual dictionaries like English- Arabic dictionaries. However, there's a controversy with translating acronyms and abbreviations, which is that one term could account for various linguistics references. During this regard, Byrne (2012: 51) points out: "abbreviations and acronyms, which are just as specialized, and which may have a number of different meanings depends on the subject, the context or even the company or organization which produces the text."

For instance, the acronyms *HP* can be used to refer:

History and Physical Examination

Or

Heart Pulse

2.6.5.5. The Word Root:

The main part or stem of a word is called a root word. A root word conveys the essential meaning of the word and frequently indicates a body part. With a combining form, the root word and a combining vowel such as i, e, o, or a may be combined with another root word, a prefix, or a suffix to describe a particular structure or condition.

A frequently used term is *CPR*, which stands for *cardiopulmonary resuscitation*. When we break it down, *cardio* is a root word meaning "*heart*," and *pulmonary* is a root word meaning "*lungs.*" By performing *CPR* we introduce air into the lungs and circulate blood by compressing the heart to resuscitate the patient. Some root words may also be used as prefixes or suffixes. Hutton (2006:2) states that "roots are the fundamental medical words. Additionals are derived from early Greek and Roman (Latin) words. Others have their origins in Arabic, Anglo-Saxon and German." as an example, the primary root of the term *cytogeny* is *cyt* that comes from the Greek word *kytos*, meaning cell.

The suffix genesis means that origin thus *cytogeny* means that the origin and development of cells. Several terms are often engineered up from the identical root; think about these examples:
Electrocardiogram.
Cardiology.
Cardiovascular sickness.

periodontitis
All the above terms are associated with cardio {which means heart; graphical record means a record of the electrical activity of the center, medical specialty refers to the study of the center, *cardiovascular sickness* may be a disease affects the center and blood vessels, *cardiology* means that Associate in heart diseases of the outer layer of the center (Webster's Medical wordbook, 2007). A root can even be found within the middle of a term like in *periodontitis*. The prefix *peri* means close and therefore the suffix *itis* means inflammation, thus *periodontitis* means that Associate in gum inflammation of the area surrounding the teeth. Sometimes the root can

be used at the end of words such as *lymphocyte* which means white blood cell formed in the bone marrow and distributed throughout the body in lymphatic tissue (Stedman's Medical wordbook, 2006*). Cyte* , which means cell, is that the root. Medical terms might contain over one root. The term *neurocyte* consists of neuro meaning nerve and *cyte* that means cell, that means of *neurocyte* is, therefore nerve cell. Some medical terms have over 2 roots as "neuroencephalomyelopathy" that may be a disease of the brain, medulla spinal cord and nerves. The term "neuroencephalomyelopathy" are often divided into 3 roots: *neur-o-encephal-o-myelo* and therefore the suffix *pathy*.

Knowing which part of the term is the root and understanding the meaning of the root helps to get the meaning of the entire term.

2.6.5.6 prefixes:

A prefix could be a part of a word. It's found at the beginning of a word, as in ***anti****body*, ***per****anum*, ***oro****nasal* etc. every prefix has a meaning, for instance, *anti* means against, *per* means through etc. Prefixes sometimes augment modification or modify the means of the word root. For instance, the word *natal* means pertaining to birth; adding the prefix *"ante",* which means *'before'*, changes the meaning: *antenatal* means that before birth. The prefix "*ab*" that means from, away from, once accessorial to a word like *normal*, will change the meaning of the word. *Normal* becomes *abnormal* which is the opposite of normal. The same prefix may be added to different words. For example, the prefix *anti* means against if added to these words:

Bacterial - *antibacterial* means bacteria killer.

Biotic - *antibiotic* is a substance which has the ability to destroy the development of a living organism.

Helminitic – anthelminitic meaning pertaining against worms.

It is very useful to understand the prefixes used with medical terms in order to assist in tackling the problems of medical translation. Not all medical terms have prefixes. By learning to recognize a few of the more commonly used medical prefixes, you can figure out the meanings of terms that may not be immediately familiar to you.

Many times you'll encounter a medical term that contains a prefix that describes a number. Here are a few of the most common.

Prefix	**Meaning**	**Example**
Mono-, uni-	*One*	*Unilateral*
Bi-	*Two*	*Bilateral*
Tri-	*Three*	*Triplicate*

In medicine, you'll often encounter terms that describe where a procedure or condition takes place on the body.

Prefix	**Meaning**	**Example**
Ab-	*Away from*	*Abduction*
Ad-	*Toward*	*Adduction*
Ecto-, exo-	*Outside*	*Ectoparasite*
Endo-	*Inside*	*Endoderm*
Epi-	*Upon*	*Epinenephrine*

There are some conditions that may affect those body parts starting with prefixes in this medical terminology list.

Prefix	**Meaning**	**Example**
Ambi-	*Both*	*Ambidextrous*
Dys-	*Bad, painful, difficult*	*Dyslexia*
Eu-	*Good, normal*	*Eukaryote*
Homo-	*Same*	*Homogenous*
Iso-	*Equal, same*	*Isotope*
Mal-	*Bad, poor*	*Malnutrition*

2.6.5.7 Suffixes:

A suffix is usually found at the end of a term to provide a new meaning. In medical terminology, a suffix usually indicates a procedure, condition, disease, or part of speech. The suffix *cide* once added to the word *fungi* changes the word into *fungicide* which means fungus killer. When the suffix *logy*, the study of, is added to the word root *laryng* which means larynx it forms the term *laryngology* which means "the study of the causes and treatments of disorders of the larynx" (Mosby's Medical, Nursing and Allied Health Dictionary, 1998:917).

Each suffix has a meaning. For example, the suffix *ectomy* means *a cutting out, emia* refers to a blood condition. Understanding the meaning of each suffix helps to understand the meaning of the whole word.

A medical term must have at least one root but does not have a prefix and/or a suffix, for example, the term *erythrocyte* meaning *red blood* cell. It can be divided into two roots:

erythr means *red* and *cyte* means *cell*.

Some medical terms have both a suffix and a prefix with the root as in *antisepsis*, meaning against infection. It contains the prefix *anti*, the suffix *sis* and the root *sep* which is derived from the Greek word *sepein* meaning *putrefaction*. Prefixes and suffixes also add to, change or modify the meaning of the word root.

There are some conditions that may affect those body parts starting with suffixes in this medical terminology list.

Suffix	**Meaning**	**Example**
-algia	*Pain*	*Myalgia*
-emia	*Blood*	*Hypoglycemia*
-itis	*Inflammation*	*Bronchitis*
-lysis	*Destruction, break down*	*Dialysis*
-oid	*Like*	*Haploid*
-opathy	*Disease of*	*Neuropathy*
-pnea	*Breathing*	*Sleep apnea*

There are also a number of positional and directional medical terms that are not suffixes or prefixes, but are instead standalone words. Here is a short medical billing terminology list of some of the most valuable.

Word	Meaning	Example
Anterior or ventral	*At or near the front surface of the body*	*"Anterior nerves"*
Posterior or dorsal	*At or near the real surface of the body*	*"Dorsal surface of the hand"*
Superior	*Above*	*"Superior (cranial) aspect"*
Inferior	*Below*	*"Inferior aspect"*
Lateral	*Side*	*"Lateral aspect"*
Distal	*Farthest from center*	*"Axons distal to the injury"*
Proximal	*Nearest to center*	*Proximal end of the forearm"*

2.6.5.8 Derivation:

To derive a word means that to provide a replacement word from by adding an affix and some are derived from ideas or objects that are related to them. It's the formation of a new word from another word stem. For instance,

- *1 في ذلك اليوم كان الملك قد مرض مرضاً خطيراً*

In that day the king was seriously sick.

2- في ذلك الصباح كان الملك قد تمارض

In that morning the king was pretending to be sick.

3- في تلك الليلة كان الملك يمارض زوجته

In that night the king was nursing his wife.

"Different morphological change causes a change in signification" and this shows at the table below

Verb	**Morphological classification**	**Signification (Translation)**
يلمِس	*Base form*	*Touch*
يلامِس	*Mitigated form-* يلمس بلطف	*Slightly touch*
يلْمِس	*Intensified form -molestation*	*Repeatedly touch*
يتلْمس	*Intensified form*	*Carefully feel/ Explore or actively seek to find*
يلتمس	*Explore*	*Seek for a way or seek for something like apology*

It sometimes happens by the addition of Associate an affix. The derived word usually carries a distinct that means from the initial one. Jaber (2007) argues that, because of the significance of technical terms, specialists have paid attention to the processes of creation, designation, distribution, standardization and documentation of technical terms falling within their areas of scientific research. As has been mentioned antecedently, most English medical terms are derived from Greek and Latin. Some have their origins in Arabic. Many well-liked medical terms which were transmitted from Latin and Greek are still usually used like drugs that come from the Latin *medicina*. *Clinic* could be a Greek signified *bed*; and *hepatitis* is a Greek word consisting of *hepat* meaning liver and the suffix *itis* meaning inflammation, so *hepatitis* means an inflammation of the liver. And plenty of additional words derived from Greek and Latin are used as scientific terms.

For example, *dysentery* is derived from the Greek word *dysenteria* and refers to a disease marked by frequent watery stools (Stedman's Medical Dictionary, (2006: 596). Some terms are derived from Latin and Greek, English and Greek or English and Latin.

These are called *hybrids* and one example is the term *bactericide*. *Bacteria* are derived from the Greek word *bacterion* and the suffix *cide* is derived from a Latin word *caedere* which means kill. Another example, the term "*deshydremia"* consists of three parts; *de-* is a Latin prefix which means away from, *hydor* is a Greek word which means water and *haima* is a Greek word that means blood. *Deshydremia* is *hemo concentration* due to the loss of water from blood plasma (Stedman's Medical Dictionary, 2006: 522).

Some terms of Arabic origin are still used in English such as *alcohol* الكحول *al-kuhul* , قلوي *qalawi*, *sugar* سكر *sukkar* and *syrup* شراب *sharab*.

As mentioned on the top, several English medical terms are derived by adding affixes. Examples include the suffix *ache* which means *pain* as in *headache, stomach-ache and toothache*, and the suffix *pox* in *chickenpox*, *smallpox* and *cowpox*. *Pox* is a plural form of *pocke* which means *blisters*.

New terms are derived by using roots from classical languages or by adding prefixes and suffixes to roots derived from classical languages so as to make words needed for explicit contexts. For instance, the overall name for animals like *snails* and *slugs* that apparently walk on their stomachs was derived from the Greek roots and *slugs* which apparently walk on their stomachs was derived from the Greek roots *gast(e)ro-* (stomach) and *-pod* (foot) are formed the new word *gastropod*. When someone wanted a word to

describe a speed greater than that of sound he took the Latin prefix *super-* (above, beyond) and the Latin root *son-* (sound) and invented the term "*supersonic*". Some are derived from places; these terms are called after the places where the diseases were first discovered or spread, such as:

Lyme disease which is an acute recurrent inflammatory infection transmitted by a tick borne spirochete. The condition was originally described in the community of Lyme (Mosby's Medical, Nursing and Allied Health Dictionary, 1998:965).another example is

African tick-bite fever which is a febrile disease caused by the *bacterium*

Rickettsia africae in southern Africa (Stedman's Medical Dictionary, (2006:713). This disease is mainly spread throughout South Africa.

Some are derived by using a colour, *Yellow nail syndrome*: a condition in which there is complete or almost complete cessation of nail growth and loss of cuticle. The nails become thickened and yellow to yellowish green. (Mosby's Medical, Nursing and Allied Health Dictionary, (1998:1742).

Some are derived by using a body location such as: *Spinal fluid culture* which refers to the sample (culture) that is taken from the spinal cord. Some medical terms are derived from a person's name, usually the one who invented the equipment, or discovered disease, etc. The following are examples:

Alzheimer's disease: the word 'Alzheimer' is derived from *Alois Alzheimer*, a German neurologist who discovered the disease.

Down's syndrome: is named after *John Langdon Down*, an English physician who discovered the nature of the syndrome.

Parkinson disease: is derived from *James Parkinson* who discovered this

disease (Davies, 1985:258).

Some medical terms are derived from the persons' names of those who are associated with the term such as:

Lou Gehrig's disease which is named after its most famous sufferer, *Lou*

Gehrig, a hall-of-fame baseball player for the New York Yankees.

Caesarean section: *Julius Caesar* was supposed to have been born in this way (Roberts, 1971:28).

2.6.5.9. Collocations:

Collocations are quite common in English particularly in technical texts and specifically within the medical field. Collocations are two words or more that are grammatically coupled along as a results of their association. According to Ghazalla (1995:108), "collocation is defined as a combination of two or more words that usually occur together consistently in different contexts in language." The problem of translating collocations is that dictionaries don't usually facilitate finding the meaning for them. But, in medical translation, it's not perpetually troublesome to search out a collocation in the target language that has the identical meaning because it supplies collocation. For instance, the English collocations:

• *Bird flu*

• *Acute leukemia*

• *Nerve cell*

They can be rendered into Arabic as:

انفلونزا الطيور • *inflwanza al-tuyur*

الابيضاضات الحادة • *al-abyadadat al-hadda*

خلية اعصاب • *khaliat aasaab*

Baker (2011) believes that it is easy to assume that, as long as a collocation can be found in the target language which conveys the same or a similar meaning to that of the source collocation, the translator will not be confused by differences in the surface patterning between the two. However, collocations are semantically motivated or transparent in nature. They sound convincing but are likely to distract a translator. Baker (2011) argues that translators sometimes get quite engrossed in the source text and may produce the oddest collocations in the target language for no justifiable reason. To illustrate this point, consider the following example:

Cardiac failure

Is literally translated into Arabic as "فشل القلب" *fashal al-qalb*

which means that the heart cannot do its permanent job at all but the appropriate equivalent is "قصور القلب" *qusour al-qalb* (see Hitti's Medical Dictionary) which means the heart cannot do its job properly.

Therefore, translators should avoid translating source language collocations literally when the collocational patterns are untypical of the target language.

2.6.5.10 Eponyms:

A large portion of the medical terminology is composed of eponyms such as *Alzheimer's disease, Parkinson's disease, Jefferson fracture, Adam's apple, Fallopian tubes, or Bard-Parker scalpel*. These are terms derived from the names of parts of the human anatomy, diseases, medical devices, signs and symptoms or medical procedures. They can also include geographical places (*Lyme disease*) or fictitious characters (*Othello's syndrome*).

Eponyms present some problems with translation because the terms and their equivalents in different languages may additionally be eponymous. It can be difficult as well if only the source or the target language is eponymous whereas the counterpart is from a Latin or Greek root or a descriptive term. For example, *Fallopian tubes* in German is *Eileiter*. There are also cases when eponymous terms can also have doublets in the same language. For example, the eponymous English term for a type of *intestinal parasite* is *Giardia lamblia*. But it can be called *Giardia intestinalis* or *Giardia duodenalis*. Another example is *Cowper's glands*, which is also called *bulbourethral* glands.

Choosing between an eponym and another term would depend on which is more common in the target culture. Often, a translator who lacks experience in translating medical texts would automatically translate a drug name into the target culture equivalent. This, however, would not be functional. Texts often refer to drug names as they are known in the source language, which is

likely to be the brand name. When coming across a brand name like "*Ventoline*, it would help the end receiver (specialist or not) to not only have the English trade name "*Ventolin*", but also its International Nonproprietary Name "*Salbutamol*". An International Nonproprietary Name (INN) is a unique name designated by the World Health Organization (WHO) to a particular pharmaceutical substance. There are several good reasons for using an INN. Your target text may be read by native English speakers from different countries. Another reason is that one drug can be produced by several companies and so including a generic name would make it easier to decipher the chemical function of the drug. Also, many medical terms like eponyms are named after the death of the scientist who discovered that disease or invented a medical treatment. According to Montalt and Gonzalez (2007: 230)

"As new diseases appear and biomedical research advances, new knowledge is generated, this has to be conceptualized and transmitted. Thus, the purpose of terminologizing medical knowledge is to organize it, store it and make it available for communication."(As cited in Gharsa, 2015.p.100).

2.6.5.11 Neologisms:

Neologism means a new word or a new concept in a particular language. Neologisms were defined by Montalt and Gonzalez (2007) as new terms accustomed represent and transmit new ideas. They are the result of what is referred to as the process of terminologizing new medical knowledge. They can be either newly formed words or existing words to which new meanings are attached. Neologisms are thought-about as a controversy within the linguistic communication because the author has to coin a brand new word

or expression. On the other hand, a translator conjointly faces the matter of finding identical for the new word or expression as they need not got prepared equivalents in the TL and that they won't however be offered in dictionaries. Accordingly, Montalt and Gonzalez (2007) argues that medical translators have two types of challenges. On the one hand, understanding the meaning of the English term in the source text and, on the other hand, finding an equivalent term in the target language. One of the signs of the technological progress and development of any scientific activity is the emergence and development of a collection of technical and scientific terms that represent the key ideas at intervals that scientific activity and development. As fast developments and progress in technology happen, particularly within the medical field, new diseases are discovered and new medicines and instrumentation are fabricated. These have to be named within the source language and that they additionally would like equivalents for them to be formed within the target language.

Neologisms are quite common in medical terms considerably for the names of diseases as they unfold terribly quickly throughout the world and each language should have equivalents for them very quickly. In some cases, functional-descriptive terms are used to name new diseases, for example '*swine flu'* first became an epidemic in 2009. It started in Mexico and spread very quickly throughout the world. The disease mainly spread from pigs (swine) to humans. The affected people had similar symptoms to seasonal flu so it was easy to find an equivalent in Arabic for it using a literal translation. But the problem is that the virus is new and it is named in the source language, which is English, as *H1N1* which is a formula which has no

equivalent in Arabic. In this case the English word is adopted. Newmark (1988: 143) recommends some ways for dealing with neologisms. He states:

"Any kind of neologism should be recreated; if it is a derived word it should be replaced by the same or equivalent morphemes; if it is also phonaesthetic, it should be given phonemes producing an analogous sound–effect."

When Arabic translator of a medical text comes across a neologism within the SL that is typically written in English s/he has got to seek for appropriate equivalent. If s/he cannot find any equivalent giving a definition are going to be the last answer.

2.6.5.12 Polysemy:

Polysemy could be a word with many completely different or closely connected meanings. For instance, treatment, remedy, therapy can be translated into Arabic as علاج ilaj. On the other hand, an English word could have more than one equivalent in Arabic; for example, the word *mucus* can be translated into Arabic as: نخامة nukhama , صديد sadid , قيح qaiyh but as a medical term we called it *phlegm* and as Sudanese people called it *balgam* بلغم

The translator might face the matter of a word that has over one meaning that are totally different within the SL and in the TL like '*drug*' which might mean *'medicine'* or 'banned substance like *heroin*, *hashish*, and which can be translated into Arabic as دواء *dawaa* (medicine) or مخدر *mukhaddir* (illegal substance).

In this position, selecting an inappropriate equivalent within the TL will cause serious problems especially in sensitive fields, like medicine. Here the translator depends on the context of things and may bear in mind of what the translation is concerning about. For instance, The doctor advised his patient:

"*It is better to take this drug in time."*

Can be translated into Arabic as:

من الافضل ان تأخذ هذا الدواء في الموعد

min al-afdal an ta'khudh haza al-dawa' fi al-mawied

In the above sentence the word '*drug*' was translated as if it were '*medicine*'.

Also, it can be translated into Arabic as:

من الافضل ان تأخذ هذا المخدر في الموعد

min al-afdal an ta'khudh hadha al- mukhaddir fi al-mawied

In the above sentence the word '*drug*' was translated as '*illegal substance'*.

Thus the first sentence is the appropriate translation which gives the equivalent of 'medicine' for the term '*drug*'. A translator should know doctors never advise their patients to take illegal substances. The same principle applies when one translates the word "*pupil*" which can be rendered into Arabic as *تلميذ tilmiz* or *بؤبؤ العين hadaqat al-ayn*. Also, the word patient can be translated into Arabic as *صبور sabour* or *مريض marid*. Also, some acronyms and abbreviations can present a problem of polysemy, as

they are not unique and some abbreviations or acronyms can have different meanings. Navarro (2005) claims that abbreviations and acronyms are sources of polysemy. According to him, the abbreviation *CF* can have at least 15 meanings: *calibration factor, cancer free, cardiac failure, chemotactic factor, Chiari-frommel, chick fibroblast, Christmas factor, citrovorum factor, clotting factor, colony factor, complement fixation, contractile force, coronary flow and cystic fibrosis.*

Nevertheless, polysemy can express the association of one word with one of its more distinct meanings. Mere dependence on the text is not sufficient.

The context of the matters is extremely important in crucial the appropriate equivalent for the term concerned. In some cases, seeking recommendation from a consultant by a translator is the last choice particularly once one faces a problem of getting over one meaning for English term and that they are all associated with a similar subject matter. For example, *GP* has two different meanings in medicine. It can mean *General practitioner* or *General Psychiatrist.*

2.6.5.13 Synonyms:

Speaking of synonyms is full of concepts that go under several names which are basically equivalent but may differ according to whether they derive from anatomical, pathogenic, historical, or descriptive considerations for instance, the word *intensive care* could be translated as

العنايه المركزه،العنايه المشدده، او العنايه الفائقه

Ingo(2007) defines a ‘synonym’ is a word with a similar basic meaning as another word but it is different in nuances, style and connotations (Ingo 2007:190). Some terms have two possible equivalents in English but they are of different stylistic value. To be able to choose the most suitable term, it is important to check the frequency in parallel texts. Referring to Koller, this is text normative equivalence (Munday 2001:47-48), where the characteristics of the style are based on the patterns of usage e.g. standardized terms, which is also related to text sort conventions (Ingo 2007:216). For example, ‘*patella*’ is the name given to the *’ knee cap’* another example is *“cilia”,* which called *“nose hairs “* in which of these synonyms is used in writing and translation will depend on the genre or type of text to be translated and on the needs and expectations of its audience.

One difficulty was to translate a medical terms that a translator could be prone to translate into the same word. However, the translation involved the choice between (the English spelling) where either the Latin term could be transferred by borrowing (Vinay & Darbelnet quoted in Munday 2001:56) or the English formal word could be used. It has been important to check the frequency in parallel texts to exclude the risk of naming a concept with an unsuitable variant of term. For example, the word *medicine* could be translated as *الطب، الدواء، او الطب الباطن*

2.6.6 Medical Genre:

From early decades English has not just simply a vital language within the field of medicine, but also the predominant language of health sciences. At present, English is the most widespread lingua franca of the western world used in science and medicine. Scholars must be able to express themselves

in this language if they need to be absolutely accepted members of the international academic community. The most recent advances in medicine are available only in English.

The concept of genre is a key term in medical communication and includes the written and spoken genres. International use of English within the field of medical science encompasses not solely sheer transfer of the latest information and ideas but adoption of the well-established features of written and spoken genres. However, it ought to be stressed that these genres are at the identical time dynamic and subject to changes in wider contexts surrounding this discipline. Editorials, research articles, abstracts, case reports, presentation papers or posters can be found in many other academic disciplines, however, each of them develops a set of peculiarities characteristic of the medical profession alone. Genres change according to changes in socio-cultural needs, new genres are created and older ones may cease to exist.

The term genre was at start used by Swales who defines it as a standardized communicative event in a functional atmosphere aiming at communication among people who share the same ideas. Some authors equate the term genre with the term text types, whereby the genre analysis represents linguistic operation inside the complete text.

According to Salager-Meyer(1944), the language for specific purposes may be considered as genre with its specific subgenres or text types. They report that, for example, the language for medical purposes contents and conveys the main points. In addition, it should be interesting, clearly and concisely written.

The translator, as an expert writer, can need to be totally conversant in these restraints and should actively be involved in genres. Genres can be defined as varied ideas involving the socio-communicative perspective (the relationships between the participants), the formal perspective (the standard components admire the readers' expectations generated by the socio communicative context), and the cognitive perspective (the ways in which the community understands, organizes and transforms the reality it is surrounded by). Thus, we can conclude that genre is a category that plays an essential role in designing the curriculum for teaching translation. Translator students should become capable of recognizing that a certain text belongs to a certain genre (from a specific socio-professional domain) due to its features of proto typicality and recurrence, which are displayed in different micro and macro structural categories. Elaborating on text types and genres makes translator students possible to identify a series of elements in them: the agents in the text, the relationship between them concerning power and authority, and the situational context in which the text type occurs. Genre competence can help the students have an intensive understanding of the socio-linguistic context, and acquire bicultural and thematic information as well.

Genre competence may also help them increase awareness of textuality and discourse as well as recognize cultural and intercultural values, perceptions, and behaviors. It also promotes the development of the capacity to understand, analyze and produce texts that are compatible with the genres and subgenres present both in the source culture and in the culture where the target language is used. Medical writing is a general label with a great deal of variation across many genres: research genres, e.g., research papers,

review articles, case reports, conference proceedings; educational genres, e.g., course books, training courses, fact sheets for patients; professional genres, e.g., guidelines, informed consents, case notes, discharge summaries, lab results, and commercial genres, e.g., manuals, contracts, product catalogues.

A medical document should only be translated by someone who is completely familiar with the topic so as to translate accurately each term and meaning, and then avoid any negative consequences for the patient or medical personnel. Medical translation is considered to be the translation of technical, regulatory, clinical or promoting documentation, software or training curriculum for the pharmaceutical, medical device or healthcare fields. Medical translation is thought to be one of the oldest domains of translation: the sufferings of the body and soul have always been our central preoccupation. Good medical translation can be done both by medical professionals and medically knowledgeable linguists; however in each cases a love of language, an ear for style, a willingness to pursue arcane terminology and caring enough to get it exactly right are the keys to true success.

In the area of written medical discourse, Piqué-Angordans and Posteguillo(2006: 651) identify editorials, research articles, abstracts, case reports, review articles, peer reviews, replies to these reviews, letters of acceptance/rejection of a paper, conference programs, medical popularizations, letters of application, book reviews, and letters to the editor as only a few of written medical genres. While explaining the principles of authorship of medical articles, Huth(1986-269) identifies four broad categories of texts in written medical discourse:

1) Articles for reporting clinical, epidemiologic, or laboratory research;

2) Articles reporting a case series analysis;

3) Individual case reports; and 4) review articles, editorials, and similar articles based on critical assessment of the literature and personal experience (1986:270).

In the same vein, Salager-Meyer (1994: 4) classifies case reports as one of the four major types of written medical texts, along with editorials, review articles, and research papers. The classification of written medical discourse texts by various authors shows that medical discourse is usually taken to mean the texts written primarily by and for the physicians as a discourse community. As for the medical texts written for the general public like informative brochures, patient data leaflets, posters, etc., these kind a very completely different class of texts and have entirely different textual and linguistic features, as they address a non-specific audience with little or no information of medicine. In other words, medical texts supposed for the perusal of the layperson need to be dealt with as a separate genre-text category without any specific target discourse community.

With relevance to the medical texts written by and for the physicians, the fact that these professionals form a specific discourse community places certain constraints on the way they produce and use medical texts. Swales (1990: 24-27) identifies six "characteristics that will be necessary and sufficient for identifying a group of individuals as a discourse community". These characteristics include, among others, shared mechanisms of intercommunication among the community members, possession and

utilization of one or more genres, yet as some specific lexis. Thus, physicians, as a discourse community, also have certain mechanisms for intercommunication, among which are written medical texts, possess and utilize several genres, including those cited above, and use some special lexis which is medical terminology. As such, the texts created by the medical discourse community are extremely structured. One factor that contributes to the well-structured nature of medical texts is the publishing pressure on the physicians: "Because promotion and funding of physicians in academic medicine are closely connected to the number of their publications, investigators feel motivated to publish as frequently as possible" (Angell,1986: 261).While the "what to publish" aspect of the publication pressure is set by the medical knowledge and experience, as well as the curiosity of the medical experts, "how to publish" facet is shaped by the standards obligatory by the venues for publication. The major venue for medical publication is medical journals, which represent perhaps the most populated family of scientific journals with 292 journals cited in the by no means comprehensive list of English medical journals found in Wikipedia. Each and every one of these journals places certain requirements on the scientific, textual and linguistic aspects of the manuscripts they are going to publish. Thus, the high level of structure in the various types of medical genre texts possessed by the medical discourse community.

Representing public speech, the oral presentation is much more than a simple transfer of ideas and its successfulness depends largely on the assessment of the specific situations and ability to appropriately respond to them. When preparing a presentation, a speaker should consider it as a dialogue which includes much more than simply verbal communication. The

first necessary step in preparing the speech is an accurate analysis of the audience. Different audience needs different amount and level of knowledge. The success of the presentation depends on the knowledge of these criteria in advance. First of all, the speaker should clearly and precisely explain what he wants to attain with his speech. Therefore, it is necessary to identify the subject of the presentation in one sentence that explains the importance of the topic to the audience. Moreover, it is necessary to set the type and amount of information that needs to be transferred to the audience, as well as the most important arguments and questions that need to provide a response in the presentation. An interesting introduction that attracts and holds the attention of the whole presentation becomes a frame. The simplest way is to make an introduction after completion of the whole speech. Efficient conclusion represents a logical result of the structure and content of the material previously mentioned. Specific attention should be drawn to the time available for giving presentation and needs selection of substantive issues. Conferences play a vital role within the specialized discourse communities, and represent important events for both students and experienced professionals. This is an opportunity to exchange ideas and listen about the latest findings in research.

Giving speech has the features of written texts such as integrity, accuracy and specialized terminology. However, the conference language is different from the written language because of the presence of the audience. Features of the conference, so the choice of language in the title and conference abstract is very important.

2.6.7 Features of Medical Genre:

Since a highly specialized language, as is medical language, is often criticized by special nature, the following section will focus on the linguistic characteristics of medical English in order to provide a way to became closer to the language of the medical community.

2.6.7.1 Lexical Features:

According to Romich (2001:23), "studying medical terminology is like learning a new language". In fact, at the first sight, words look completely different and complicated. However, by understanding some important tips that govern medical language, people may become interested in and aware of how medical terminology works.

Beyond the origins of its terms, medical terminology shows some relevant characteristics that distinguish it from Standard English.

2.6.7.1.1 Denotation:

The medical term denotes one precise meaning. To provide an example, when the word *brain* is used in the medical domain, it refers to the part of the central nervous system contained within the cranium *(her sister died of a brain tumor/ her brain was damaged in the accident)*, whereas in standard English it can acquire a connotative value (e.g. *use your brain to find a solution).*

Despite the presence of technical terms, medical language contains a wide range of words and phrases that belong to general English. Below, some figures of speech are taken as an example (Maglie, 2009:25):

Catachresis: it expands a word beyond the limits of its own meaning. The medical term *neck of uterus* means the *corpus/body of uterus*: the meaning of the general English word *neck has been expanded*.

2.6.7.1.2 Conciseness

In medical language, many ideas are expressed in the most concise lexical and syntactic form. To provide an example, we can consider the term *urinalysis*, the physical, chemical, and microscopic examination of urine which derives from the fusion of the two words *urino* and *analysis*; and the term *contraception*, which is the result of the union of the two words *contra* and *conception* (Etymology: Latin, contra + concipere, to take in).

Another linguistic device physicians use to express a concept in a concise manner is represented by acronyms, such as *HIV (human immunodeficiency virus), AIDS (acquired immunodeficiency syndrome), HCV (hepatitis C virus),* and many others. Additionally, other concepts are expressed through abbreviations, such as *CV (cardiovascular), Fld (fluid*), and stacked noun phrases, *such as body mass index (BMI)* (Maglie 2009:29).

Physicians use a variety of abbreviated forms and acronyms in order to quickly record and refer to patients' information. Moreover, these expressions are understandable, 'economical' and accepted within the medical community, thus allowing physicians to communicate effectively. However, since these shortened forms are also used for prescriptions,

understanding these terms can help patients to decipher their medical records.

2.6.7.1.3 Precision

Since early term can be directly referred to its meaning, monoreferentiality leads to the phenomena of precision and transparency of medial language. Words can be structurally analyzed dividing them into their basic components: prefix, root and suffix. As an example, the term *hyperglycemia* can be divided as follows: the prefix *hyper*-, the root *–glyc*- and the suffix *–aemia*. After dividing the word into its components, the meaning can be picked up by examining the suffix, followed by the prefix and then the root. In *hyperglycemia*, the suffix *–aemia* means *blood condition*, the prefix *hyper*- means *excessive* and the root *–glyc*- means *sugar*. By collecting the components' meanings, we get the final meaning: *a blood condition of excessive sugar* (Maglie 2009:28). The same process can be showed using the term *choledocholithotomy* which is a surgical operation to remove (-*otomy*) a stone (-*litho*-) that originated in the gall bladder (*chole*-) but is currently located in the common bile duct (-*docho*-) (Fallon 2002:1). However, even in medical language there are cases of imprecision, as is demonstrated by the suffix *–oma* in the terms *carcinoma*, *lymphoma* and *glaucoma*. In fact, while in the formers, the suffix *–oma* designates a very life-threatening tumor (Etymology: Gk, *karkinos* + *oma,* tumor10 and L, lympha + Gk, oma, tumor11), in the term *glaucoma*, the suffix *–oma* does not denotes an eye cancer but "*an abnormal condition of elevated pressure within the eye because of obstruction of the outflow of aqueous humor".*

2.6.8 Problems and Solutions of Translating Medical Terms into Arabic:

Medical translations are some of the most difficult to complete by an ordinary translator and need the skills of a specialist. It's preferable that anyone who attempts to take on a medical translation task should have some sort of medical qualifications so that they have firsthand knowledge of the medical terminology which is most frequently used.

2.6.8.1 Transliteration:

Transliteration is mainly used to translate proper names (name of people, places, and institutions); To transliterate is to write a letter or word using the nearest corresponding letters of a different alphabet or language in medical terms, the translators use this method to translate eponyms. For examples:

Medical Terminology	Unified Medical Dictionary	معجم المصطلحات الطبيه
Adrenaline	أدرينالين (أبينفرين)	هرمون أدرينالين (أبينفرين)
Addison's disease	(داءُ أديسون) القُصورُ الكُظْريُّ الاولي	Blank

The examples above show terms that have been translated by using the mechanism of transliteration. The comparative analysis of the previous examples shows that both dictionaries translate the term *"adrenaline"* into *أدرينالين.* Another example, like *Addison's disease*, were transliterated in the unified medical dictionary by *القُصورُ الكُظْريُّ الاولي (داءُ أديسون)*, whereas this term was left blank in معجم المصطلحات الطبية and this is due to the problem of non-standardization of medical terms, especially medical eponymous.

2.6.8.2 Paraphrasing:

The reason behind using paraphrasing as the best method to translate the above medical terms is that the most of those medical terms, which includes word parts, could not find a single term equivalent in the Arabic language. That is why; the professional translators in both dictionaries prefer to use this methodology, so as to facilitate communication between the physician and the patient. Paraphrasing based on explanations, and additions to translate a complex medical terms. Aadditionally, paraphrasing method offers several possibilities for translators as shown in the following two examples:

SL	***TL***
abdominohysterectomy	*اِسْتِئْصَالُ الرَّحِمِ بطَرِيقِ البَطْن* *أو* *عملية ازالة الرحم بطريقة شق البطن*
canceraemia	*وُجودُ الخَلَايا السَّرَطانِيَّةِ في الدَّم* *أو* *تسرطن الدم*

2.6.8.3 Arabicization:

The term Arabicization or التعريب appeared during the Islamic caliphate during the eighth century (Abbasid rule) to mean various things all of that are related to Arabic. It means:

- The teaching of Arabic to non-Arabs.
- The fluency gained in Arabic by a non-Arab.
- The inclusion of foreign words and concepts into Arabic having undergone some phonological and structural charges in accordance with Arabic language rules (Al-cisawi, 1996).

Haashim (1988: 38) sees Arabization "as the use of Arabic as the language of thought, education, science and communication."

However, Mattlūb (1983:29) defines Arabization as "the writing of foreign words in Arabic orthography". The same as Mattlūb's definition of Arabicization, Ghazalla (1995:165) calls this method "naturalization". He states "it is to take the English term and adapt it to Arabic alphabet and grammar, by changing one or two of its letters into Arabic ones, and having singular, plural, masculine, feminine or verb forms of it".

Examples:

Biological (adjective) بيولوجي biyuluji

Biologist (noun) اخصائي بيلوجيا | بيولوجي biyuLuji / ikhsa'I baiuLujia

Biologists (noun/plural) بيولوجيون | بيولوجيات biyuLujiyoun / baiuLujiat

Biologically (adverb) بيولوجيا baiulojiya

So, Arabicization (in the current study) means that a foreign term is adopted and formed to suit Arabic pronunciation and grammar. This can be seen from the above examples.

There is some debate between Arabic scholars about using Arabicization when translating terms into Arabic. Ghazalla (1995:166) argues: "although naturalization "Arabization" is a step further toward translation into Arabic, it is not satisfactory, because the foreign term exists still mainly as it is without an Arabic equivalent. Therefore, it may be not understood except by a specialist. Some Arabs do not understand, *كيميائي kimiyaiy, بيولوجي baiuluji"*

In order to analyse the effects of Arabicization and the existence of terms, El-Magrab (2011) writes that Arabic words should make use of their phonotactics (possible combnations of phonemes or the area of phonology which concerned with the analysis and description of the permitted sound sequences of a language) if they do not do this they are considered to be borrowed nouns. However, as long as the words use the fundamental principles of derivation and the process is undertaken with respect to Arabic linguistics, they will be within the Arabic language. This analysis by El-Magrab brings out the purpose of the naturalization of the Arabic language which basically means altering the foreign words within the phonotactic barriers of the language so that they can be easily considered as a part of its grammatical systems.

2.6.8.4 Globalization:

Globalization has an important role to play in translation in current times. Wiersema (2003) one of the opinions that, because of the current increasing trend of globalization, one finds oneself no longer in need to desperately find the accurate translation of a term in the target language.

Many English terms have been introduced into Arabic, and lots of Arab speakers find it more fitting to mention the global term, mostly the English term, as they think translating it into Arabic could make the target-language text lose truthfulness. According to Wiersema, "globalization decreases the element of foreignness in translation". As an example, people speaking different languages do not need a translation to understand words like internet, face book, email, passport, etc.

As a global language, English has taken the lead in distributive information particularly as regards scientific and medical terminology. Schell (cited in Cronin, 2003) describes English as a tool for international communication. Thus, English has become the global language and no other language has shown a similar degree of flexibility or appeal in terms of usefulness and its widespread usage. However, until the position of English is challenged by other languages, English will continue to be the global language. Globalization has not clashed with translation; on the contrary, global English has enabled peoples of the non-English speaking world to be side to side of the latest advances in science and medical terminology.

Nevertheless, translation will continue to have a significant role to play worldwide no matter of the language which assumes the global role. Cronin (2003) believes that translation has multiple cultural and social roles, and in an age of globalization, is ever more important. He emphasizes that globalization does not signal the death of the translator or translation; rather there is a renewed demand for translators and translations. On the other hand, some researchers see that English/Arabic translation is indeed on the increase. This stemmed from the realization that, in the transfer of knowledge, medical or technological, the language of the 'sending' countries

is not that of the ‘receiving’ ones, and when 60% of all the world’s technical documentation is produced in English only 40% of it is not (Hajjaj and Jarrah, 1998).

2.6.8.5 Standardization of Arabic Medical Terms:

Arabic is a very rich language with regard to synonyms and terms but this is not always the case for medical terms which are known not to follow certain rules that would facilitate their extractions into Arabic. The problems of standardization is further complicated by the existence of totally different styles of Arabic including classical Arabic, modern standard Arabic and different dialects of colloquial Arabic. When translating medical text, Arab translators face the problem of the non-standardization of medical terms across the Arab world.

For example, the term hemoglobin could be translated into Arabic as خضاب الدم khidab al-dam or يخضور الدم yakhdor al-dam or الهيموغلوبين al-himoghlobin . As another example, vertebral column could be rendered Into Arabic as العمود الفقري al-amood al-faqari or العمود الشوكي al-amood al-shawki or السياء al-siyaa’ or الصلب al-salb.

Also the lack of co-ordination between Arab countries with regard to the issue of standardization of scientific and technical terms in general and medical terms specifically widens the problem of standardization within the Arab world. Sieny (1987) explains that there are many official and unofficial agencies involved in producing Arabic scientific and medical terminology, which leads to the common problem of multiplicity of terms.

In contemporary times, the emphasis of Arabic academies that facilitate translation should be to remodel static rules so that there is more flexibility in the language of Arabic to help in better functional and practical translation.

2.6.8.6 English-Arabic Medical Dictionaries:

As translation is a path through that technology and science can pass to the world's countries that have different languages, several Arab scholars and terminologists have tried to compile dictionaries, encyclopedia and books to include as many words as possible alongside their meanings in Arabic. Muhammad Ibn Yusuf al-Harawi appears to be the first Arabic scholar who composed a medical dictionary in the Arab world. In an attempt to standardize medical terms in the Arab world, the Arab Medical Union took the initiative to recommend the compilation of an English Arabic unified medical dictionary. As a result of this initiative, in 1966, a specialized Committee of Arab Experts was set up with Dr M. Khayat as the rapporteur to verify and enrich the first edition which was originally compiled in 1973 in Baghdad. Although much effort was undertaken by Arab scholars in the compilation of this dictionary, it has been very difficult to update it continuously and to keep up with the enormous rapid developments in science and technology in general, and in the medical area specifically, that are usually presented in English.

2.6.8.7 Culture:

Medical translation needs an intensive understanding of cultural differences; it should be considerate of cultures. A translation can be accurate and

correct, but lacking the cultural appropriateness, which jeopardize the whole project. According to Argeg, G. M. (2015): "The culture of the community in which something is being translated will largely determine how words and expressions from the source language will appear in that community's language." he also exposes one of the cultural concerns while working on a medical translation, namely discussing body parts and sexual healthcare. It could be a burdensome to explicitly discuss these matters, especially for a conservative culture.

The necessity of cultural correctness in medical translation is also present in surveys, for examples, where questions related to ethnicity,sex, race, religion, or even alcohols can be really sensitive.

2.6.8.8 Similarity of two words:

One of the key problems in a medical translation is when there are two words that need to be translated however that may have completely different meanings. It would only be an experienced medical translator who would have the knowledge to know which translation is correct. One important example is the difference between *dysphagia* and *dysphasia*. Dysphagia means difficulty swallowing while dysphasia means impairment or loss of the power to use or understand speech. These are very different meanings but the two words look and sound similar when spoken.

Medical abbreviations can simply be confused when translated, but they may have completely different meanings. Possible examples are the abbreviations for the left and right ear. AD stands for the right ear while AS is used for the left ear and AU is the word for both ears. If the doctor sees a wrong

translation it wouldn't be noticeable and treatment could be administered incorrectly.

2.6.8.9 Audience:

Unlike other kinds of translations, medical translations have a complex target audience. Basically, this audience falls into two categories: medical professionals or laypersons. The complexity comes from the fact that each category has specific approach and requirements while translating. If the target audience is medical professionals, the translator sticks by the strict use of scientific and medical terms. Whereas, if the target audience is laypersons (like patients), things completely differ. For laypersons, language is less complex, and more general (familiar) medical terms are used, because patients, for instance, may not understand if too much terminology is used. For example, *myocardial infarction* is better known for them as heart attack, or *epistaxis* which is nose bleeding.

2.6.9 The characteristics of a good translator in translating medical terms:

The dynamic development of medicine and natural sciences as well as the global nature of the international community, the demand for medical translation is significant, however it still remains a controversial question who should translate medical text – a medical professional or a linguist or a linguist with some medical background (cf. O'Neil 1998; Heine 2003; IMIA 2009; Nisbeth and Zethsen 2012). Ideally, a medical translator would not be a medical professional, but an especially trained translator, i.e. a linguist who subjected to appropriate training, a view which is also supported by

IMIA (2009: 4-5). According to IMIA (International Medical Interpreters Association), medical documents should be translated by professionals who have "a native or near-native, formal level of language proficiency, analytical capabilities, and deep cultural knowledge in the source and target languages" (2009: 3), other requirements include at least college level formal education covering courses in translation theory and practice, proficiency in the source and target languages, expert knowledge of the subject matter terminology, terminology research skills and adequate writing skills. Other components of medical translator competence include: application of translation strategies, relevant procedures, conventions or standards, use of medical databases, text banks, dictionaries, as well as certain psycho-physiological features such as decision making, fineness, honesty etc. (cf. PACTE 2011; Nisbeth & Zethsen 2012; Karwacka 2012, 2014).

A medical translator's command of medical English and his or her writing skills involves a variety of genres and registers. Transferring medical information. Medical Translation for patients means avoiding unnecessary jargon, complicated syntax, or highly specialized vocabulary. Translating documents which are written for medical professionals, on the other hand, requires specific terminology and discourse markers typical of similar texts produced in the target language. Therefore, a translator's linguistic competence involves general and specialized languages. That is why medical training is not limited to acquiring medical knowledge (cf. O'Neil 1998: 73).

Having said that, background knowledge of medicine is necessary to make sure that a message is transferred without distortions, which is one of the

critical issues in interlingua and intercultural knowledge mediation (cf. Montalt and Shut-tleworth 2012; Karwacka 2014). Medical translators do not only acquire medical knowledge through medical studies and they are not always physician- translators: "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" (O'Neil 1998:69).

Some information on the background of medically knowledgeable linguists is provided by the results of a survey Marla O'Neil (1998) conducted among translators who are not physicians, but specialize in medical translation. Her study discover that medical translators acquire background knowledge by studying medicine, participating in medical courses, working in a position indirectly related to healthcare or medicine or participating in medical translation courses. Other factors included access to medical professionals, medical professional relatives, and a medical condition that resulted in doing background research and contact with medical professionals. Most respondents to O'Neil's questionnaire admitted that their translation was hardly ever verified. The reality of medical translation too often shows that translators must assume sole responsibility for the quality and accuracy of medical translations, which seems to be one of the factors behind the often poor or substandard quality of medical translation, rather than merely the question of medical versus linguistics educational background of the translator (cf. Karwacka 2014), particularly if it is medical translators themselves that decide whether or not they are qualified enough to perform a particular translation task that they are considering to take on.

B: Related Previous Studies:

The second part of chapter two depicts some related previous studies at Sudanese, regional and international areas.

1- **Applying Translation Theories in Translating a Medical English Text Entitled "Laboratory Procedures in Hematology Written by SR Mehdi"** 2015 which was carried out in Sudan at Omdurman Islamic University for MA degree. This study recommended expand the Arabicization activity, medical faculties and college should include medical translation as a subject, and encourage medical translation through prizes and academic degrees. This study has dealt with medical translation only from the perspective of laboratory procedures in blood diseases, and did not address its problems and solutions

2- **Investigating Strategies for Understanding the Meaning of Specialist English Vocabulary**.by khalda Abd elrahim Osman Mohammed 2017. It was carried out in Sudan for PHD degree from Sudan University for science and technology. This study aimed to investigate teaching strategies in understanding specialist meaning of medical English vocabularies. The researcher designed two questionnaires one for teachers and the other for medical students, an interview was conducted for 10 of experienced teacher in English language and medical field, a vocabulary test was done with the same medical students. The main results showed that the medical students have different difficulties in understanding medical English vocabularies as speaking practice, word roots, irregular plural, words

with multiple meaning, synonyms of words, medical collocations and frequency use prefixes and suffixes. This study dealt with the study of teaching strategies in understanding the specialized meaning of the vocabulary of the medical English language, but did not address how to translate the medical text and what the difficulties faced by medical translation students and teachers and then solutions to those problems.

3- **Medical Terminology Translation to book of Richard Thomas JB Khoury Translated as A model by Nassima BENCHABANE**. It was carried out in Algeria for MA degree in 2015. The researcher began with medical terminologies in theoretical basis then the researcher talked about the raise of Arabic medicine and terminologies. The third chapter entitled Lexicology and the last one was a summary of the different uses of roots and affixes, from Greek, as well as medical terms. This study dealt with medical translation by applying a model for a book by Khoury but did not address the mechanisms of medical translation, methods, techniques, problems and solutions of it.

4- **Translating Technical Terms into Arabic: Microsoft Terminology Collection (English- Arabic) as an example by Sameh Saad Hassan.** It was carried out in Egypt 2017. The paper aimed to explore the techniques used in translating English technical terms into Arabic in the Microsoft Terminology Collection (MTC) (English-Arabic) as an example of comprehensive multilingual resources of technical terminology on the Web. Some examples of MTC terms in Arabic are examined by the researcher to identify the kinds of translation strategies that MTC follows in order to translate technical terms into

Arabic as well as the appropriateness of these strategies to their translation situations through comparison of different translations for the same SL term. Results show that it is more appropriate to use translation and/or Arabic-expanding techniques (mainly derivation and compounding) with technical terms derived from common linguistic roots in the source language (SL) to preserve the integrity and authenticity of Arabic as a target language (TL) at a time of a marked increase in the number of SL technical terms, while methods of Arabicisation should only be used with SL proper nouns or any word derived from them to solve problems of nonequivalence at word level between Arabic and English. This study dealt with the translation of the technical terms of English into the Arabic language and its strategies, but it overlooked the aspect related to medical translation, its problems, solutions and its obstacles and how to solve them.

5- **Multiple Arabic Equivalents to English Medical Terms: Translation Issues** by Reima AL-JARF1.it was carried out in Riyadh, Saudi Arabia 2018.This research aimed to investigate the challenges of translating medical text especially at undergraduate students due to multiple Arabic equivalents to English medical terms. A sample of English medical terms with multiple Arabic equivalents was collected from several English-Arabic medical dictionaries to find out the types of multiple Arabic equivalents given, the shortcomings of Arabic equivalents, and the difficulties that students have with multiple Arabic equivalents. Two lists of categories with definitions and examples were developed and used in classifying and evaluating the equivalents. In addition, students answered an Arabic medical terminology test and responded to a questionnaire-survey to find out

their difficulties. Data analysis has shown that 2-word equivalents were given to 67% of the English medical terms; 3-word equivalents were given to 23%; 4-word equivalents were given to 6%, 5-word equivalents were given to 2%, and 8-, 9-, and 16-word equivalents were given to 2% of the English medical terms in the sample. This study dealt with the problem of equivalences in medical translation from English to Arabic, but it missed some medical translation mechanisms and did not address its methods and techniques in addition to medical genre.

6- **The Problems of Translating Medical Terms from English into Arabic** by ARGEG, GARSA, MOUSBAH. For PHD degree from Durham university in England 2015. The purpose of the study was to display the difficulties of translating medical terms and how they were tackled by postgraduate students who are competent in medical translation and professional Arabic translators who worked in the medical field. The researcher utilized a questionnaire test that included a set of English medical terms to be translated into Arabic by students who were doing a PhD in translation. The same questionnaire was also given to a group of professional Arabic translators. The result highlights the problems of translating medical terms from English into Arabic and the importance of training to work in the medical field as a translator. This study dealt with medical translation mechanisms and methods, but did not address the history of medical translation, medical genre and characteristics that must be characterized by the translators of medical texts.

7- **Medical Translation**. By Wioleta Karwacka. University of Gdansk in Poland 2015. This study offered a general overview of the major

issues in medical translation. It briefly presented the history of medical translation and the development of medical language. It also discussed certain characteristic features of medical language: terminology, including eponyms and multi-word terms, acronyms and abbreviations, affixation, word compounding, the doublet phenomenon, polysemy and synonymy with Considerable attention is devoted to problems in translating medical texts, and other issues, such as qualifications of medical translators, verification and review. This study dealt with some of the mechanisms of medical translation but did not address the methods and techniques, as well as did not determine if the translation from English to Arabic or vice versa.

8- **The History, Peculiar Terminology and Translation Problems of the Language of Medicine.**by NAGY Imola Katalin. University of Târgu-Mureş.Romania for PHD degree 2016. This study aimed to cover the issue of English as the lingua franca of medicine and its influence on other languages. Besides linguistic aspects, the researcher attempt to offer a survey of translation problems and difficulties cover some aspects of the historical evolution of medical terminology. This study did not address the mechanisms and methods of medical translation in addition to, it did not talk about the medical genre and the characteristics of the good translator who translated medical texts.

9- **The Impact of Medical Interpreter Services on the Quality of Health Care: A Systematic Review.**by Glenn Flores2004. This study was in the United States. This study aimed to know the effect of medical interpreter services on health care quality. A systematic literature review was conducted on the impact of interpreter services

on quality of care. Five database searches yielded 2,640 citations and a final database of 36 articles, after applying exclusion criteria. Multiple studies document that quality of care is compromised when Limitation in English proficiency (LEP) patients need but do not get interpreters. LEP patients 'quality of care is inferior, and more interpreter errors occur with untrained ad hoc interpreters. Inadequate interpreter services can have serious consequences for patients with mental disorders. Trained professional interpreters and bilingual health care providers positively affect LEP patients' satisfaction, quality of care, and outcomes. Evidence suggests that optimal communication, patient satisfaction, and outcomes and the fewest interpreter errors occur when LEP patients have access to trained professional interpreters or bilingual providers. This study spoke about the translator specialized in providing medical translation service and its impact on medical care, but did not address the mechanisms of medical translation and methods in addition to it did not address the type of medical genre.

Chapter Three

Research Methodology

Chapter Three
Research Methodology

This chapter includes a full description of the research methodology adopted as well as the research instruments employed. Moreover, the validity and reliability of these instruments will be confirmed.

3.1 Population of the Study:

For carrying out this study two groups were identified:

A: The population of the students who are the target of translating, understanding medical text.

B: The population of English Translation Teachers at Sudanese universities who carry out the task of teaching translation at Sudanese universities or institutes and who practiced the task of translating.

The first population group consisted of MA translation students of faculty of languages and translation at Bahri University. The second population group consisted of English language translation teachers at Sudanese universities.

3.1.1 The teachers' sample of the study:

The first population of the study consisted of English language translation teachers at Sudanese universities and was represented by a sample group consisting of 50 translation teachers.

3.1.2 The students' sample of the study:

The second population of the study was represented by a sample group consisting of 90 students distributed in Bahri University faculty of languages and translation. The subject was MA translation students at majoring in English languages at the above mentioned university and faculty. All of them had studied scientific translation as compulsory subject as MA degree and the curriculum approved by the high studies college and ministry of high education and scientific research. They have the same cultural and language backgrounds with Arabic language as their first language.

The table below illustrates the distribution of this sample.

Table No 3.1

University	faculty	No	total
University of Bahri	Languages and Translation	90	90

3.2 Instrumentation:

The instruments that the researcher used for conducting this study are:

- A test for MA translation students.
- A questionnaire for English language translation teachers.

3.2.1 MA student's test:

This test was widely selected to assess the student's knowledge in medical terminologies and medical translation. This test is divided into three parts. The first part consisted of medical vocabulary match. The second part

consisted of M segues question to testify the knowledge of medical information. The third part consisted of medical translation, the students were asked to translate some sentences from English into Arabic.

The test was administrated to a total of 90 students. Participants were MA translation students at Bahri University. The rationale for selecting MA translation students as a sample was that, with regard to the stage they have reached in their study, they should have accumulated a considerable knowledge about general translation particularly scientific translation.

3.2.2 The Questionnaire:

The aim of the questionnaire used in this research was to find out about the teachers' views regarding teaching and learning of medical translation, and it is relevant directly to the questions and hypothesis of the study. It was administrated to a total sample of 50 English language translation teachers at some Sudanese universities. It consisted of one part. The part contained 15 statements related to teachers' views about medical translation from English into Arabic problems and solutions.

The scale used in the questionnaire was five - point Likert scale to show the expected response from participants, five codes were given to the statement as follows:

1- Strongly Agree
2- Agree
3- Neutral
4- Disagree
5- Strongly Disagree

3.3 Procedures of Data Collection:

The population of this study consisted of MA translation students at Bahri University majoring in English Language (male and female) was selected purposely for the sake of this study, those who are taking scientific translation as a part of their courses.

3.4 Approach and Program:

The statistical analysis of this study basically depended on descriptive and analytical method. The quantitative data were analyzed through the statistical Package for Scientific System (SPSS), descriptive statics such as mean, standard deviation were calculated to examine the variability of the scores of the participants as seen in the results. Other statistical means like the one - way method and the ANOVA (analysis of variance) were computed to compare the significant statistical differences regarding the obtained answers.

3.5 Reliability and Validity:

Validating a research tool is determining whether it is accurate and determining whether the research truly measures that which it was intended to measure or how truthful the research results are. In other word to express that in medical translation "Does the research instrument allow you to hit the bull's eye of your research object?" (Golafshani 2003- 599).

To ensure the validity of the research tools, the researcher consulted 6 PHD holders' translation experts' referees. The researcher distributed copies of the students' test and the English language translation teachers

‘questionnaire to the experts so as to give their opinions, judgment and recommendations about these instruments with regard to their suitability, clarity and relevance.

The table below illustrates the information of consultants.

Table No 3.2

No	Name	Post	University
1	Proff . Nassir Elsheikh Mohammed	Associate professor	Omdurman Ahlia University
2	Dr. Tag Elsir Hassan Bashoum.	Assistant professor	Sudan University of Science and Technology
3	Dr.Hillary Marino Pitia	Assistant professor	Sudan University of Science and Technology
4	Dr.Areeg Osman Ahmed	Assistant professor	Sudan University of Science and Technology
5	Dr. ElmontasirBillah Rabie Hassan Badawi	Assistant professor	Alzaiem Alazhari University
6	Dr.Abdelazem Othman Mohammad.	Assistant professor	Omdurman Islamic University

3.5.1 Reliability of the Test and Questionnaire:

Reliability Statistics

Cronbach's Alpha	N of Items

Reliability Statistics

Cronbach's Alpha	N of Items
98.5	15

Table (3.3): The Reliability Coefficient of the Questionnaire

Reliability Statistics

Cronbach's Alpha	N of Items
.81.2	28

Table (3.4): The Reliability of the Test

Reliability Statistics

Cronbach's Alpha	N of Items
.84	4

It should be noted that the higher the alpha, the higher the reliability. According to Mueller (1986), a well-constructed scale should have a reliability coefficient of (0.80) or higher, although some researchers suggest some lower coefficients to be acceptable as well. As shown in the three tables mentioned above, the alpha coefficients are (.98), (.84) and (.81)

signal a very high level of internal consistency. Thus, the two tools are ready to be administered.

3.6 Procedure:

The researcher distributed the test to the students in hand to answer it. The questionnaire distributed to respondent in hand and via e-mails to look over the items and make up their minds, and then gave them enough time to fill it. After that the researcher collected the questionnaire to be ready for analysis and discussion.

3.7 Summary of the Chapter:

This chapter has provided description of research tools and their procedures; the collected data will be statistically analyzed and discussed in the next chapter.

Chapter Four

Data Analysis, Results and Discussions

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Data Analysis, Results and Discussions

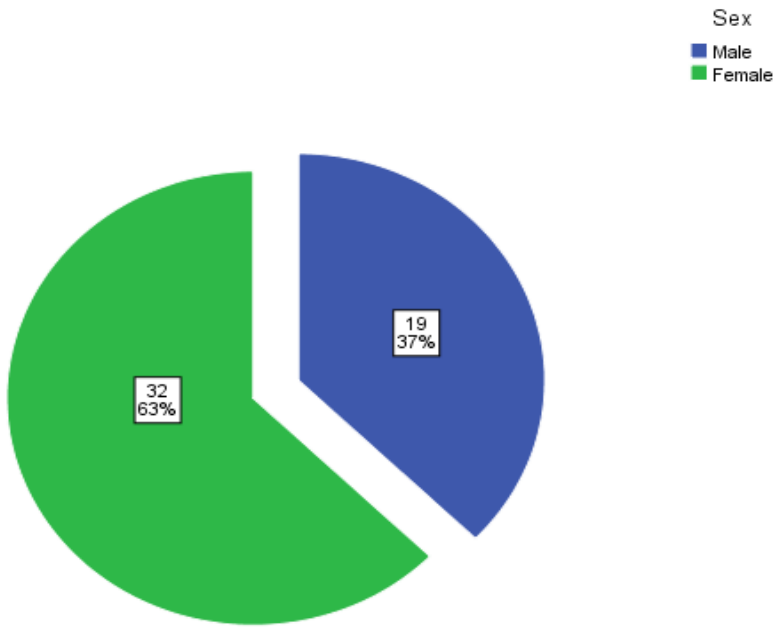
4.0. Introduction

This chapter presents the results of the analyses obtained from the research tools. It also discusses the findings starting with the test that covers a range of medical terms, and then proceeds to the results of the questionnaire that designed to explore the English language teachers' views on the difficulties encountering MA students of translation in translating medical terms. The discussion also tries to confirm the hypotheses suggested earlier in the light of the findings reached, the previous related studies and the researcher's own knowledge and experience.

4.1 Demographic Information:

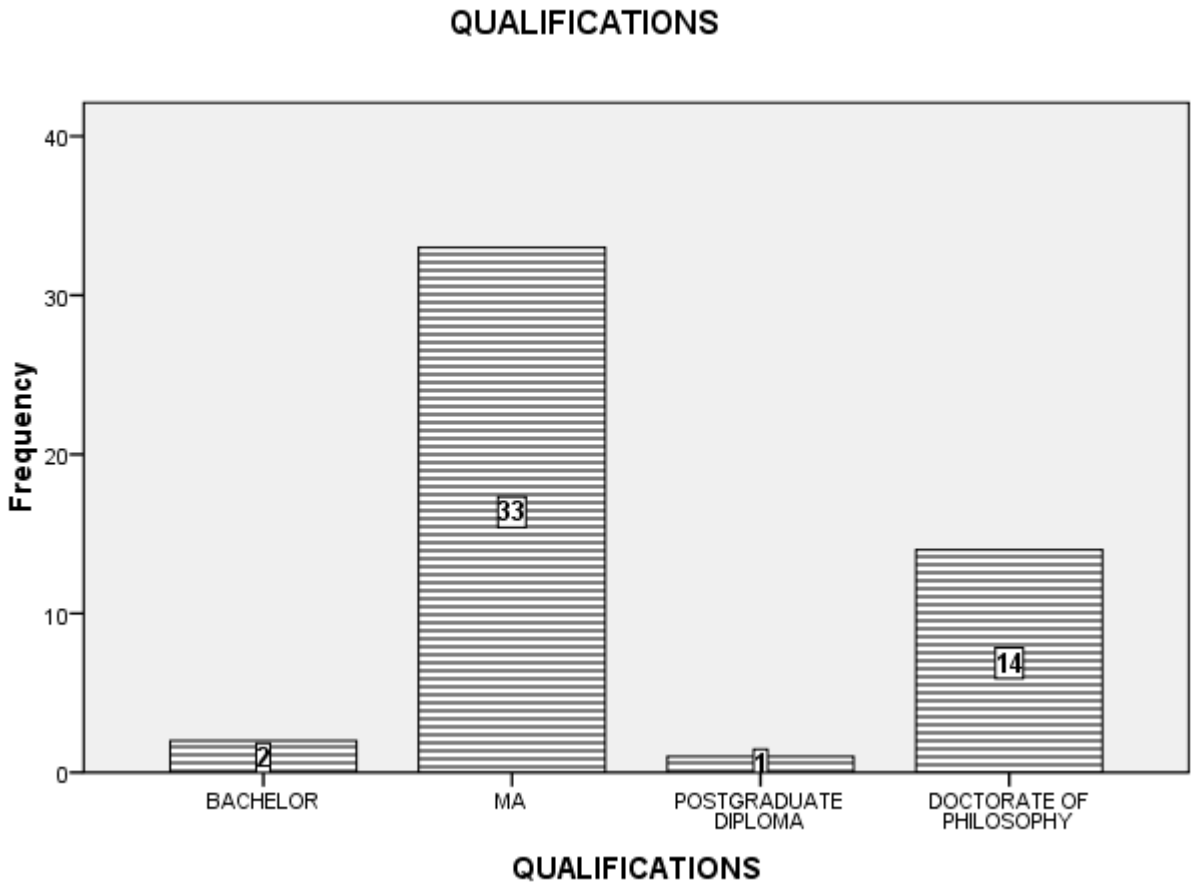
In this section, the demographic information of the respondents is presented. Such information is discussed in terms of sex, qualifications and experience**.**

Figure 4.1; Respondents' gender



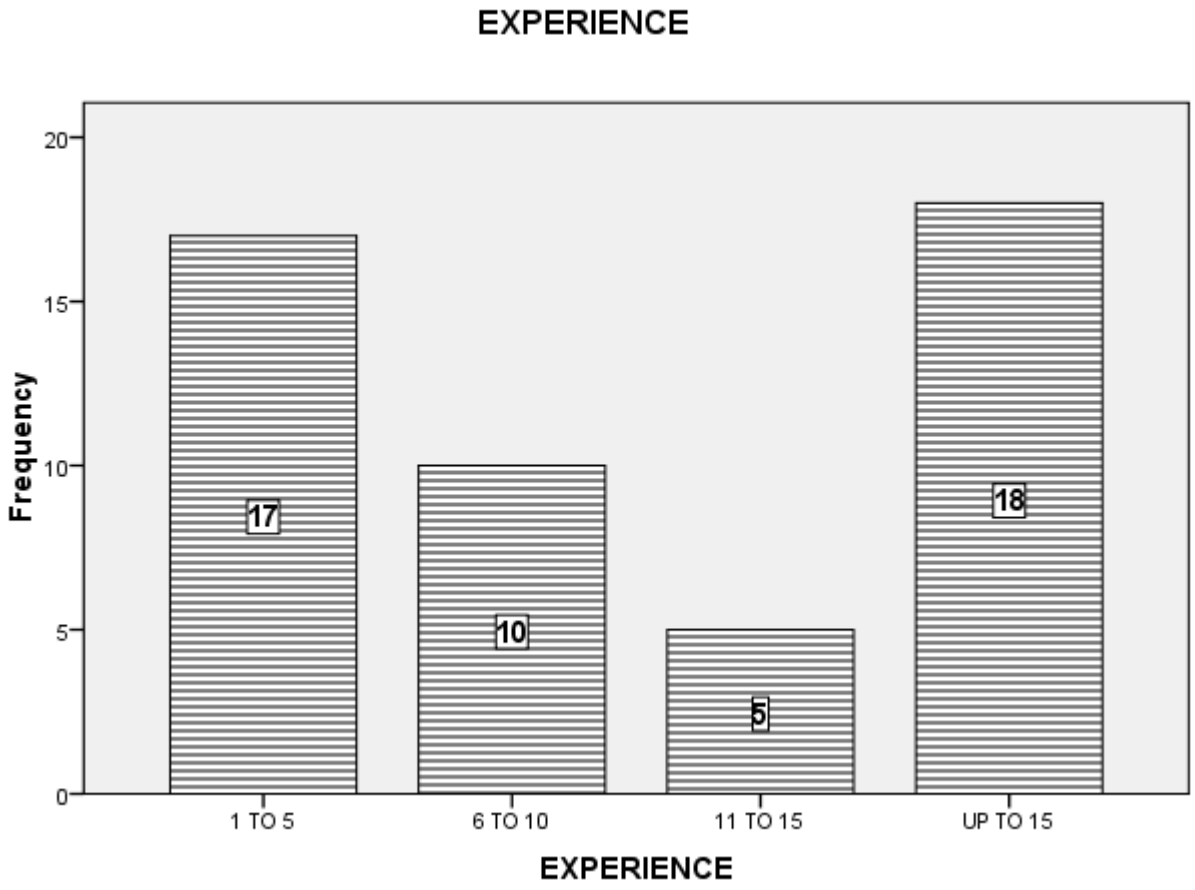
As demonstrated in figure 4.1, the number of female is more than the number of male. That is, the number of female is 32 whereas the number of male is 19.

Figure 4.2: Respondents' qualifications



As shown above, 50 respondents participated in answering the questionnaire. Of whom, 33 with an MA degree, 14 with Ph.D. degree, 1 with post-graduate diploma and 2 with a bachelor degree. All the respondents are specialized in the English language. Being specialized in English would give a broader insight into the difficulties encountering students in medical translation.

Figure 4.3: Respondents' qualifications



It is clear that most of the respondents who participated in the current study have long been teaching English as a foreign language. As shown above, 18 respondents have been working in the field of teaching for more than 15 years followed by 5 whose working experience ranges from 11 to 15. The figure also shows that 10 respondents have experience ranging from 6 to 10. What is remarkable is that only 17 respondents have the least experience.

4.2 Results of the Test Analysis

This part is devoted to the results gained from the test analysis. The descriptive statistics measurement was utilized via which the mean, frequency and the standard deviation were determined. The first and the second questions have been analyzed in accordance with correctness and incorrectness of the answers provided by the respondents while the third one has been analyzed on the basis of the translation acceptability. It is worth mentioning that this acceptability is based on the official medical translation adopted by the professional translators and the World Health Organization transaction (WHO), more over is based on the contextual context, medical vocabulary, cohesion, coherence, and grammatical structure.

4.2.1 Respondents' performance in question one (Matching medical terms)

Table 4.1: Matching the medical term *Endocrinology* with its Arabic equivalent.

Endocrinology

	Frequency	Percent	Valid Percent	Cumulative Percent
INCORRECT ANSWERS	84	92.3	93.3	93.3
CORRECT ANSWERS	6	6.6	6.7	100.0
Total	90	98.9	100.0	

The table above illustrates the students' performance in question one. It is clear that 84 Students from the total of 90 failed to match the medical term *Endocrinology* with its Arabic equivalent. Only 6 students with a percentage index of 6.7 succeeded in answering this question. A clear image of the weak performance of the students in this question has been projected in the following figure:

Figure 4.4: Matching the medical term *Endocrinology* with its Arabic equivalent.

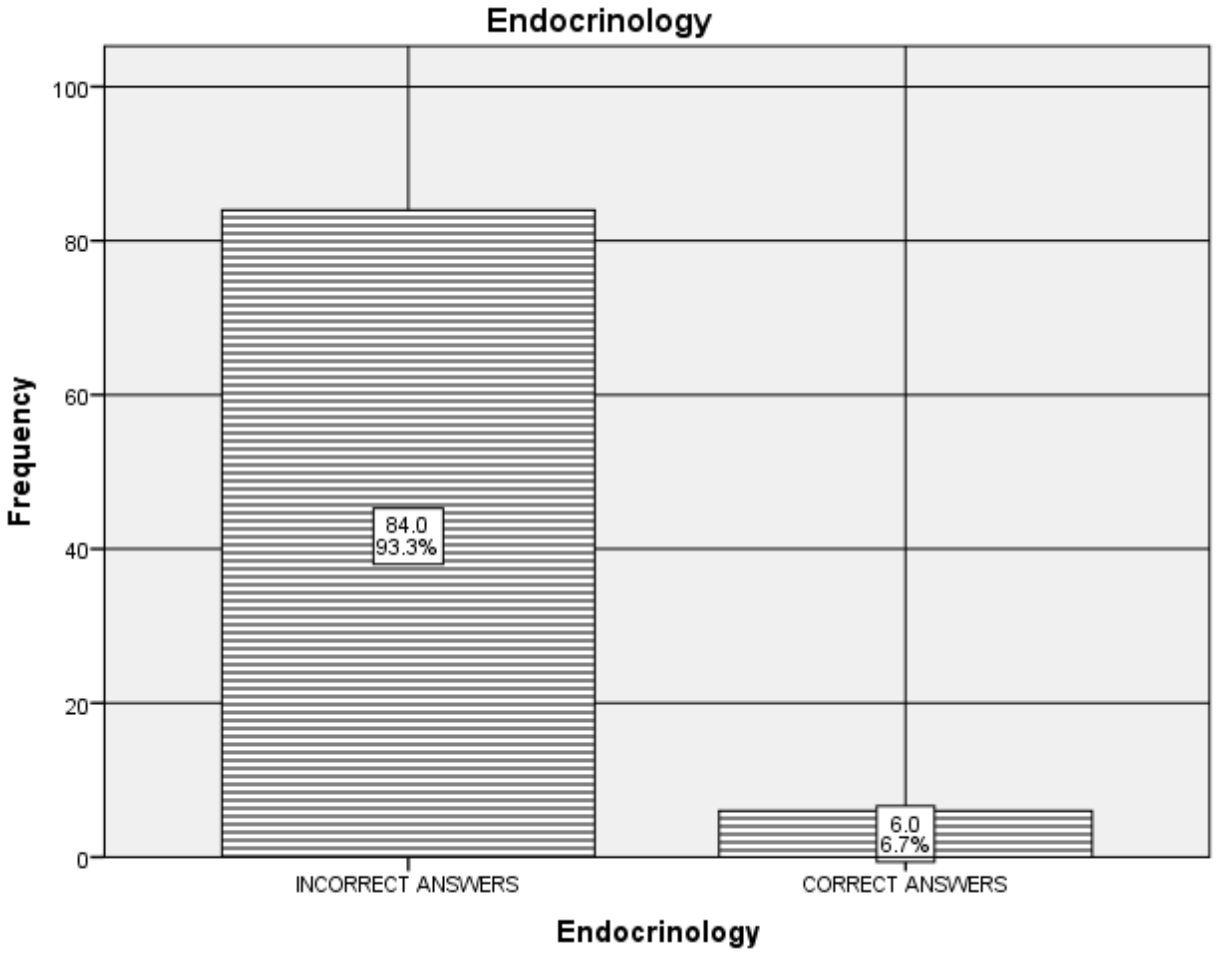


Table 4.2: Matching the medical term *Bronchioles* with its Arabic equivalent.

Bronchioles

	Frequency	Percent	Valid Percent	Cumulative Percent
INCORRECT ANSWERS	82	90.1	91.1	91.1
CORRECT ANSWERS	8	8.8	8.9	100.0
Total	90	98.9	100.0	

Matching the medical term (Bronchioles) with its Arabic equivalent was another challenge to MA students of translation. That is, 82 students with a percentage index of 91.1 were unable to respond to this question whereas 8 with a percentage index of 8.9 succeeded in doing so. Such a poor performance has been shown in figure 4.4

Figure 4.5: Matching the medical term *Bronchioles* with its Arabic equivalent.

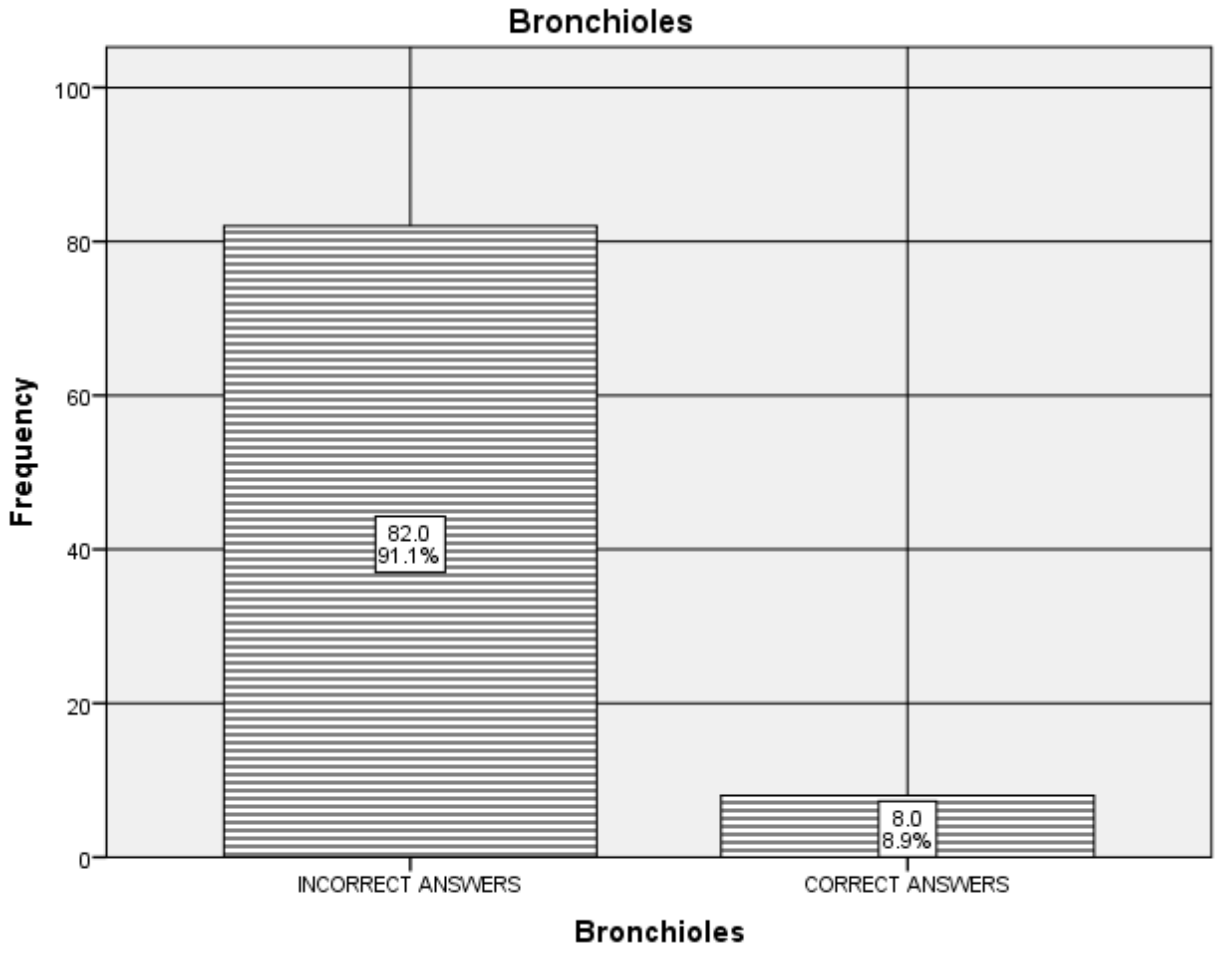


Table 4.3: Matching the medical term *Gastroenterology* with its Arabic equivalent.

Gastroenterology

	Frequency	Percent	Valid Percent	Cumulative Percent
INCORRECT ANSWERS	80	87.9	88.9	88.9
CORRECT ANSWERS	10	11.0	11.1	100.0
Total	90	98.9	100.0	

Table 4.3 demonstrates the respondents' performance in answering question three. It is clear that the vast majority of the students failed to match the medical term (Gastroenterology) with its Arabic equivalent. That is, 80 of them with a percentage index of 88.9 were unable to answer this question. Only 10 students with a percentage index of 11.1 were able to answer it. A clearer view of the students' performance in this question has been presented in figure 4.5.

Figure 4.6: Matching the medical term *Gastroenterology* with its Arabic equivalent

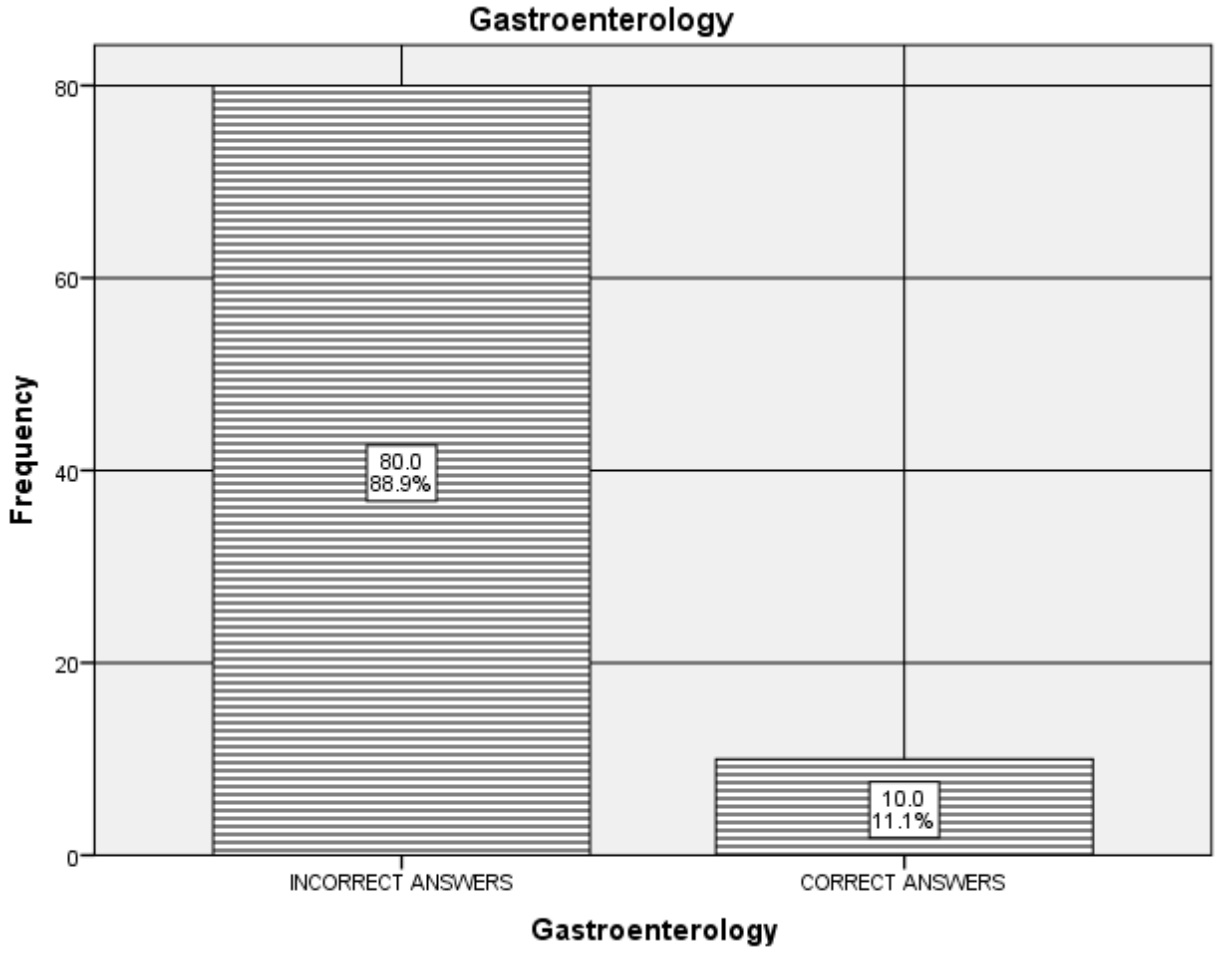


Table 4.4: Matching the medical term *Gynecology* with its Arabic equivalent

Gynecology

		Frequency	Percent	Valid Percent	Cumulative Percent
	INCORRECT ANSWERS	77	84.6	85.6	85.6
	CORRECT ANSWERS	13	14.3	14.4	100.0
	Total	90	98.9	100.0	

Similarly, most of the respondents were unable to match the medical term (***Gynecology***) with its Arabic equivalents. Thus, 77 students with a percentage index of 85.6 failed to give the correct answer whereas 13 of them with a percentage of 14.4 were able to do so. This result has been handled in the in figure 4.6.

Figure 4.7: Matching the medical term *Gynecology* with its Arabic equivalent

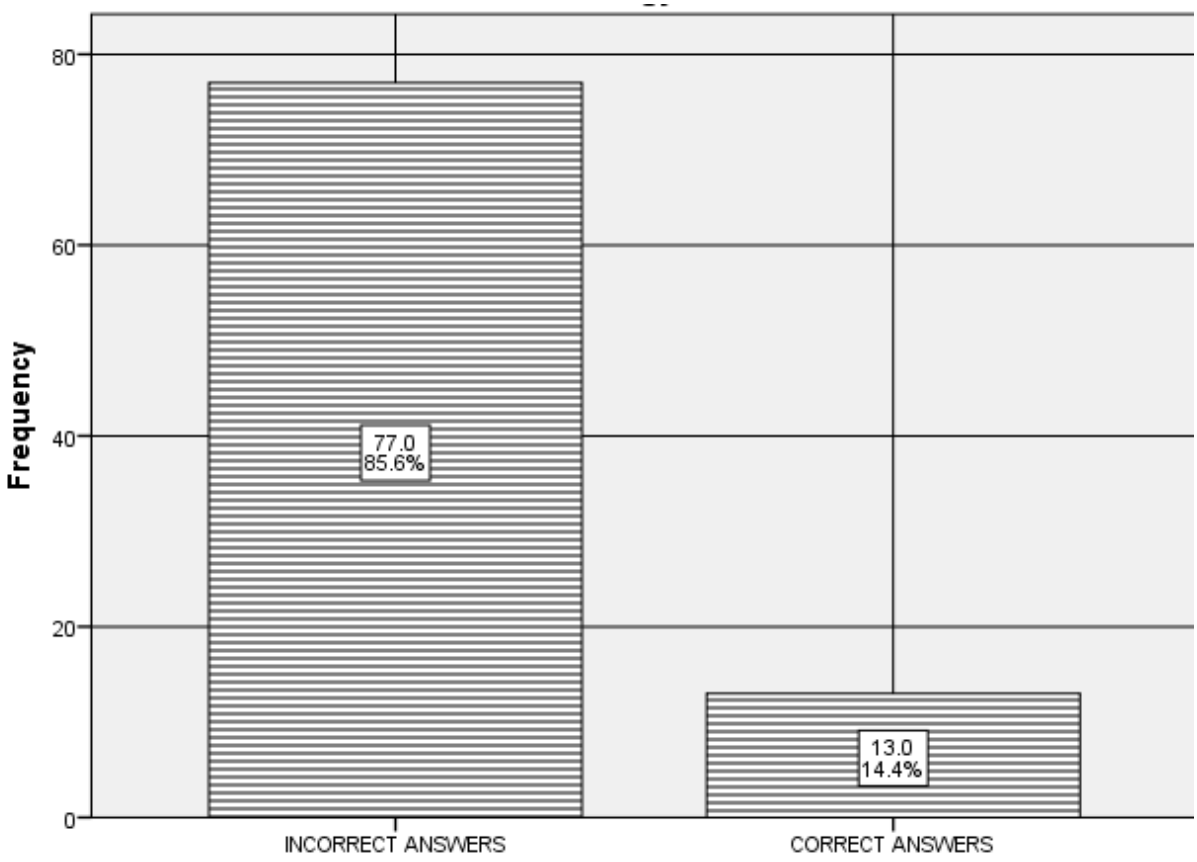


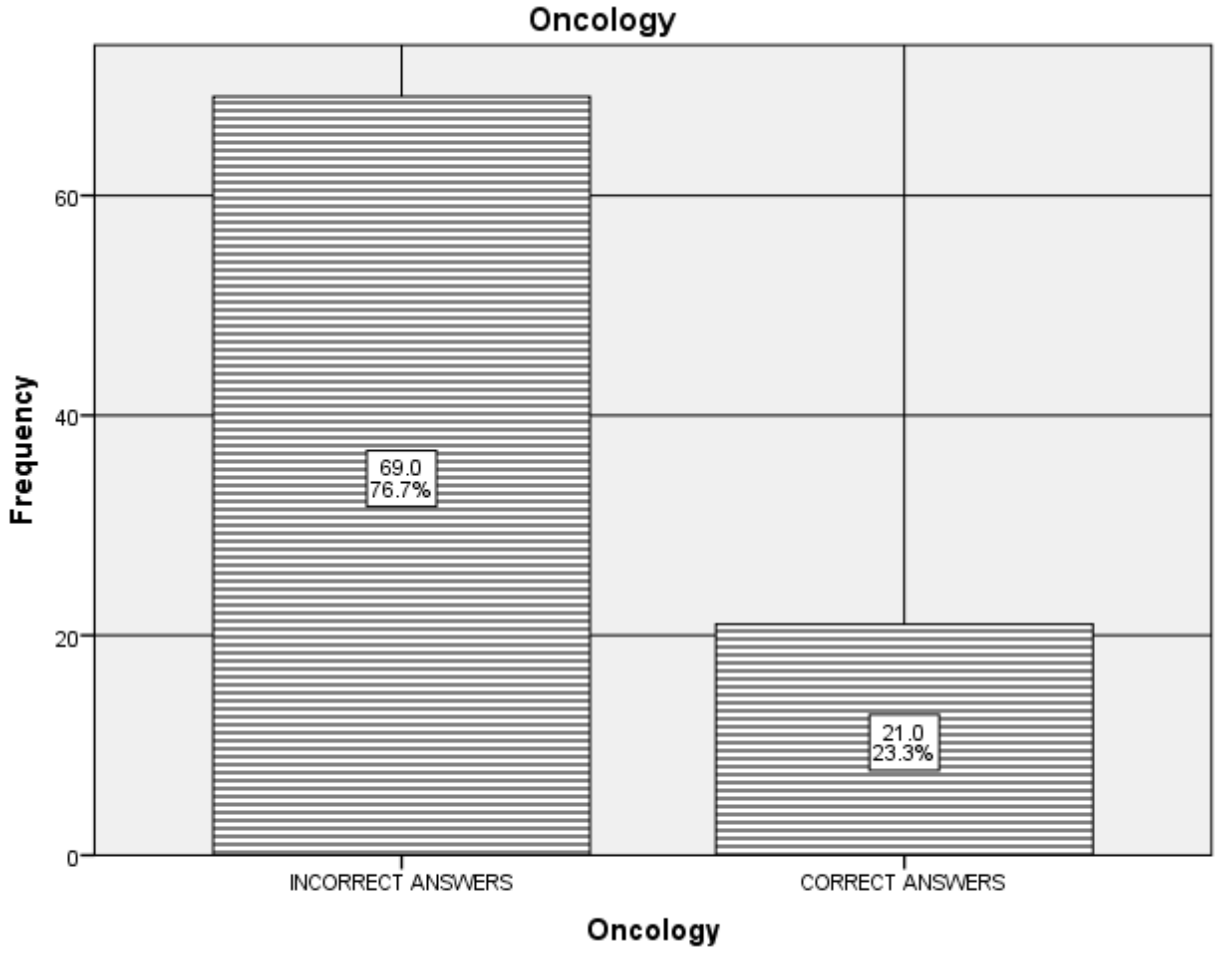
Table 4.6: Matching the medical term *Oncology* with its Arabic equivalent

Oncology

	Frequency	Percent	Valid Percent	Cumulative Percent
INCORRECT ANSWERS	69	75.8	76.7	76.7
CORRECT ANSWERS	21	23.1	23.3	100.0
Total	90	98.9	100.0	

Translating the medical term (Oncology) was also a problem facing MA students of translation. This is supported by the fact that 69 students with a percentage of 76.7 were unable to give the correct translation for this term. In contrast, 21 students with a percentage of 23.3 were able to do so. To have an extra, a clear image of the respondents' attainment in this question, figure 4.7 has been provided.

Figure 4.7: Matching the medical term *Oncology* with its Arabic equivalent



4.2.2: Respondents' performance in question two: Draw a circle round the letter of the correct answer.

Question 1: The Execratory system includes:

a) Saliva b) Vertebrae

c) Urine d) Skull

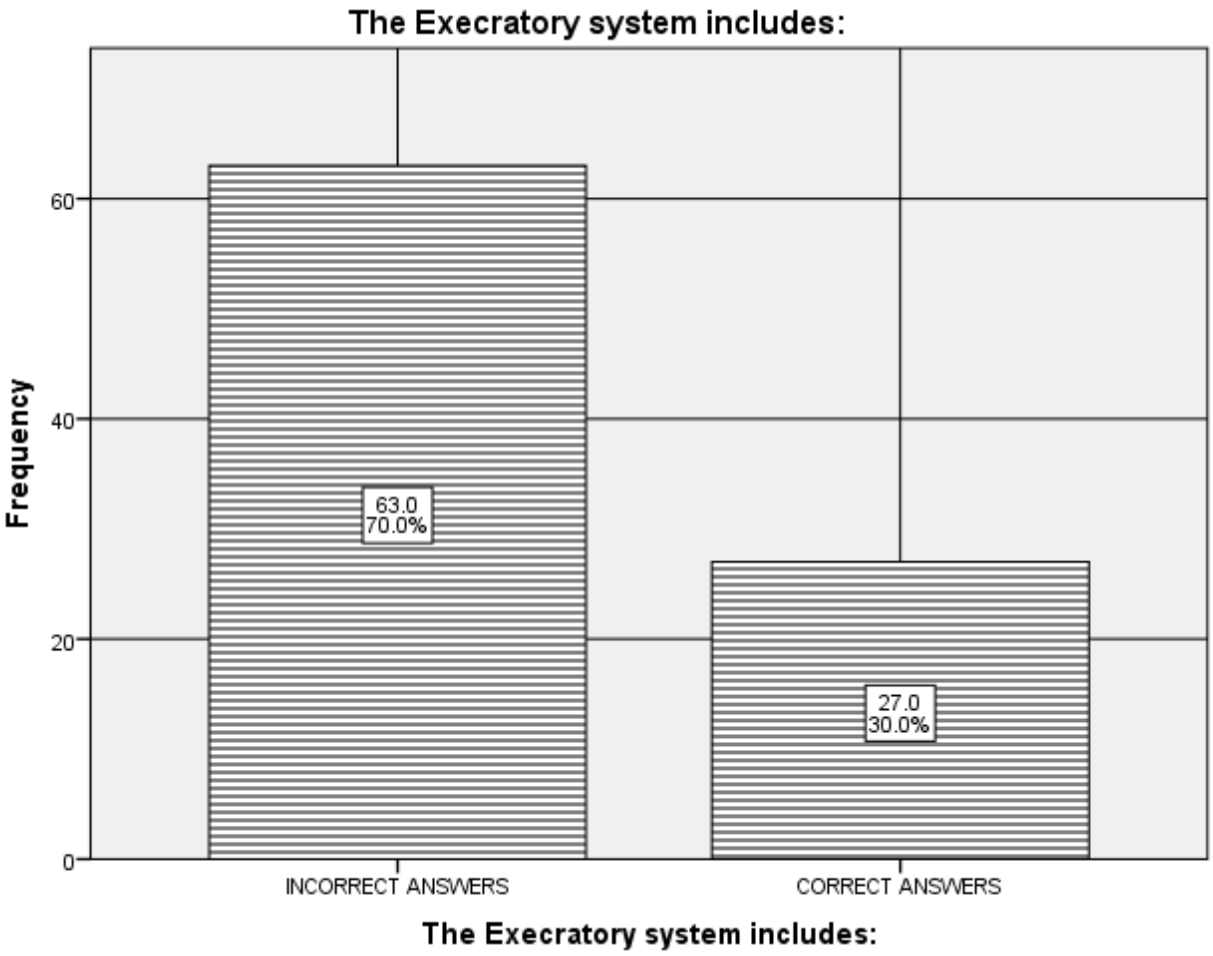
Table 4.7: The Execratory system includes:

The Execratory system includes:

		Frequency	Percent	Valid Percent	Cumulative Percent
	INCORRECT ANSWERS	63	65.6	70.0	70.0
	CORRECT ANSWERS	27	28.1	30.0	100.0
	Total	90	93.8	100.0	

In this question, the students were asked to choose the best answer. Obviously, 63 students with a percentage of 70 selected the wrong choice whereas 27 of them with a percentage of 30 selected the correct answer. For an extra view, the result has been handled in figure 4.8 provided below.

Figure 4.8: The Execratory system includes:



Question 2: GP is an abbreviation which stands for:

a) General practitioner b) General party

c) Grand Pa c) Genuine Person

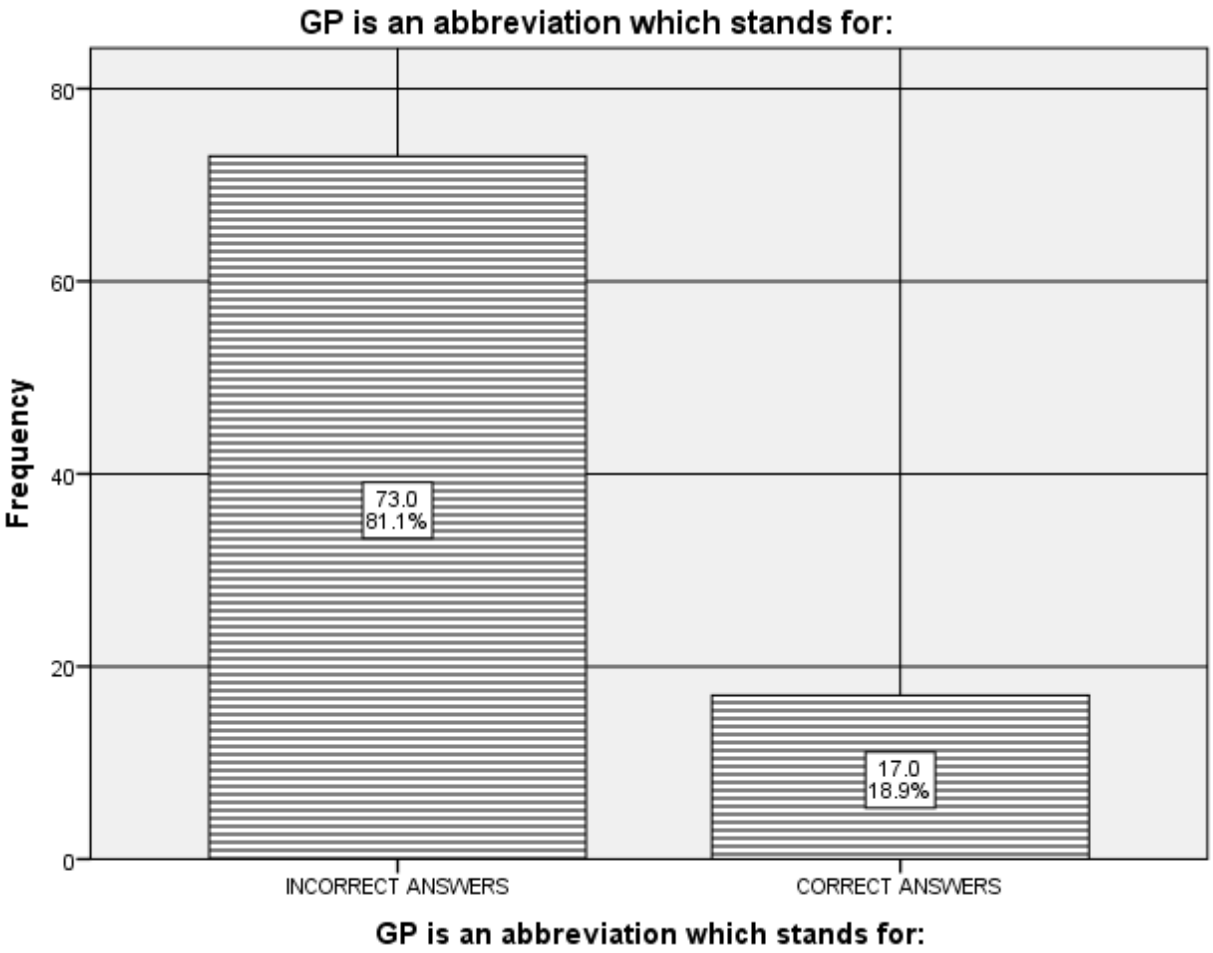
Table 4.8: GP is an abbreviation which stands for:

GP is an abbreviation which stands for:

	Frequency	Percent	Valid Percent	Cumulative Percent
INCORRECT ANSWERS	73	76.0	81.1	81.1
CORRECT ANSWERS	17	17.7	18.9	100.0
Total	90	93.8	100.0	

Table 4.8 demonstrates that 73 students with a percentage of 81.1 failed to choose the correct answer. In contrast, only 17 students with a percentage index of 18.9 succeeded in choosing the correct answer. For more view of the respondents' performance in this question, the correct and incorrect answers have been handled in figure 4.9.

Figure 4.9: GP is an abbreviation which stands for:



Question3: **Neurologist means:**

a) Heart specialist b) Brain specialist

c) Tooth specialist d) Skin specialist

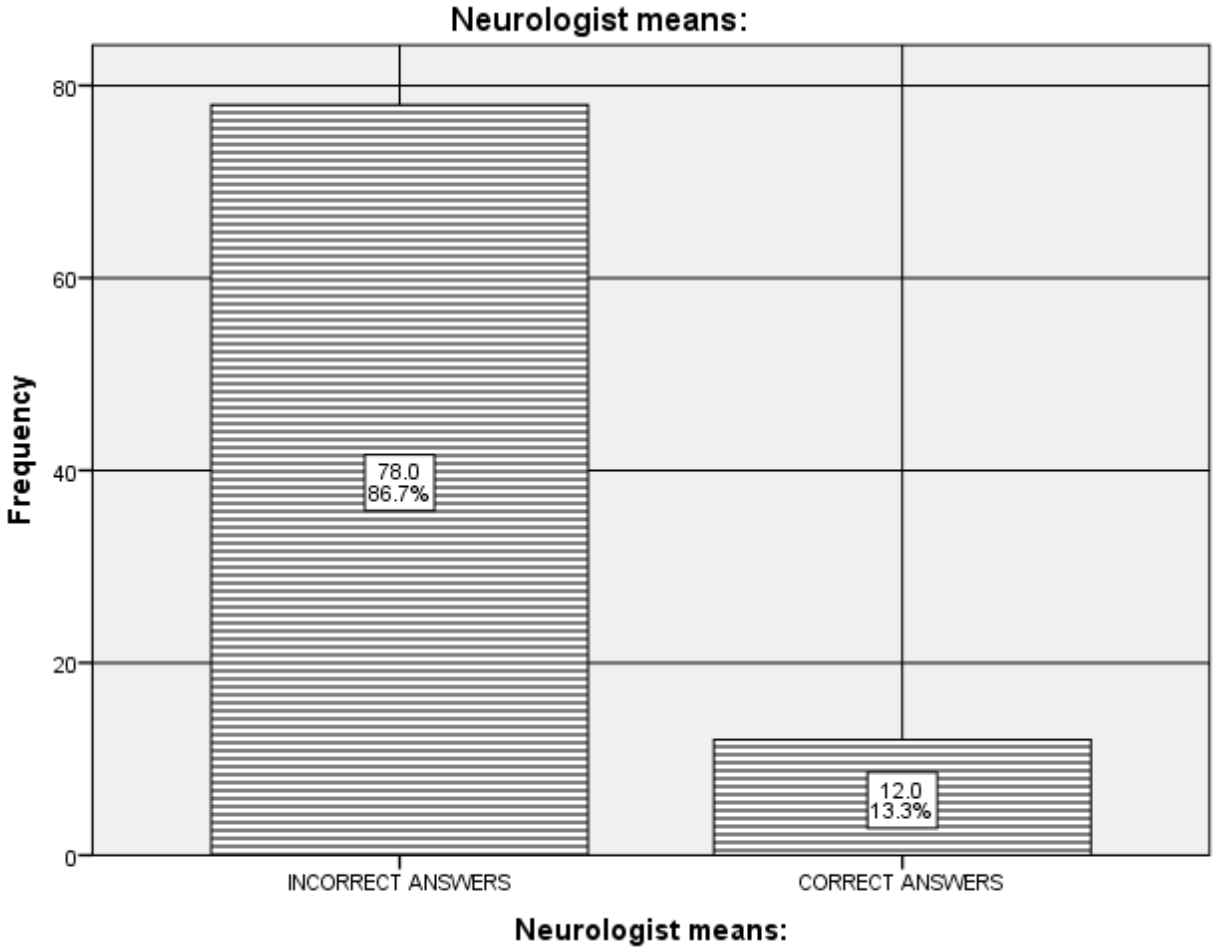
Table 4.9: Neurologist means:

Neurologist means:

	Frequency	Percent	Valid Percent	Cumulative Percent
INCORRECT ANSWERS	78	81.3	86.7	86.7
CORRECT ANSWERS	12	12.5	13.3	100.0
Total	90	93.8	100.0	

Table 4.9 displays that 78 respondents with a percentage of 86.7 failed to choose the correct alternative. However, 12 of them with a percentage of 13.3 succeeded in doing so. This weak performance has been explained in the following figure:

Figure 4.10: Neurologist means:



Question 4: **Gastric Ulcer is a disease which effects on:**

a) Lungs b) Liver

c) Kidney d) Stomach

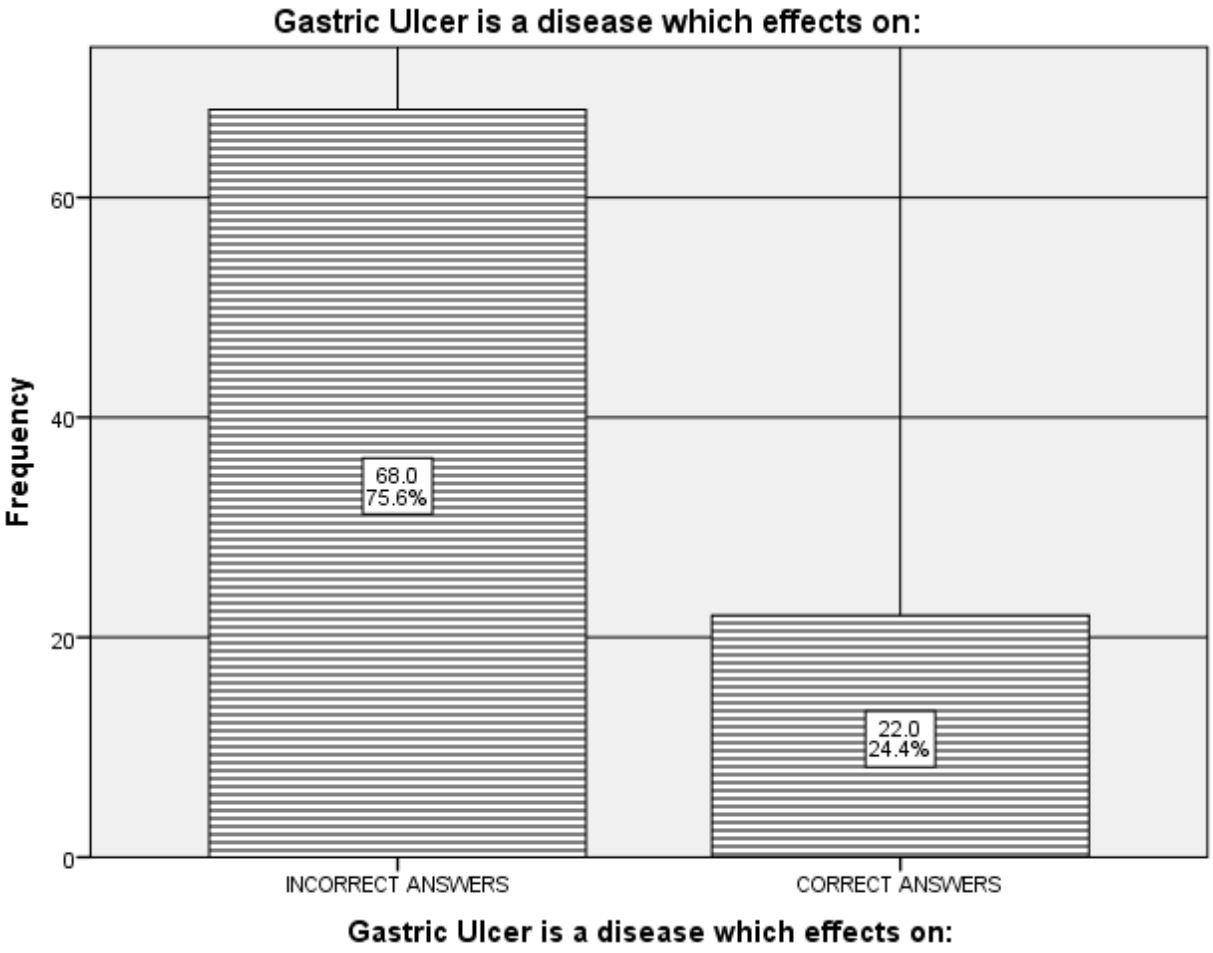
Table 4.10: Gastric Ulcer is a disease which effects on:

Gastric Ulcer is a disease which effects on:

	Frequency	Percent	Valid Percent	Cumulative Percent
INCORRECT ANSWERS	68	70.8	75.6	75.6
CORRECT ANSWERS	22	22.9	24.4	100.0
Total	90	93.8	100.0	

As shown in table 4.10, 68 respondents with a percentage of 75.6 were unable to choose the correct answer. In contrast, 22 respondents with a percentage index of 24.4 were able to do so. An extra image of correct and incorrect answers has been projected in the following figure:

Figure 4.11: Gastric Ulcer is a disease which effects on:



Question 5: **Code Blue is a standard definition which refers to an argent case on:**

a) Bronchi b) Intestines

c) Cardiopulmonary d) Spine

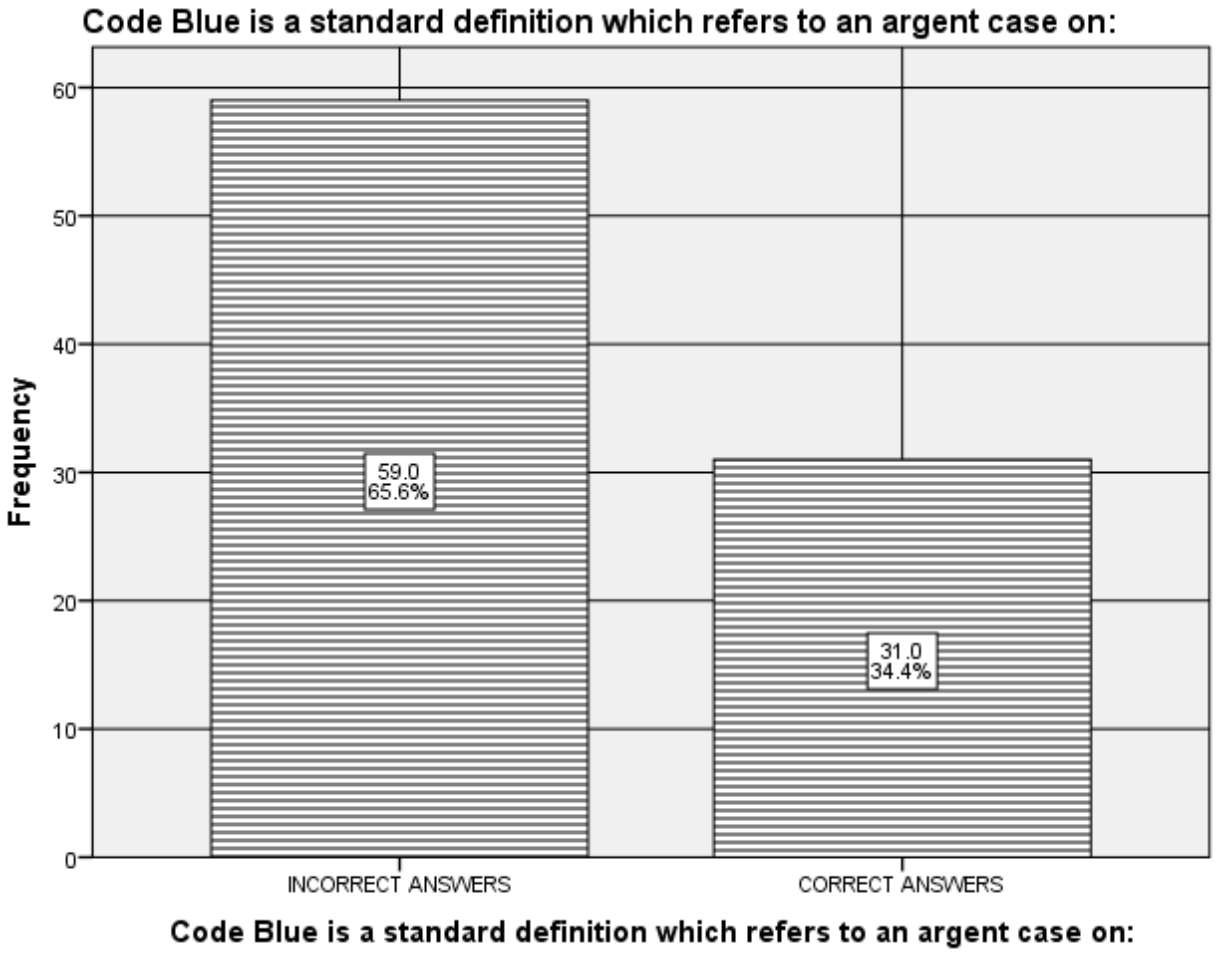
Table 4.11: Code Blue is a standard definition which refers to an argent case on:

Code Blue is a standard definition which refers to an argent case on:

		Frequency	Percent	Valid Percent	Cumulative Percent
	INCORRECT ANSWERS	59	61.5	65.6	65.6
	CORRECT ANSWERS	31	32.3	34.4	100.0
	Total	90	93.8	100.0	

The performance in this question was to- some extent- better compared to their performance in the aforementioned questions. That is, 31 students with a percentage of 34.4 succeeded in selecting the correct answer whereas 59 of them were unfortunately failed to do that. Figure 4.12 handles the correct and incorrect answers.

Figure 4.12: Code Blue is a standard definition which refers to an argent case on:



4.3 The respondents' performance in question three: Translate the following sentences into Arabic.

Question 1: Osteoporosis is a condition which bone loss exceeds bone replacement so that the bones become less dense, more porous, and more brittle

Table 4.12: Osteoporosis is a condition which bone loss exceeds bone replacement so that the bones become less dense, more porous, and more brittle

	Frequency	Percent	Valid Percent	Cumulative Percent
INCORRECT ANSWERS	85	88.5	94.4	94.4
CORRECT ANSWERS	5	5.2	5.6	100.0
Total	90	93.8	100.0	

Translating this sentence into Arabic was a real challenge to MA students of translation. That is, 5 respondents with a percentage of 5.6 succeeded in rendering it. Along with the translation taken from the official translators:

ان مرض هشاشة العظام هو حالة تتجاوز فقدان العظم واستبداله، بحيث تصبح العظام اقل كثافة واكثر مسامية واكثر هشاشة.

The following translations provided by the respondents were considered to be acceptable:

1. هشاشة العظام هي الحالة التي يفقد فيها فقدان العظم و تحركه من مكانه و ذلك لأن العظم يصبح اقل كثافة و تكثر فيه المسامات و الهشاشة .

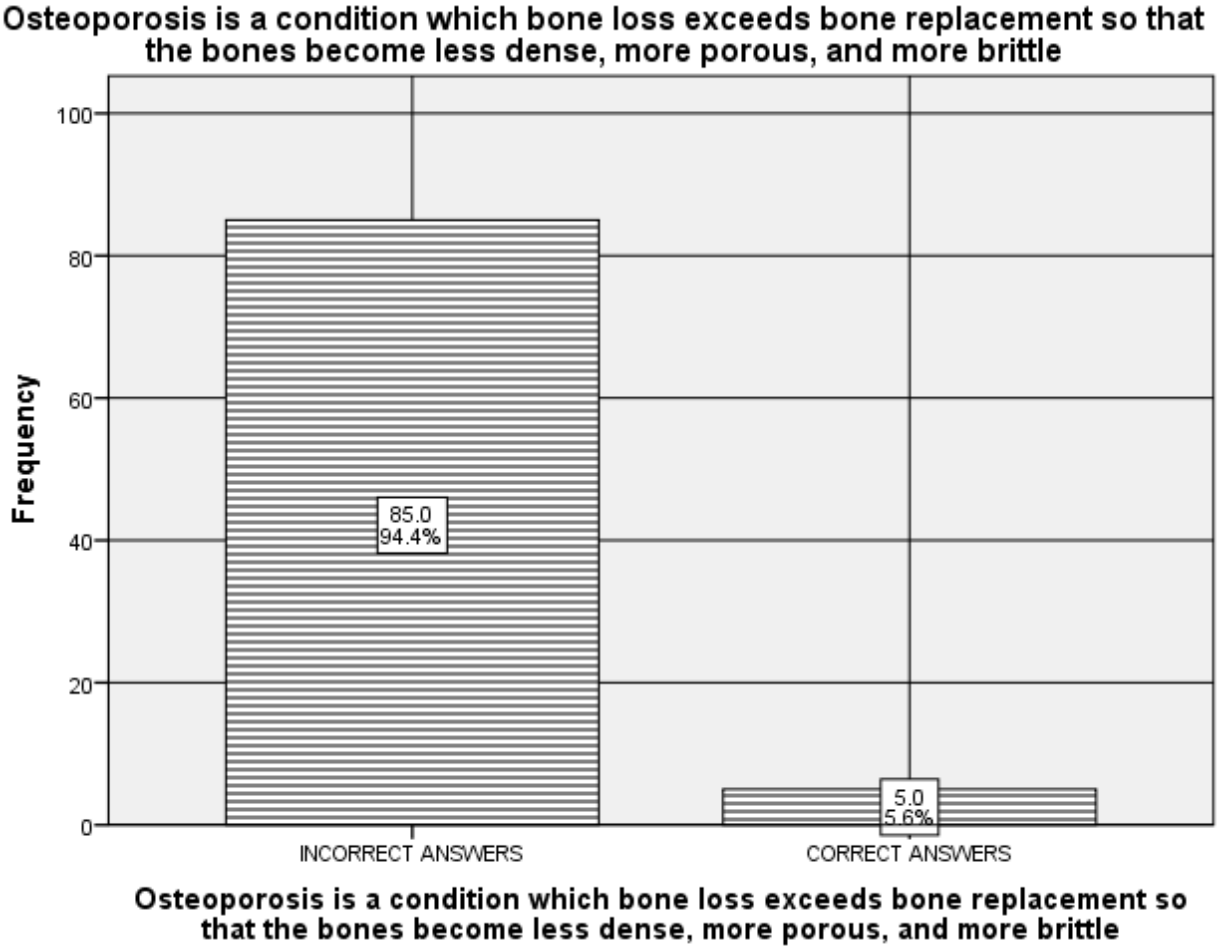
2. هشاشة العظام هي الحالة التي يفقد فيها العظم القدرة على عملية البناء و بالتالي يصبح العظم أقل كثافة و أقل هشاشة.
3. هشاشة العظام هي الحالة التي يكون فيها العظم أقل كثافة و أكثر مسامية ، حيث يفتقد السوائل و يصبح أكثر جفافاً و يحتاج الى تبديل.

Despite this success, 85 students with a percentage of 94.4 failed to give the correct rendering for this sentence. Some of their unacceptable translations are represented in:

1. تخلخل العظام حالة تكون فيها العظام قد تجاوزت فترة مرحلة استبدالها .
2. هشاشة العظام هي عندما تقل عملية بناء عظام جديدة لتآكل العظام القديمة و لذلك تصبح العظام متدنية .
3. هشاشة العظام هي الحالة التي تفقد فيها العظام حمايتها فتصبح اقل قدرة.
4. أوستيبروسيس هو الحالة التي تكون فيها العظام متخالفة .

The respondents' performance in rendering this sentence is shown in figure 4.13.

Figure 4.13: Osteoporosis is a condition which bone loss exceeds bone replacement so that the bones become less dense, more porous, and more brittle



Question 2: Cataracts are created when the lens of the eye- or a portion of it becomes opaque and sometimes swells or shrinks and interferes with vision

Table 4.13: Cataracts are created when the lens of the eye- or a portion of it becomes opaque and sometimes swells or shrinks and interferes with vision

	Frequency	Percent	Valid Percent	Cumulative Percent
INCORRECT ANSWERS	77	80.2	85.6	85.6
CORRECT ANSWERS	13	13.5	14.4	100.0
Total	90	93.8	100.0	

Table 4.13 shows that 13 respondents with a percentage index of 14.4 succeeded in giving the acceptable translation for the aforementioned sentence. The acceptability of their translation based on the official translators:

يتم تكوين المياه البيضاء بالعين عندما تصبح عدسة العين أو جزء منها معتماً، وفي بعض الاحيان تتضخم أو تنكمش ويحدث تداخل في الرؤيه.

Thus, the following translation seems to be acceptable:

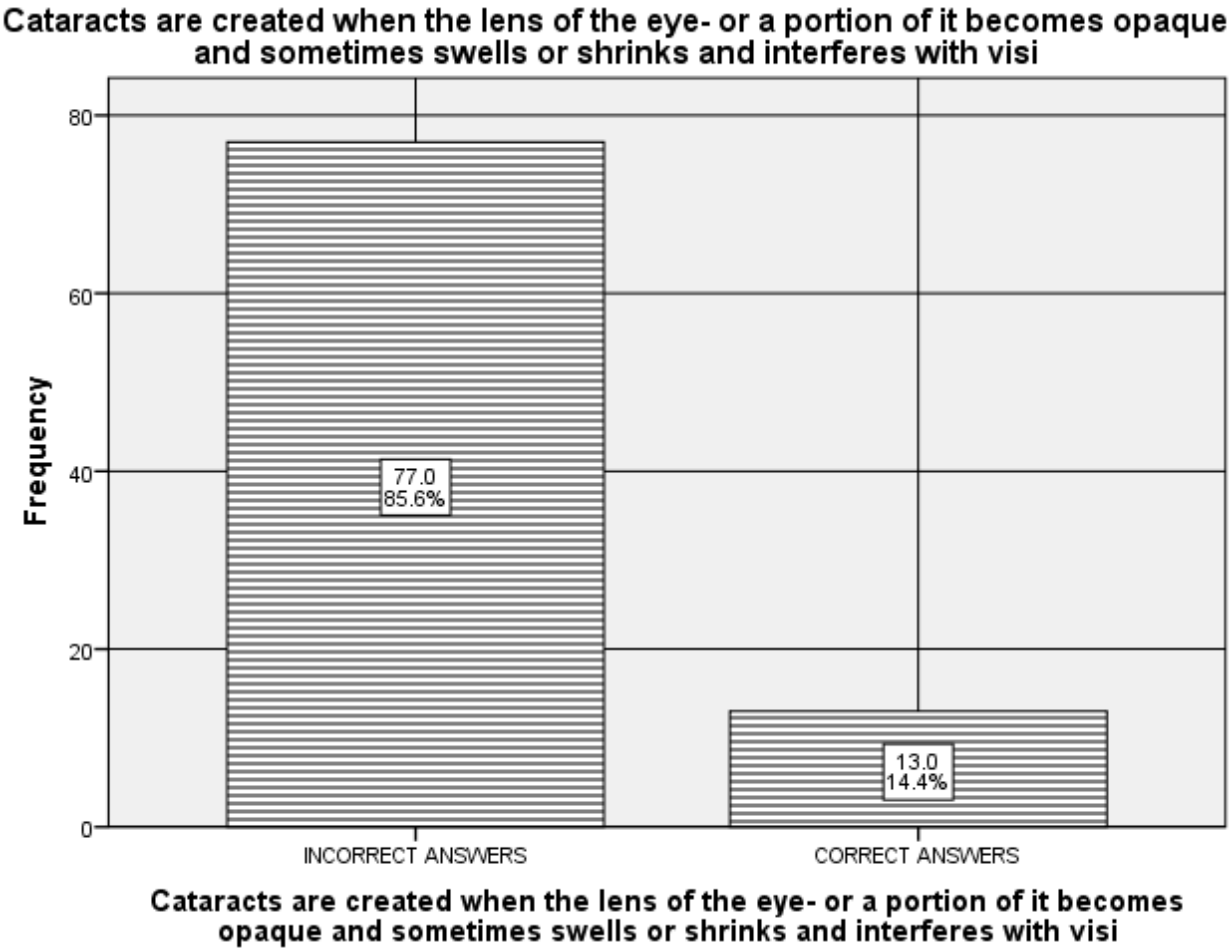
1. **تنشأ عتمة الأبصار عندما تكون عدسة العين أو جزء منها غير شفاف و في بعض الأحيان يؤثر التورم او الانكماش على الرؤية.**
2. **الكتراكت او الماء الأبيض هو حالة مرضية يحدث فيها اعتمام لكلتا العدستين او جزء منها ، و في بعض الأحيان تتورم او تنكمش الأمر الذي يؤثر على الرؤية.**
3. **يحدث مرض ماء العين عندما تكون عدسة العين معتمة و أحيانا تتورم او تنكمش ويحدث تداخل في الرؤيه .**

Furthermore, 77 respondents with a percentage of 85.6 failed to give acceptable translations. These translations were as follows:

1- **يحدث مرض العمى عندما تصبح عدسة العين او جزء منها معتما و تسبب انعدام الرؤيا**
2- **الماء السوداء تنتج عندما تكون العدسة في العين معتمة**
3- **الكتراكت هو أو ينشا من مشكلة في العين و أحيانا ينشأ من تداخل الرؤيا**
4- **سواد بؤرة العين يصيب العدسة او جزء من العين**
5- **عدم وضوح الرؤيا تنشأ عندما تصير عدسة العين أو جزء منها غير شفاف**

A concrete view of the answers to this question has been handled in figure 4.14.

Figure 4.14: Cataracts are created when the lens of the eye- or a portion of it becomes opaque and sometimes swells or shrinks and interferes with vision



Question 3: Arthritis and rheumatism are general names for approximately 100 diseases that produce inflammation or degeneration of connective tissue

Table 4.14: Arthritis and rheumatism are general names for approximately 100 diseases that produce inflammation or degeneration of connective tissue

	Frequency	Percent	Valid Percent	Cumulative Percent
INCORRECT ANSWERS	77	85.6	85.6	85.6
CORRECT ANSWERS	7	7.8	7.8	93.3
BLANK	6	6.7	6.7	100.0
Total	90	100.0	100.0	

In the table above, 7 respondents with a percentage of 7.8 succeeded in rendering this sentence into Arabic. Their acceptable translations are as follows:

1. إن مرض الروماتيزم والتهاب المفاصل هو من الأسماء الشائعة لما يقارب مائة من الأمراض، والتي تنتج عنها الإلتهاب واللأمراض التنكسيه للنسيج الضام.
2. إلتهاب المفاصل الحاد و الروماتيزم عبارة عن مسميات عامة لعدة أمراض تصيب قرابة المائة مرضاً و هي المسببة للأمراض التنكسية في جسم الإنسان.

Adversely, 77 respondents with a percentage of 85.6 failed to give acceptable translations. Some of their responses were:

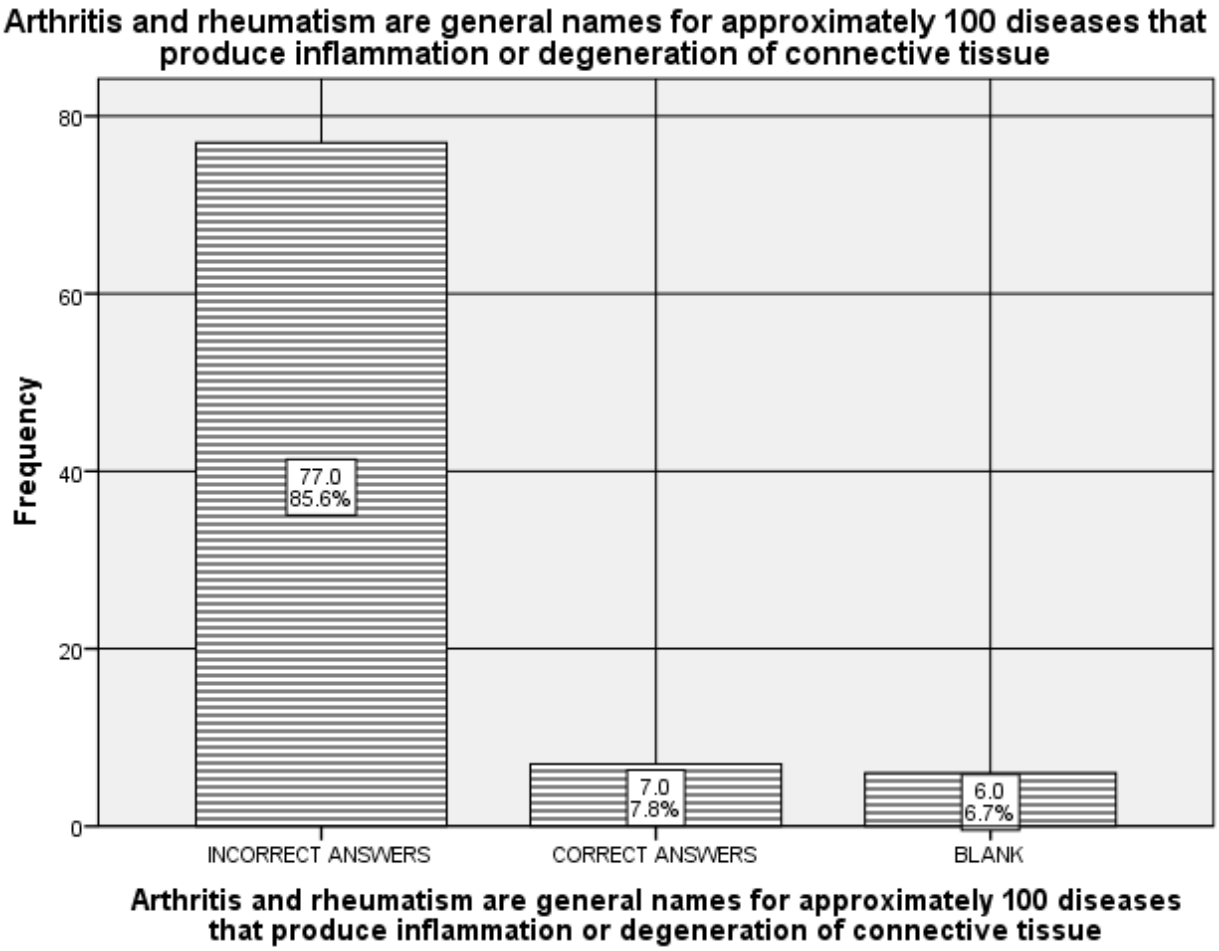
1- الأريثريتس و الروماتيزم هي مجموعة من الأمراض تبلغ مائة نوع من الأ مراض

2- الروماتيزم هو تورم اسم عام تقريبا مية مرض نسبة للالتهابات او تنفخ النسيج

3- التها ب المفاصل او الروماتيزم اسم عام يحدث عند الإلتهاب تتنتفخ الانسجة العامة

Unexpectedly, 6 respondents with a percentage of 6.7 did not translate this sentence. This might be evidence to the difficulties encountering MA students in rendering medical terms. A more image of the respondents' performance in translating this sentence has been shown in figure 4.15.

Figure 4.15: Arthritis and rheumatism are general names for approximately 100 diseases that produce inflammation or degeneration of connective tissue



Question 4: Pleural membrane is the thin sheets of the muscle between each rib that expand when air is inhaled and contract when air is exhaled.

Table 4.15: Pleural membrane is the thin sheets of the muscle between each rib that expand when air is inhaled and contract when air is exhaled.

	Frequency	Percent	Valid Percent	Cumulative Percent
INCORRECT ANSWERS	74	82.2	82.2	82.2
CORRECT ANSWERS	8	8.9	8.9	91.1
BLANK	8	8.9	8.9	100.0
Total	90	100.0	100.0	

Table 4.15 demonstrates the respondents' lack of ability in translating contextualized medical terms. Clearly, only 8 respondents were able to give the acceptable translations which were in line of the official translation shown below:

ان الغشاء الجانبي للعضله هو عباره عن اغشية رفيعة للعضلة تفصل بين كل ضلع وآخر ،حيث تتوسع عندما يتم استنشاق الهواء وتتقلص عندما يتم زفره .

Their acceptable translations were as follows:

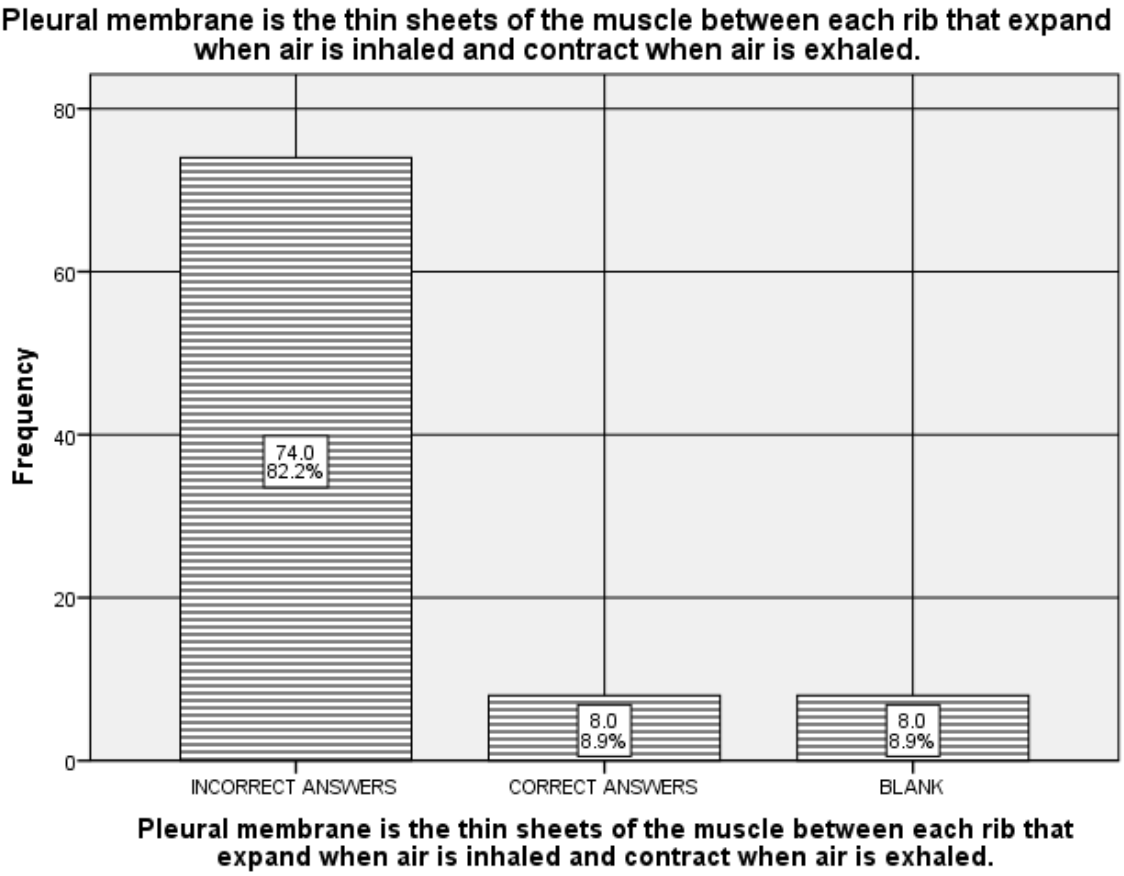
1- غشاء الرئة عبارة عن غشاء رقيق ينبسط عند الشهيق و ينكمش عند الزفير.
2- غشاء الرئة عبارة عن غشاء رقيق يفصل بين كل ضلعة و الأخرى و يتمدد عند الشهيق و ينكمش عند الزفير.

In contrast to this acceptable translation, 74 respondents with a percentage of 82.2 translated this sentence wrongly. Their unacceptable translations were as follows:

1- الغشاء الصدري هو غشاء ينقبض و ينبسط عند التنفس
2- الأغشية التي تحيط بالكلية و هي تفصل بين كل ضلعة و تتوسع عند دخول الهواء كما تضيق عند خروج الهواء أو أثناء عملية التنفس
3- الغشاء الجانبي هو عبارة عن صفائح دقيقة بين العضلة بين كل ضلعة و التي تتسع عند الاستنشاق و تنكمش عند الزفير

Unexpectedly, 8 respondents with a percentage index of 8.9 did not translate this sentence. The following figure gives a clear image of the respondents' rendering to this sentence:

Figure 4.16: Pleural membrane is the thin sheets of the muscle between each rib that expand when air is inhaled and contract when air is exhaled.



Question 5: There are differences between kidney –gallbladder, and between lymph nodes - spleen.

Table 4.16: There are differences between kidney –gallbladder, and between lymph nodes - spleen.

	Frequency	Percent	Valid Percent	Cumulative Percent
INCORRECT ANSWERS	72	80.0	80.0	80.0
CORRECT ANSWERS	11	12.2	12.2	92.2
BLANK	7	7.8	7.8	100.0
Total	90	100.0	100.0	

As demonstrated in table 4.16, 11 respondents from the total of 90 were able to give the most acceptable translation for the aforementioned sentence. Based on the official translation for this sentence (هنالك اختلافات بين الحويصلة الصفراوية والكلية، وبين الغدد اللمفاوية والطحال), the following translations were regarded as acceptable:

1- هناك اختلافات بين الكلية ، المرارة وبين الغدد الليمفاوية و الطحال.

2- هناك اختلافات بين الكلية، و الحويصلة الصفراوية وبين الغدد الليمفاوية و الطحال.

However, 72 students with a percentage of 80 produced unacceptable translations. Some of their translations were represented in the following:

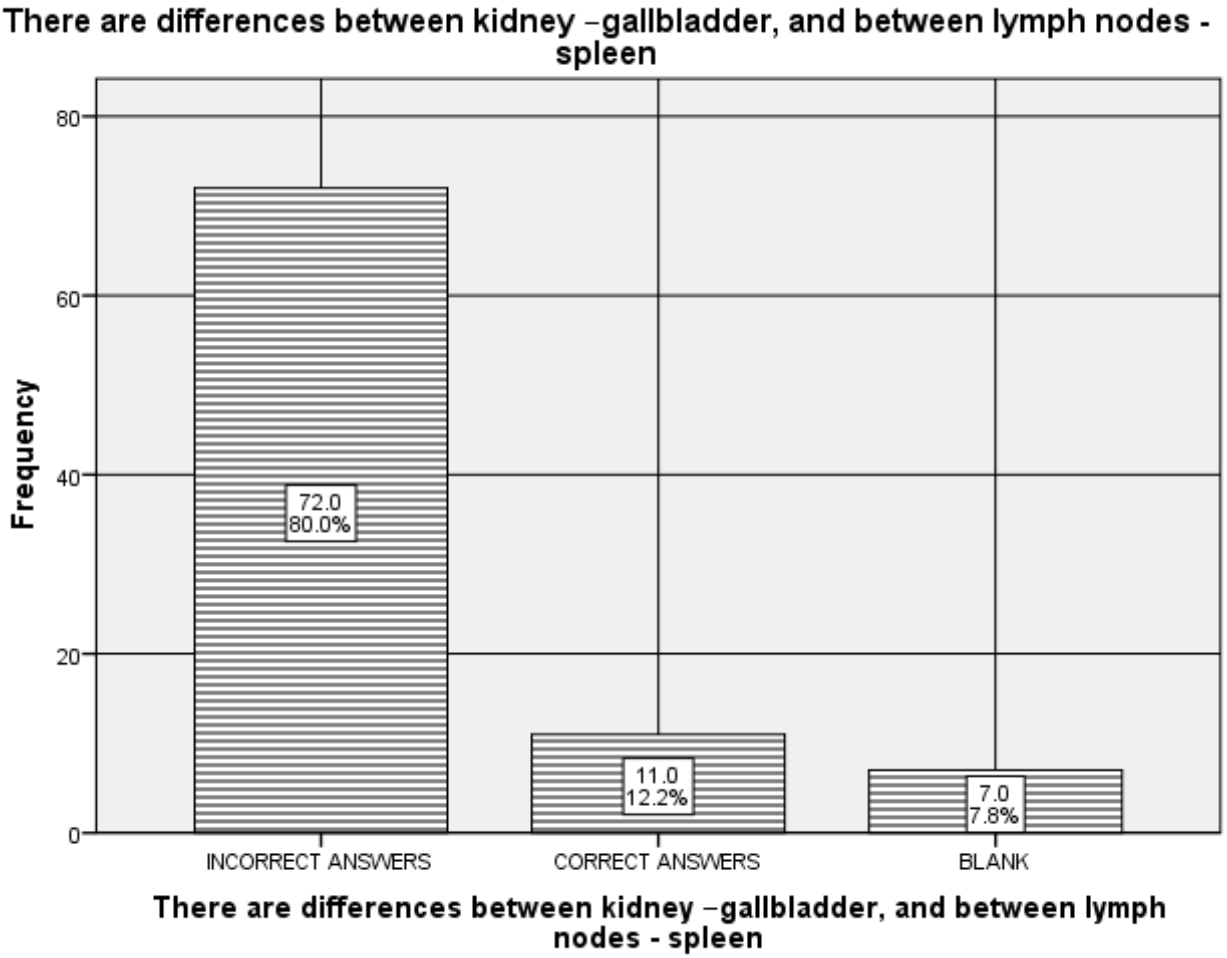
1- هناك ثلاثة اختلافات بين الغدد و الطحال

2- توجد ثلاثة اختلافات بين الكلية و المرارة

3- هناك اختلافات بين مرارة الكلية والغدد الليمفاوية أو الطحال

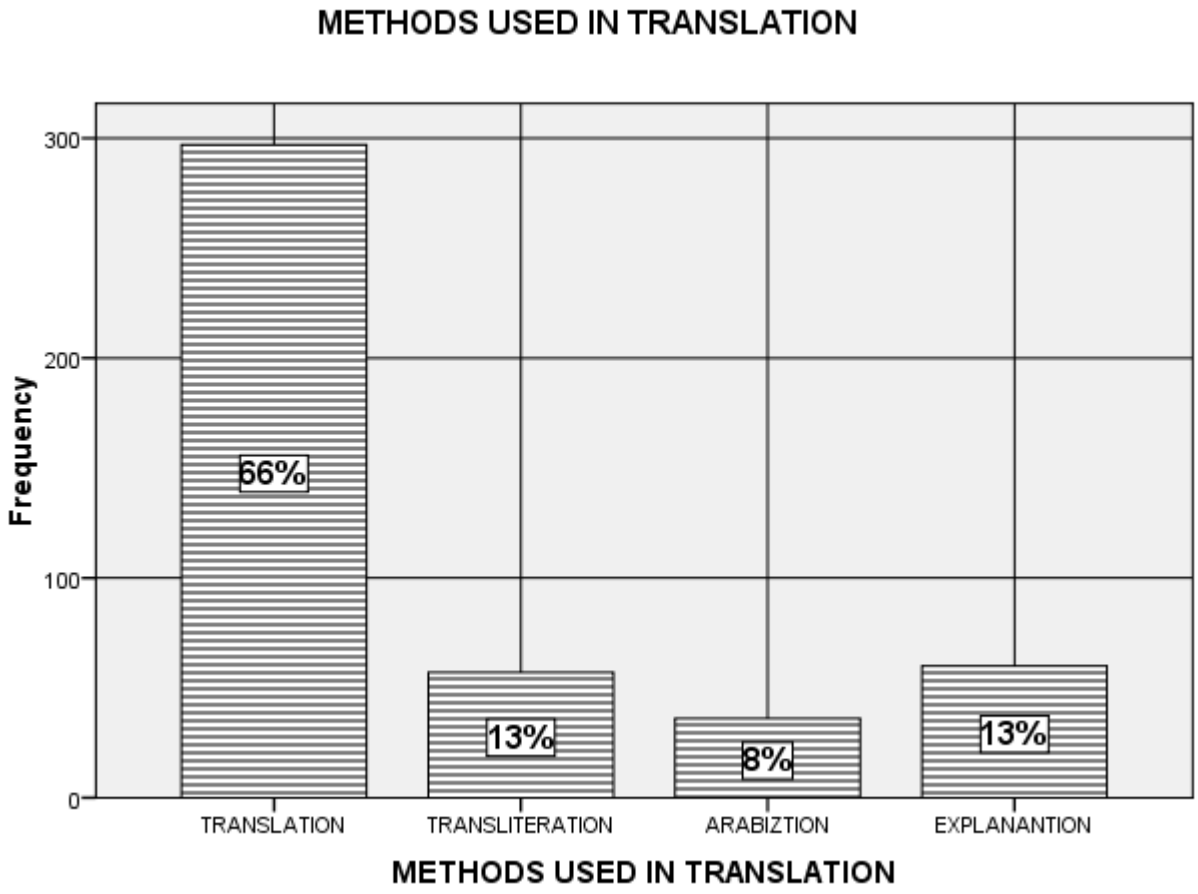
Unexpectedly, 7 respondents with a percentage index of 7.8 did not translate this sentence. This poor performance in translating contextualized medical terms has clearly been handled in the figure 4.16.

Figure 4.18: There are differences between kidney –gallbladder, and between lymph nodes - spleen



4.3 Methods of translation:

Figure 4.19: Methods of translation adopted by the respondents



The figure above demonstrates the methods of translation adopted by the students. It is obvious that the commonest method utilized by them was translation. It scores the highest percentage (66%). Transliteration is ranked in the second place. It gains a percentage index of 13, and then followed by explanation and Arabization.

Here are some examples demonstrating the students' adoption to transliteration method:

1. Astigmatism أستيجامتيزم
2. Cataract الكتراكت
3. Rheumatism روماتيزم
4. Osteoporosis أوستيبوروسيس
5. Arthritis أرثرتيس

Additionally, here are some examples of utilizing the method of explanation in translating medical terms:

1. The term ***pleural membrane*** is translated as الغشاء الذي يحيط بالرئة instead of الغشاء الرئوي . Here the respondents failed to give the official translation of this term. A possible justification for this failure is that some medical terms do not have equivalents in Arabic.

With regard to Arabization (involving the adoption of an English word and restructuring it so as to fit in the Arabic pronunciation and grammar), very few respondents adopted this strategy such as SARS السارس)and Anthrax الأنثراكس.

4.4 Results of the Teachers' Questionnaire:

The questionnaire was formulated in accordance with the Likert 5-point Scale. So the teachers' views were identified via the weighted mean. That is, the low level (strongly disagree, disagree) mean ranges from 1 to 2.59, the moderate level mean (neutral) ranges from 2.60 to 3.39, and the high level (strongly agree, agree) ranges from 3.40 to 5.

Table 4.17: Teachers' views on the causes of difficulties encountering MA students of translation

Statement		S.A.	A.	N.	D.	S. D.	M.	St. D.	R.
MA students of translation may not find the accurate equivalent of English medical terms in Arabic.	N	23	21	3	2	1	4.26	0.90	S.A.
	%	41.1 %	37.5	5.4	3.6	1.8			
Understanding the meaning and the structure of the elements of medical terms may help MA students of translation to solve the problems of translating medical terms which contain different parts of a word (e.g. hypertension.)	N	30	20				4.60	0.49	S.A.
	%	53.6	35.7						
Abbreviations, acronyms, eponyms, non-equivalence, neologism, polysemy pose serious translation problems	N	20	22	5	3		4.18	0.85	A.
	%	35.7	39.3	8.9	5.4				
Most of the medical terms are derived from Latin and Greek languages; therefore, it is difficult to use literal translation	N	24	20	5	1		4.34	0.75	S.A.
	%	42.9	35.7	8.9	1.8				
Translators need to be trained to work in the medical field before starting their job either as translation or interpreters.	N	17	20	5	5	3	3.86	1.18	A.
	%	30.4	35.7	8.9	8.9	5.4			
Understanding the meaning of affixes used with medical terms will help MA students of translation to tackle the problems of translating medical terms.	N	25	22	2	1		4.42	0.67	S.A.
	%	44.6	39.3	3.6	1.8				

The lack of updated English-Arabic medical dictionaries can negatively influences the work of Arabic translators in the medical field as most of them consult such dictionaries to look for the meanings of medical terms.	N	26	21	2	1		4.44	0.67	**S.A.**
	%	46.4	37.5	3.6	1.8				
Translating medical terms from English into Arabic is the main problem in translating medical text	N	19	19	9	2	1	4.06	0.96	**A.**
	%	33.9	33.9	16.1	3.6	1.8			
Unsuitable techniques are adopted in translating medical terms	N	12	14	20	3	1	3.66	0.98	**A.**
	%	21.4	25	35.7	5.4	1.8			
Mastery of two languages (English- Arabic) does not automatically make a person a good medical translator.	N	17	14	11	5	3	3.74	1.21	**A.**
	%	30.4	25	19.6	8.9	5.4			
Medical translation does not focus on a single genre or a homogenous discourse	N	16	15	8	9	2	3.68	1.22	**A.**
	%	28.6	26.8	14.3	16.1	3.6			
Teachers of translation who sometimes translating medical texts help foreign doctors to identify the local medical terminologies, by adding knowledge from the concerned country.	N	12	31	5	1	1	4.04	0.78	**A.**
	%	31.4	55.4	8.9	1.8	1.8			
The absence of curricula, teaching	N	17	21	10	1	1	4.04	0.90	**A.**

programs, different methods and techniques pose difficulties in teaching medical translation.	%	30.4	37.5	17.9	1.8	1.8			
Medical translation may be difficult for English Translation teachers.	N	13	22	5	9	1	3.74	1.10	**A.**
	%	23.2	39.3	8.9	1.8	1.8			
It is possible to prepare a standard Medical Arabic language for the entire Arab world and its speakers for the world due to varied Arabic dialects.	N	14	20	11	3	2	3.82	1.04	**A.**
	%	25	35.7	19.6	5.4	3.6			

Scale:

S.A. =Strongly Agree

A= Agree

N= Neutral

D. = Disagree

S.D. = Strongly Disagree

M. =Mean

St. D. = Standard Deviation

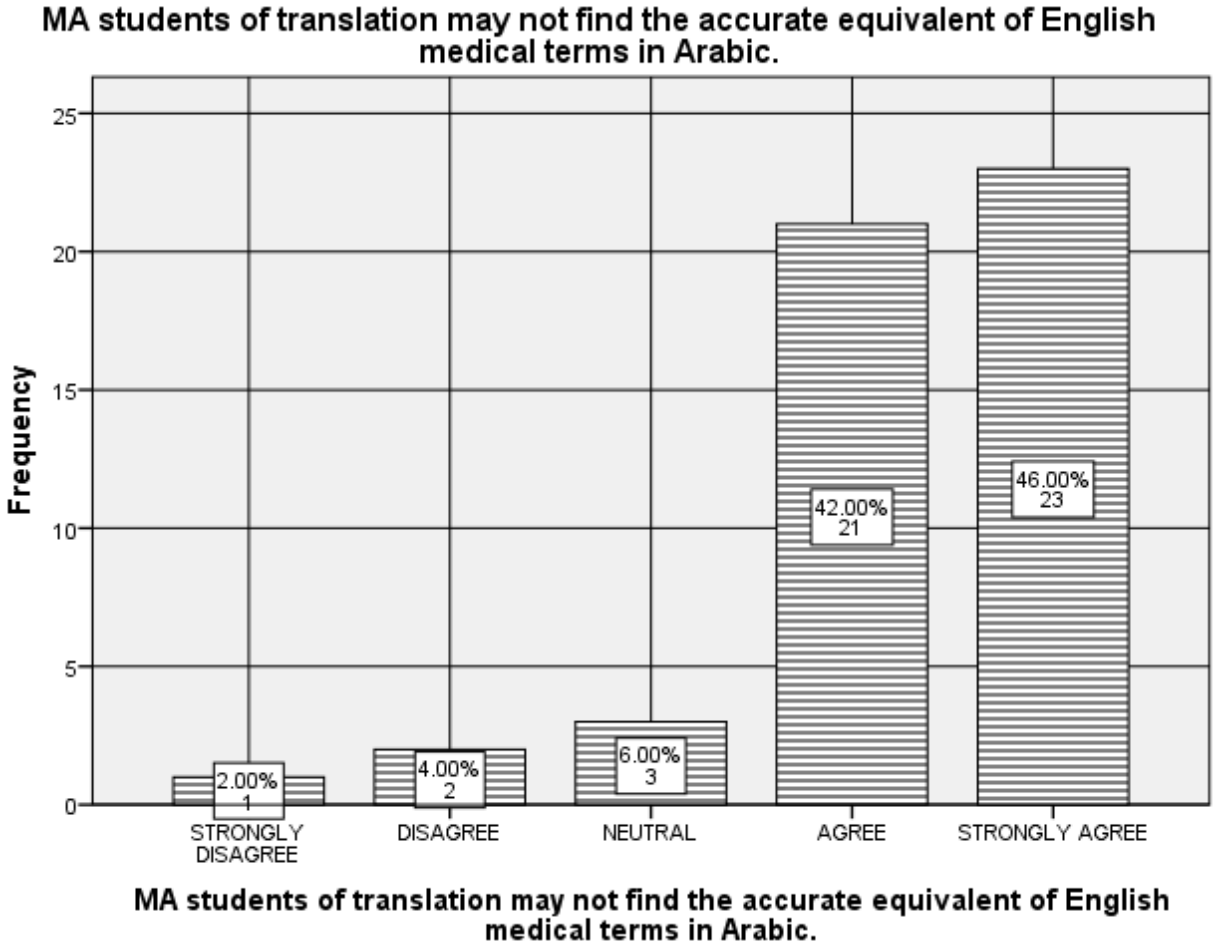
R= rank

The table above demonstrates the EFL teachers' views on the main causes of difficulties encountering EFL students in translating medical terms. It is clear that 30 of the teachers with a mean index of 53.6 attributed these difficulties to the lack of ***understanding the meaning and the structure of the elements of medical terms***. Others attributed it to the lack of updated

English-Arabic medical dictionaries. This perspective was supported by the strong agreement of 26 of them. Furthermore, 55 teachers with a mean index of 4.42 strongly agreed that affixation is the main cause behind the difficulties facing students in translating medical terms. While 24 respondents with a mean index of 4.34 attributed these difficulties to the fact that ***medical terms stem from Greek or Latin words***, others with a mean index of 4.18 agreed that this difficulty is due to the ***lack of awareness of abbreviations, acronyms, eponyms, non-equivalence, neologism, and polysemy***. In addition, translating medical terms into Arabic, suitable curricula and teaching methods, and translating medical terms from English into Arabic are among the difficulties encountering EFL students in rendering medical terms. They approximately obtain the same mean indexes (4.06, 4.04, 4.04). On the other hand, 17 respondents with a mean index of 3.86 agreed that these difficulties are due to lack of training, and 12 with a mean index of 21.4 attributed these difficulties to the techniques adopted in translating medical terms. While 17 respondents with a mean index of 30.4 attributed the difficulty to the non- mastery of two languages (English-Arabic), others with a mean index of 3.74 attributed this difficulty to the fact that medical translation is always challenging for translators. It is worth notifying that 14 respondents with a mean index of 3.82 agreed that it is necessary to have standardized Arabic medical terms.

Correspondingly, to have a deep insight into the respondents' views on the difficulties facing MA translation students in rendering medical terms, the following figures have been produced:

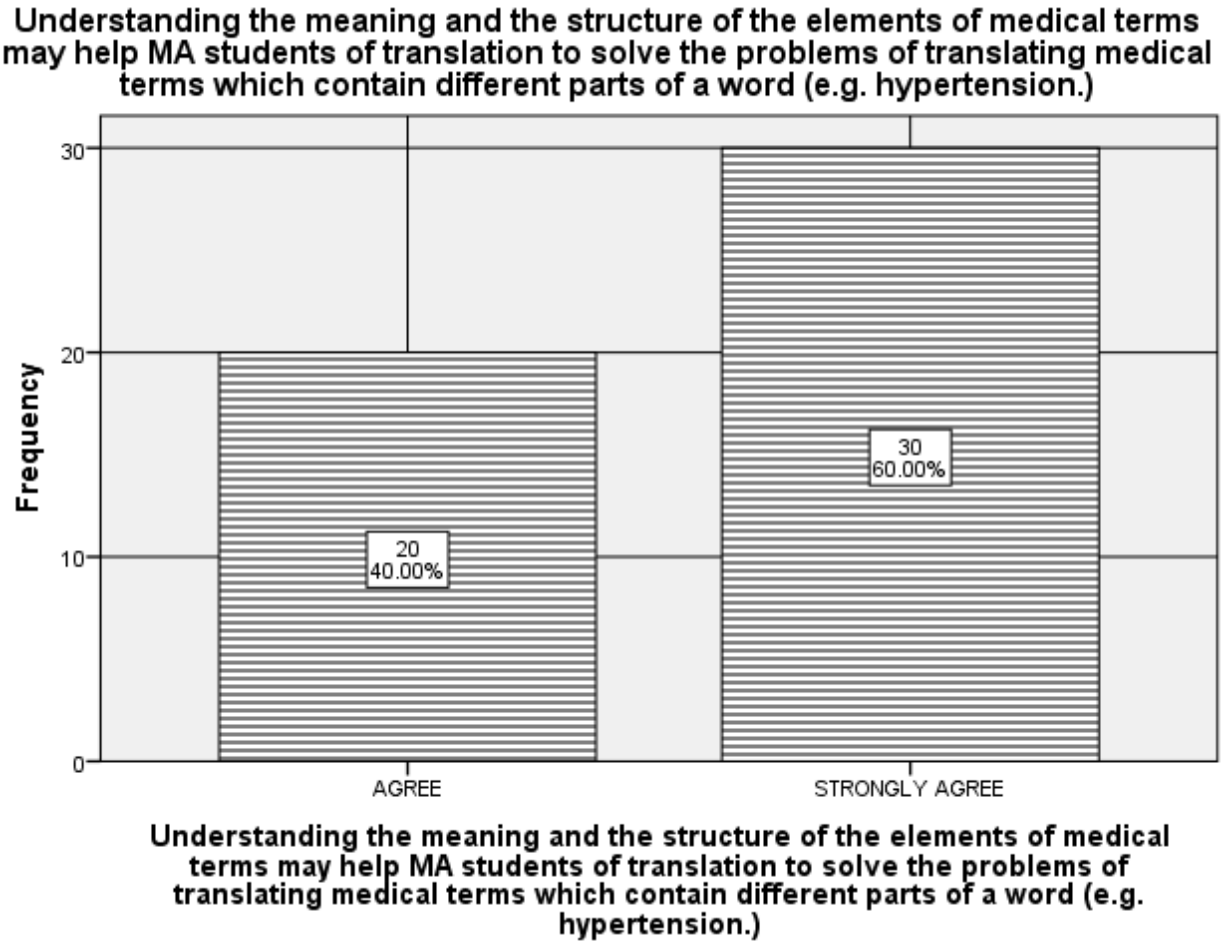
Figure 4.20: MA students of translation may not find the accurate equivalent of English medical terms in Arabic.



The figure above demonstrates the teachers' views on the reasons behind the difficulties encountering the MA students in translating medical terms. Obviously, 23 teachers with a percentage index of 46 strongly agreed that MA students may not find the accurate equivalent of English medical terms in Arabic. This strong agreement was further supported by the agreement of 21 of the teachers. However, despite the agreement on this statement, it is clear to find that one teacher with a percentage of 2, and two teachers with a

percentage of 4, rejected this notion. What is remarkable was that three teachers remained neutral.

Figure 4.21: Understanding the meaning and the structure of the elements of medical terms may help MA students of translation to solve the problems of translating medical terms which contain different parts of a word (e.g. hypertension.)



As indicated in the figure above that understanding the meaning and the structure of medical terms matters a lot in translating medical terms. It was unanimously agreed upon by all of the respondents. That is, 30 respondents

with a percentage of 60 strongly agreed on it, and another more 20 with a percentage of 40 supported this agreement.

Figure 4.22: Abbreviations, acronyms, eponyms, non-equivalence, neologism, polysemy pose serious translation problems

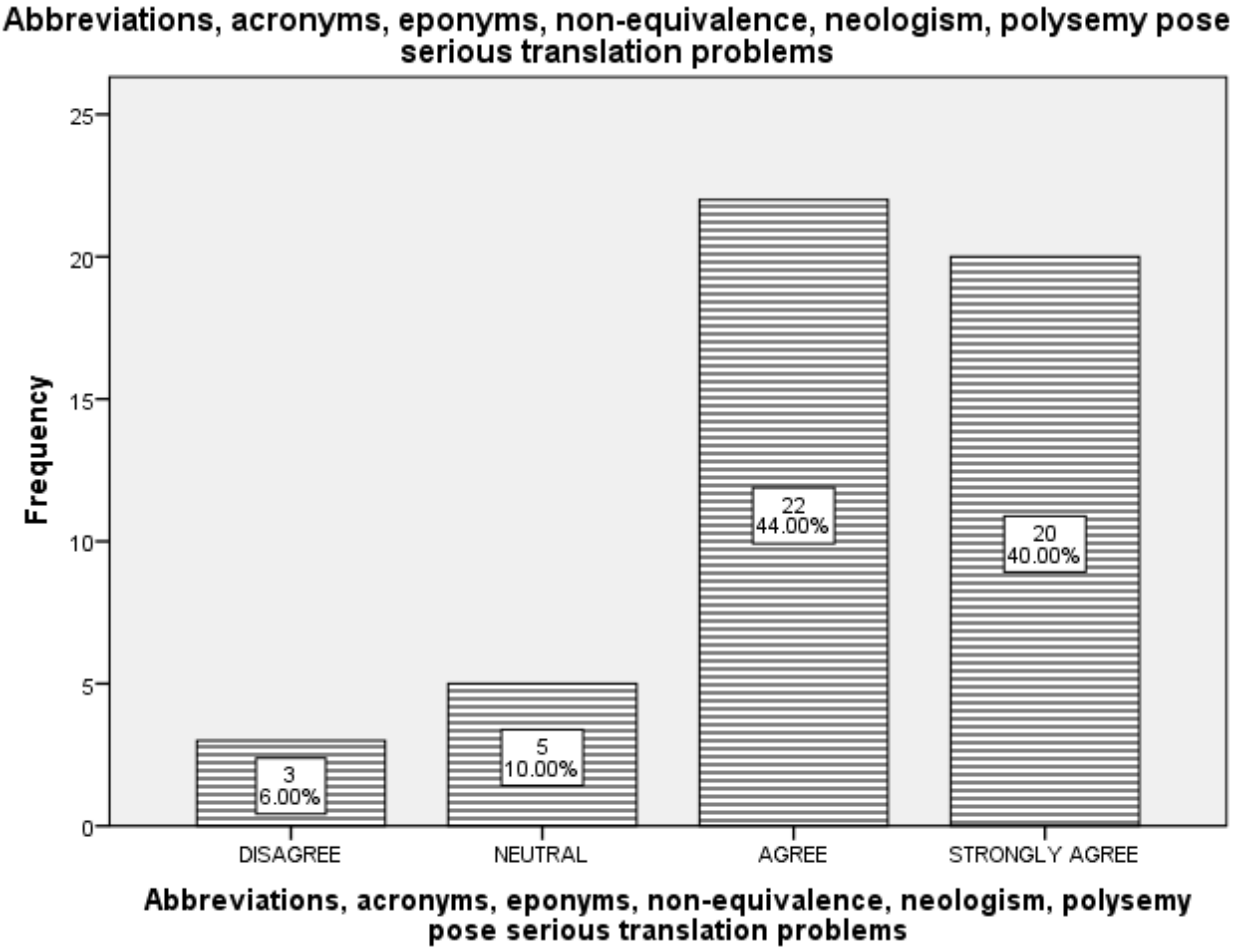
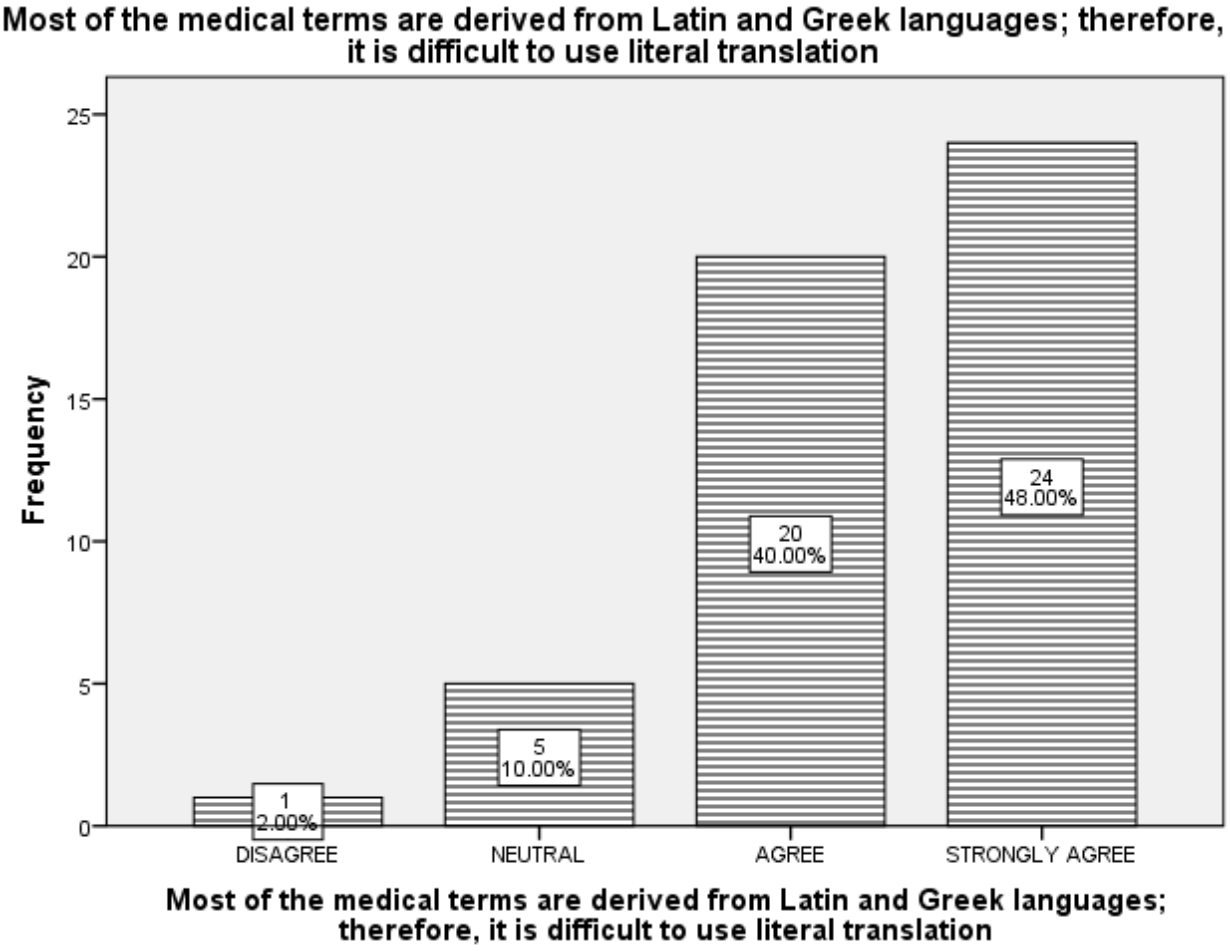


Figure 4.22 demonstrates the respondents' opinions on the negative role played by abbreviation, acronyms, no-equivalence, neologism and polysemy in hindering medial translation. The agreement on this statement scores the highest percentage (44) with a frequency of 22. Such an agreement was strongly backed up with 20 respondents gaining a percentage index of 40. Despite this agreement, it is clear to find that 5 respondents with a

percentage of 10 neither agreed nor disagreed, and 3 respondents with percentage of 6 disagreed on this statement.

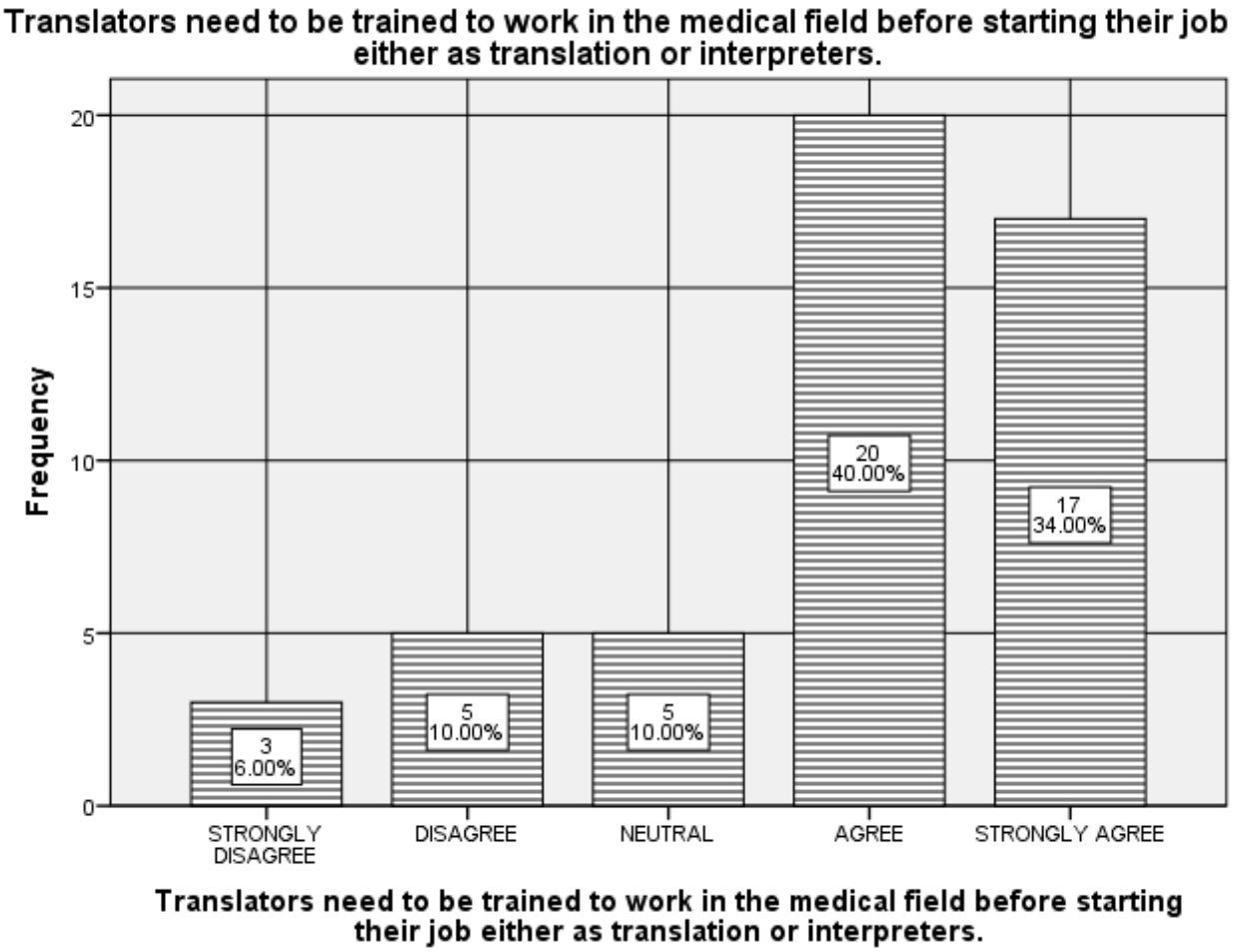
Figure 4.23: Most of the medical terms are derived from Latin and Greek languages; therefore, it is difficult to use literal translation



The figure above demonstrates the respondents' views on the difficulties facing MA students when translating medical terms that are Greek and Latin- originated. 24 respondents with a percentage of 48 strongly agreed on this statement. This strong agreement was supported by the agreement of 20 respondents with a percentage of 40. In contrast, one respondent with a percentage of 2 disagreed on this statement. Between the agreement and

disagreement of the respondents, it is clear that 5 of them with a percentage of 10 preferred the choice of neutrality.

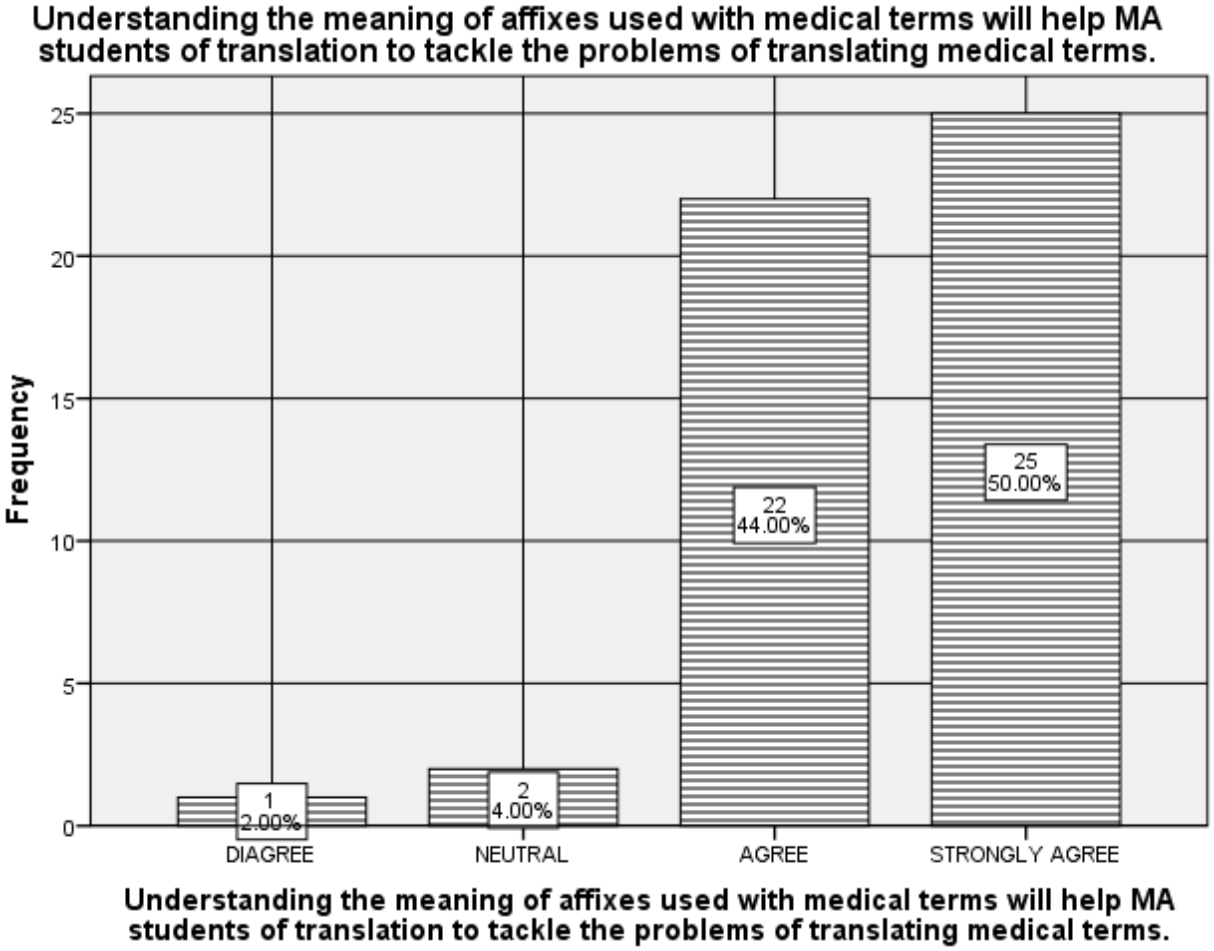
Figure 4.24: Translators need to be trained to work in the medical field before starting their job either as translation or interpreters.



The respondents' opinions on the necessity of receiving training on how to translate and on how to interpret, is demonstrated in this figure. Clearly, this statement gained the agreement of 20 respondents with a percentage of 40. Additionally, this agreement was strongly supported by the agreement of another 17 respondents with a percentage of 34. In contrary to this

agreement, there were 5 respondents with a percentage of 10 disagreed on this statement and their disagreement was strongly backed up by 3.

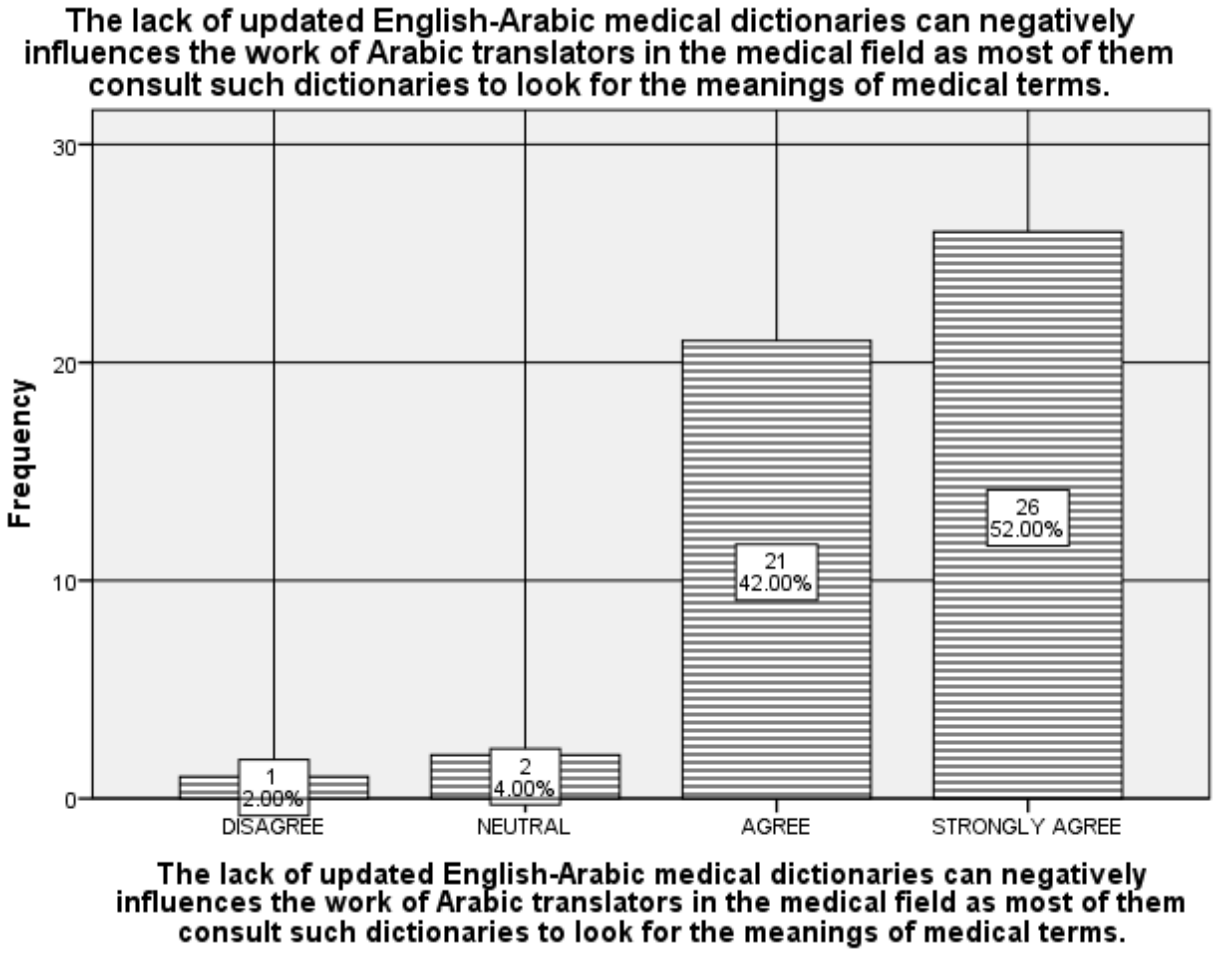
Figure 4.25: Understanding the meaning of affixes used with medical terms will help MA students of translation to tackle the problems of translating medical terms.



The statement (understanding the meaning of suffixes and prefixes used with medical terms will help MA students of translation to tackle the problems of translating medical terms) was strongly agreed on by 25 respondents with a percentage of 50. This agreement was supported by the agreement of 22. In

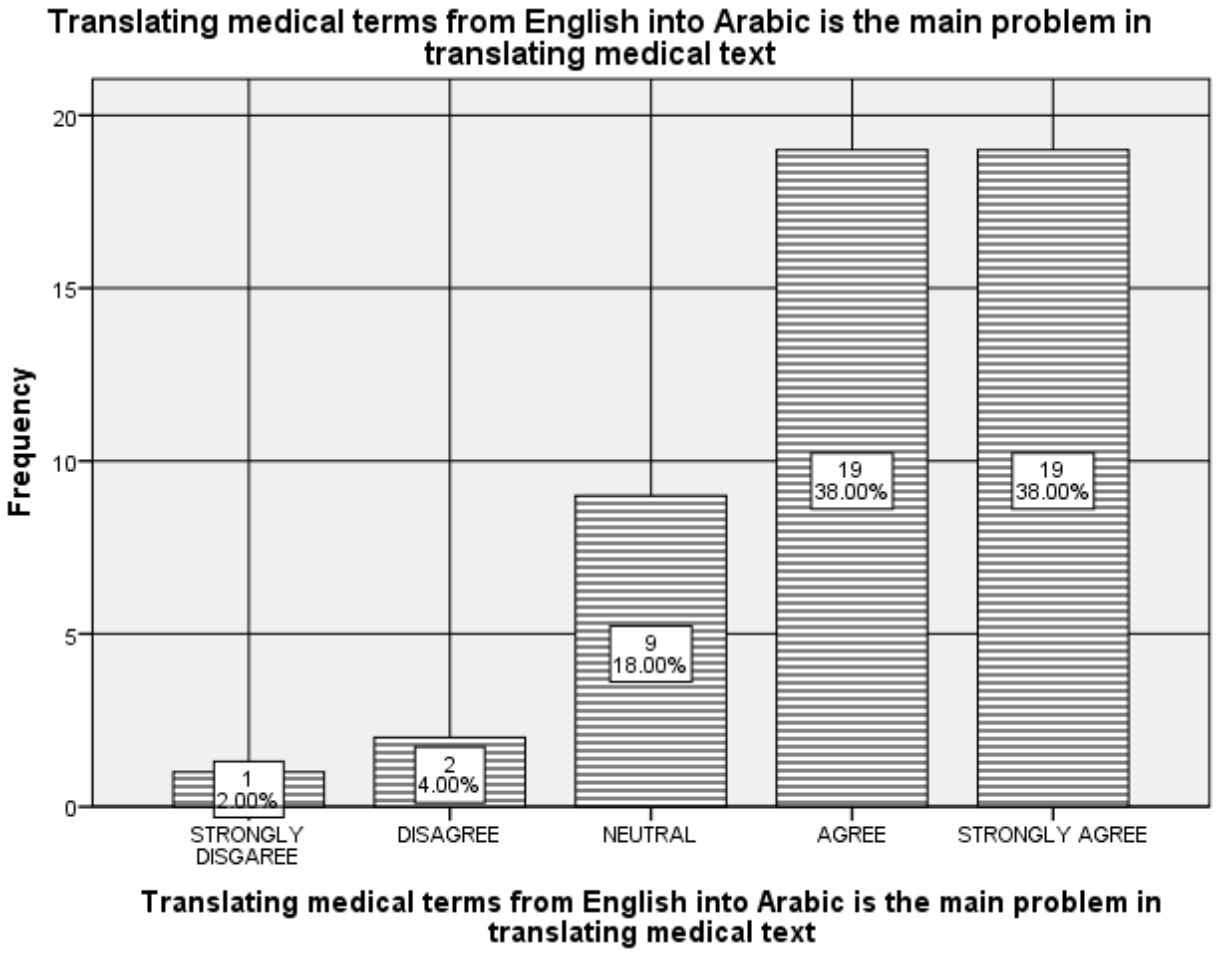
spite of this agreement, it is clear that one respondent with a percentage of 2 disagreed on it, and 2respondents with a percentage of 4 remained neutrals.

Figure 4.26: The lack of updated English-Arabic medical dictionaries can negatively influence the work of Arabic translators in the medical field as most of them consult such dictionaries to look for the meanings of medical terms.



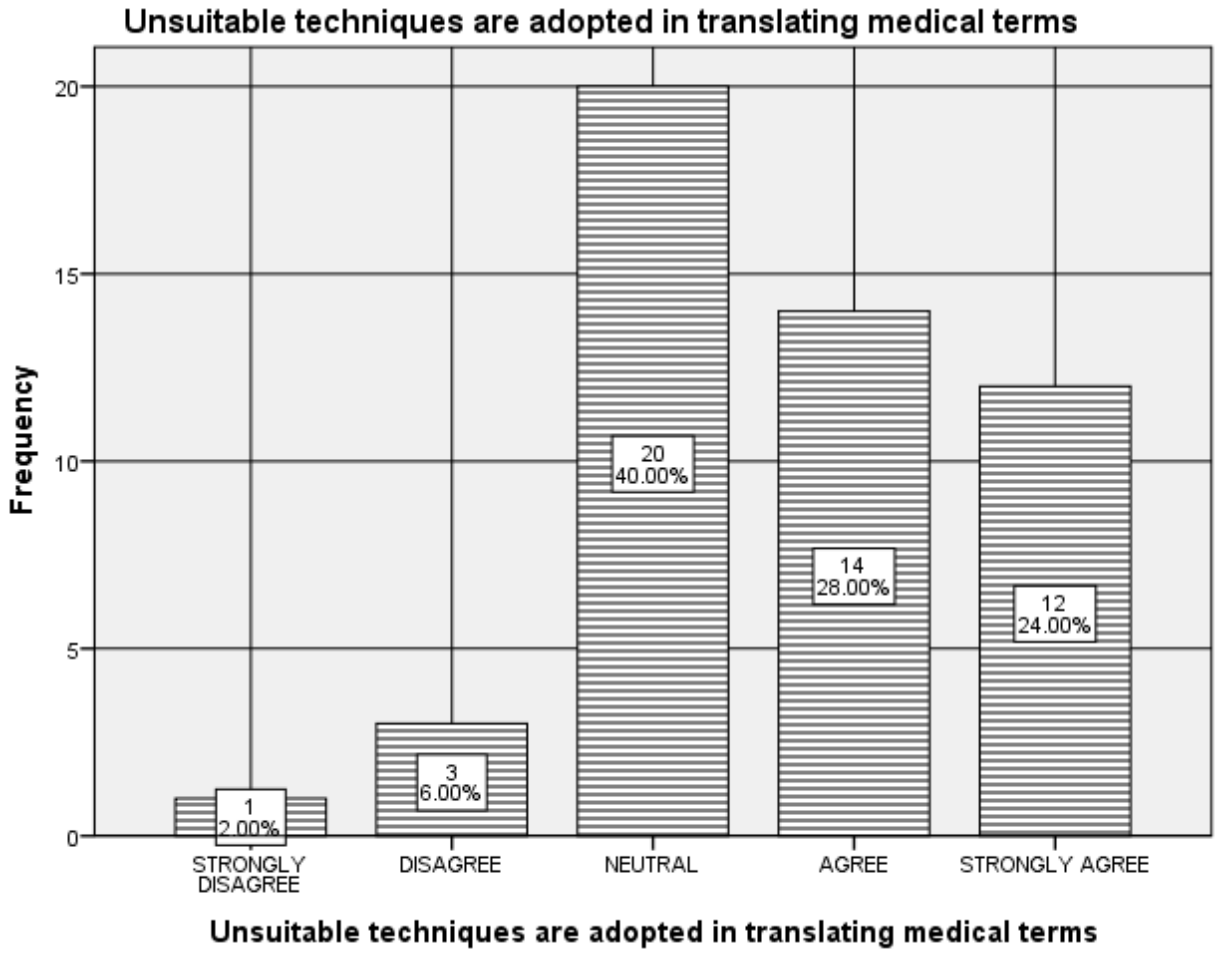
Lack of updated English-Arabic dictionaries and their negative influence on translators was strongly agreed by 26 respondents obtaining a percentage of 52. This strong agreement was supported by 21 of them. Adversely, two respondents remained neutral, and one disagreed on it.

Figure 4.27: Translating medical terms from English into Arabic is the main problem in translating medical text



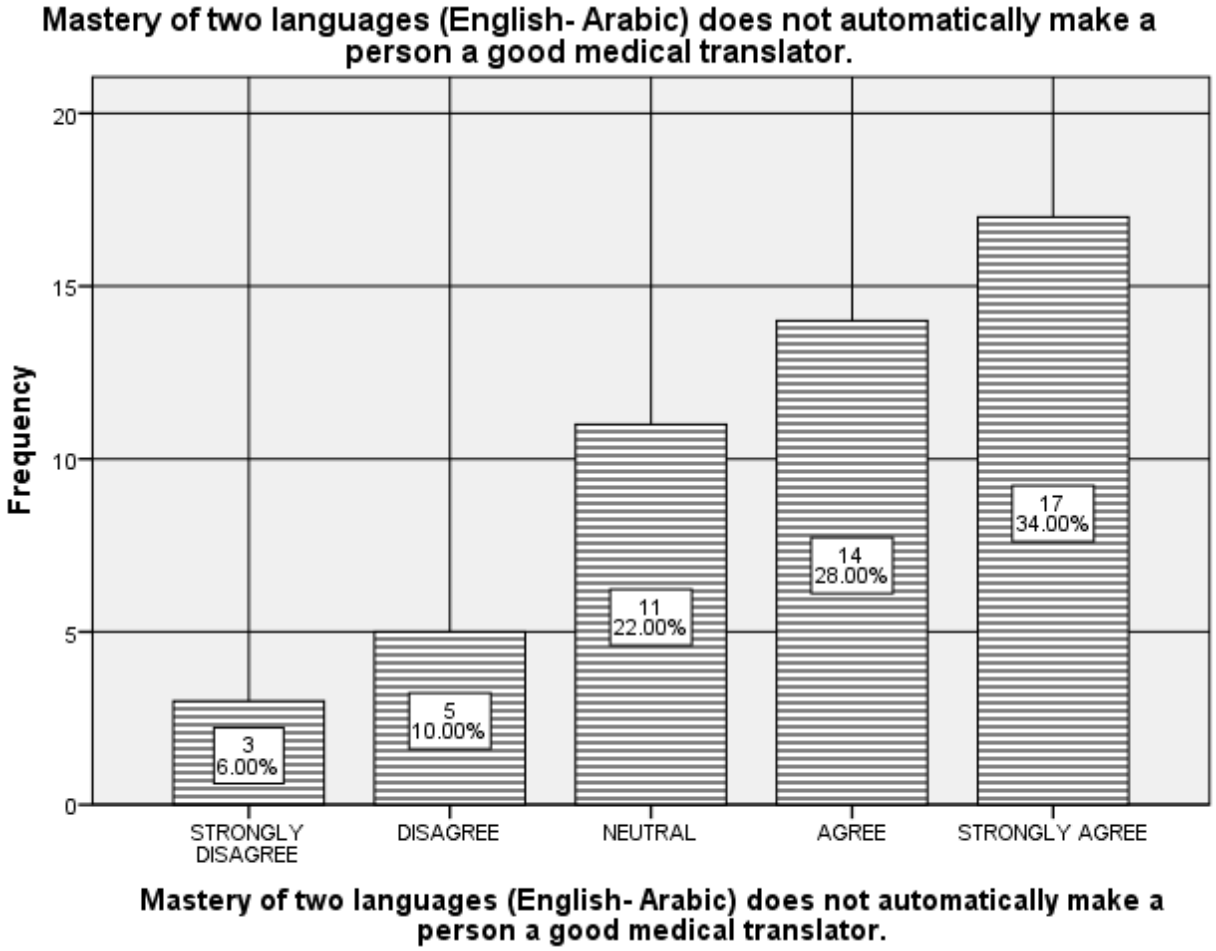
The notion that translating medical terms into Arabic seems to be problematic is projected in the above figure. It is clear that the level of agreement (strongly agree, agree) obtains the same frequencies and percentages. That is, the strong agreement and the agreement on this statement have caught the views of 19 respondents with a percentage of 38. On the other hand, the level of disagreement was low. That is, one respondents with a percentage of 2 strongly disagreed on it supporting by the disagreement of 2.

Figure 4.28: Unsuitable techniques are adopted in translating medical terms



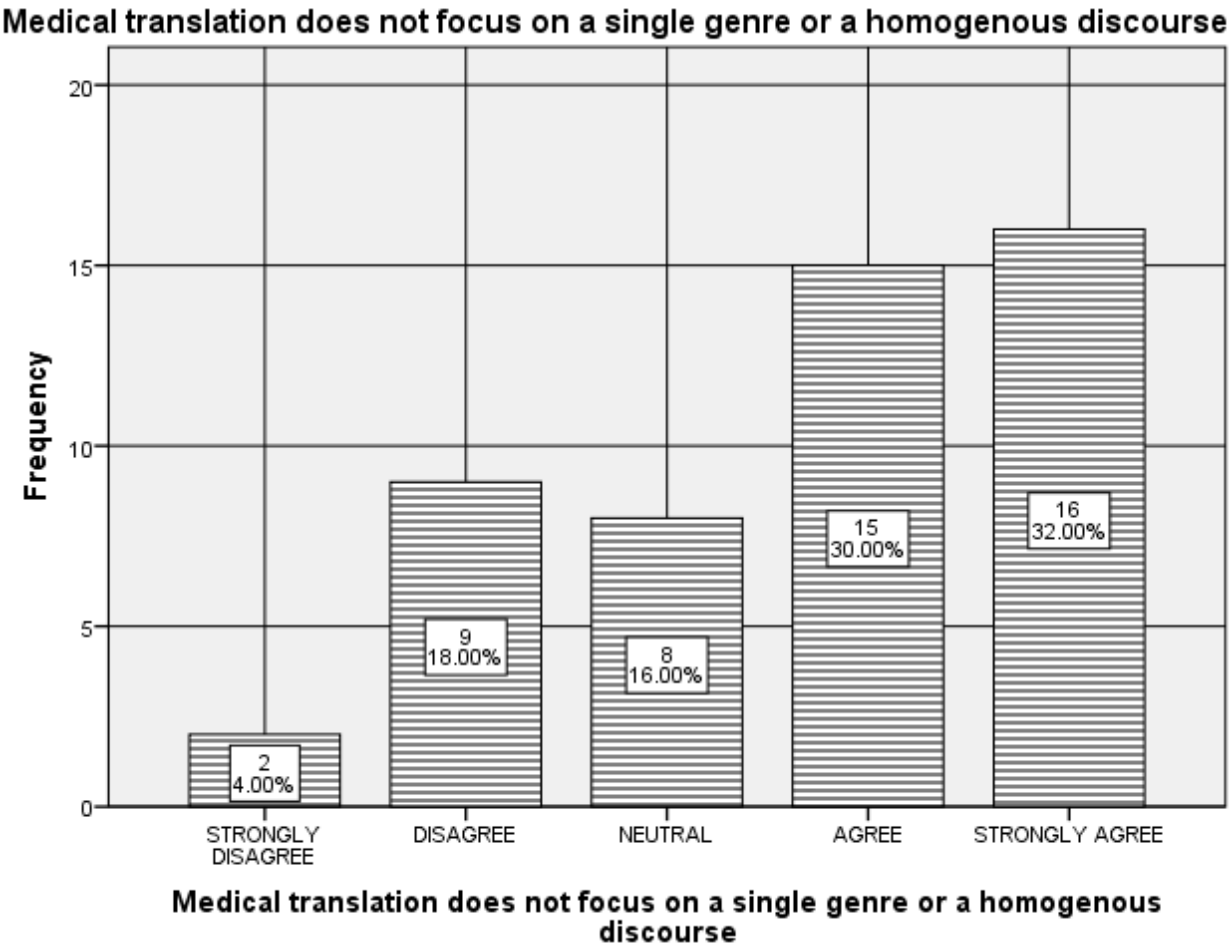
Unsuitability of the techniques used in translating medical terms is demonstrated in the figure above. It is remarkable that neutrality in views obtains the highest frequency of 20 and a percentage of 40. However, despite this neutrality, some respondents agreed on it while other did not. For instance, 14 respondents with a percentage of 28 agreed on it supported by the strong agreement of 12. The rejection of this statement was indicated in the strong agreement of 3 respondents and strong disagreement of one.

Figure 4.29: Mastery of two languages (English- Arabic) does not automatically make a person a good medical translator.



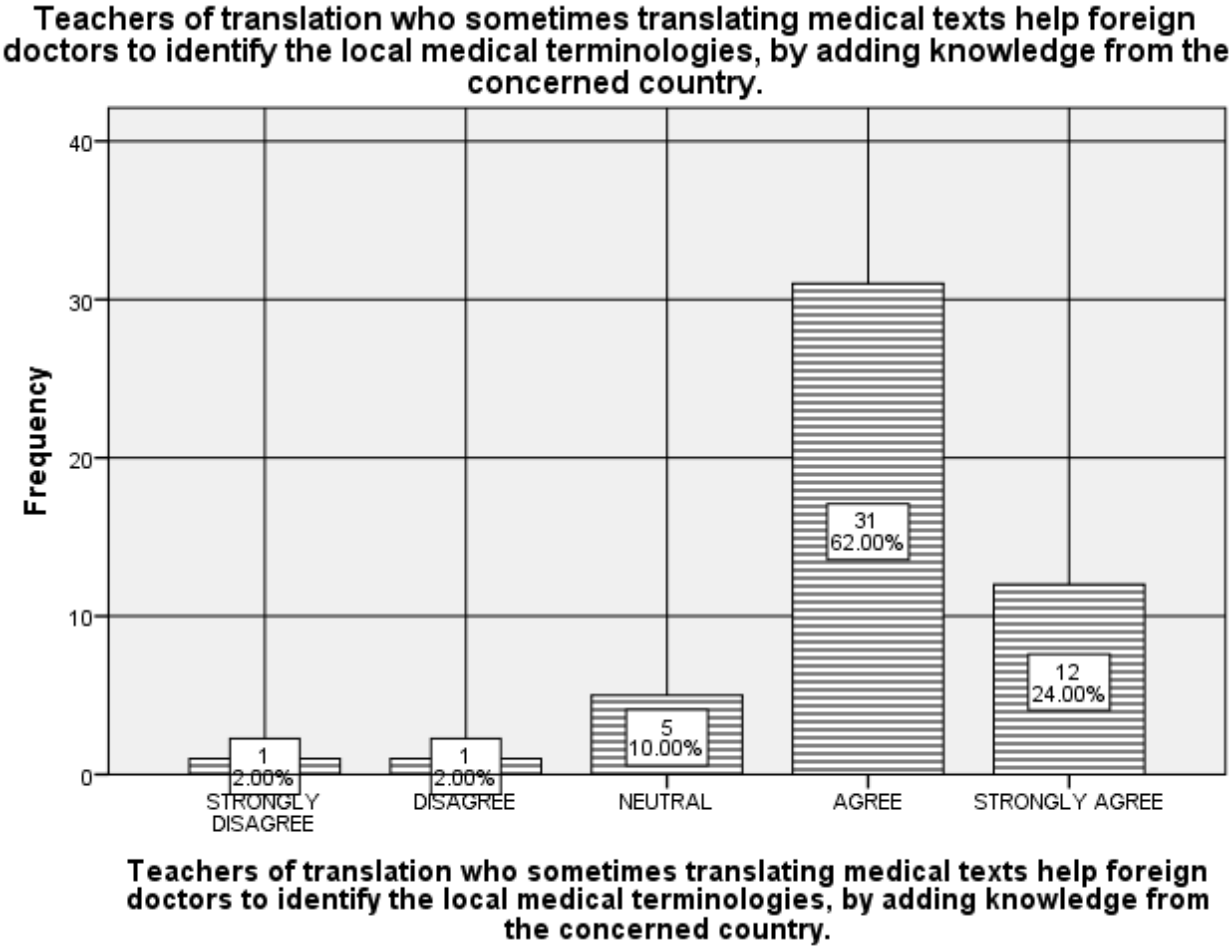
Mastery of English and Arabic language, as it assists in making good medical translator, was strongly agreed on by 17 respondents and another 14 of them. As illustrated in the figure above that 11 respondents remained neutral while 5 of them disagreed on this statement. This disagreement was further strongly disagreed on by three respondents.

Figure 4.30: Medical translation does not focus on a single genre or a homogenous discourse



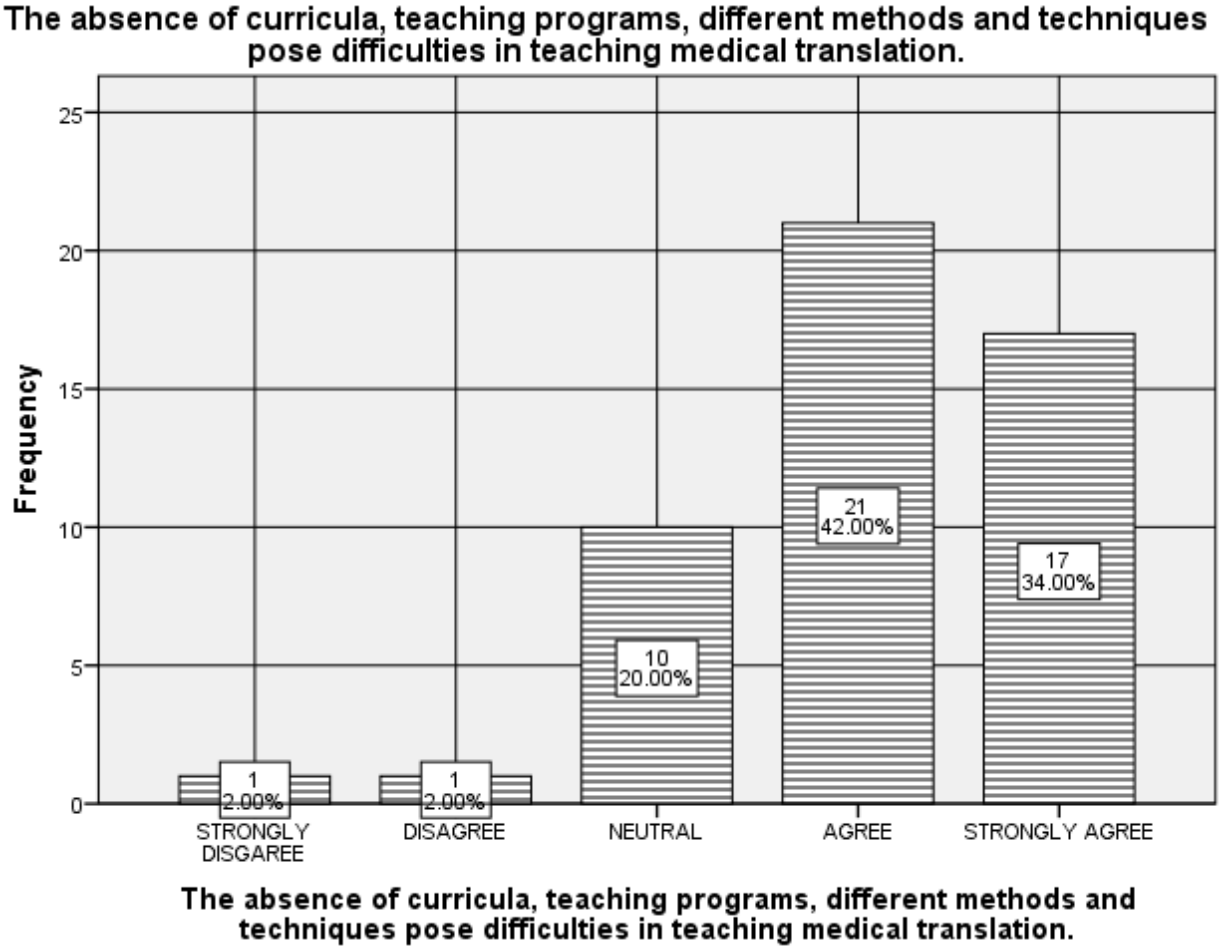
As illustrated in the figure above, the vast majority of the teachers agreed on the statement (medical translation does not focus on a single genre or homogenous discourse). That is, 16 teachers with a percentage of 32 strongly agreed on it, and this agreement was supported by another 25 teachers. In contrast, 9 teachers with a percentage of 18 disagreed on it. This disagreement was supported by the strong disagreement of 2. On the other hand, 8 teachers with a percentage of 16 remained neutrals.

Figure 4.31: Teachers of translation who sometimes translating medical texts help foreign doctors to identify the local medical terminologies, by adding knowledge from the concerned country.



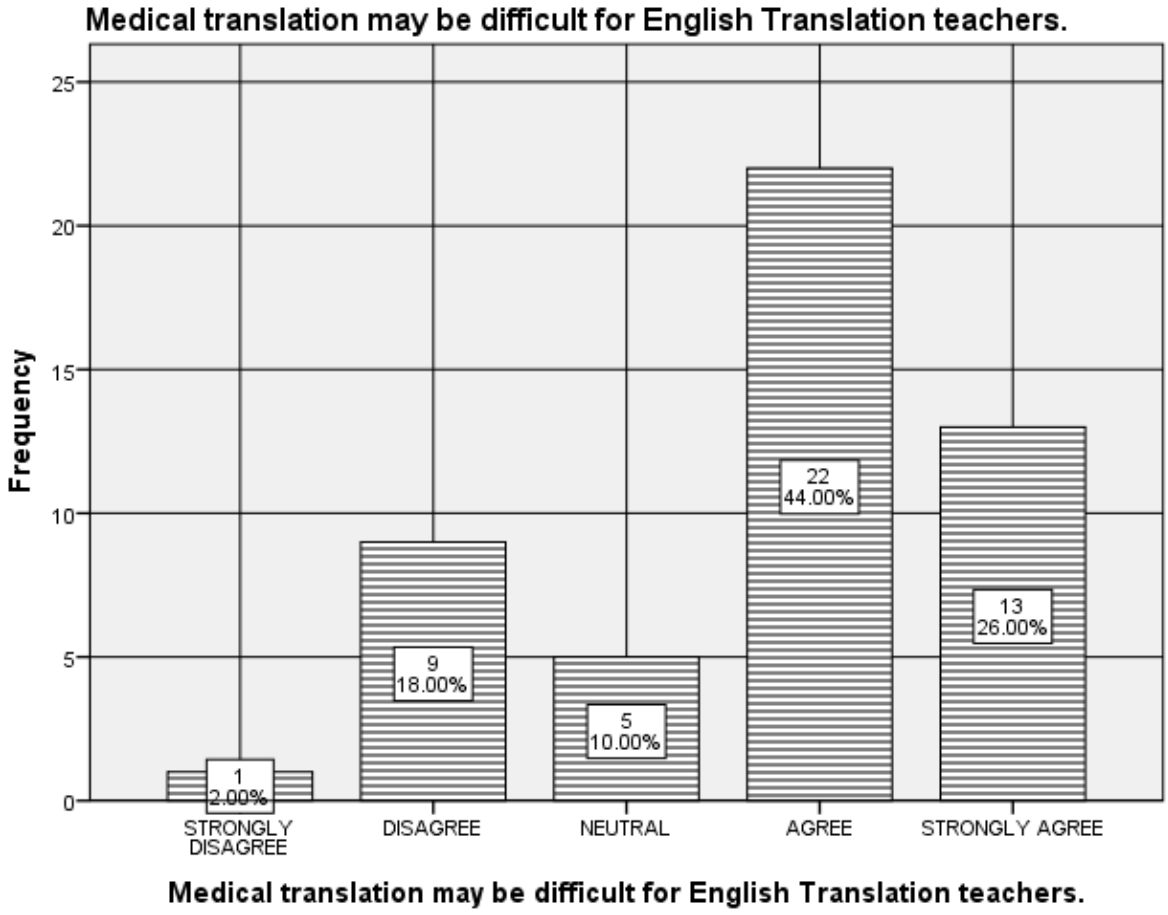
The statement ***(teachers of translation who sometimes translate medical texts help foreign doctors to identify the local medical terminologies, by adding knowledge from the concerned country)*** was agreed on by 31 teachers, and further strongly agreed on by 12 of them. In contrast to this agreement, one teacher disagreed on it and another one strongly supported this disagreement. On the other hand, 5 teachers with a percentage of 10 remained neutrals to this statement.

Figure 4.32: The absence of curricula, teaching programs, different methods and techniques pose difficulties in teaching medical translation.



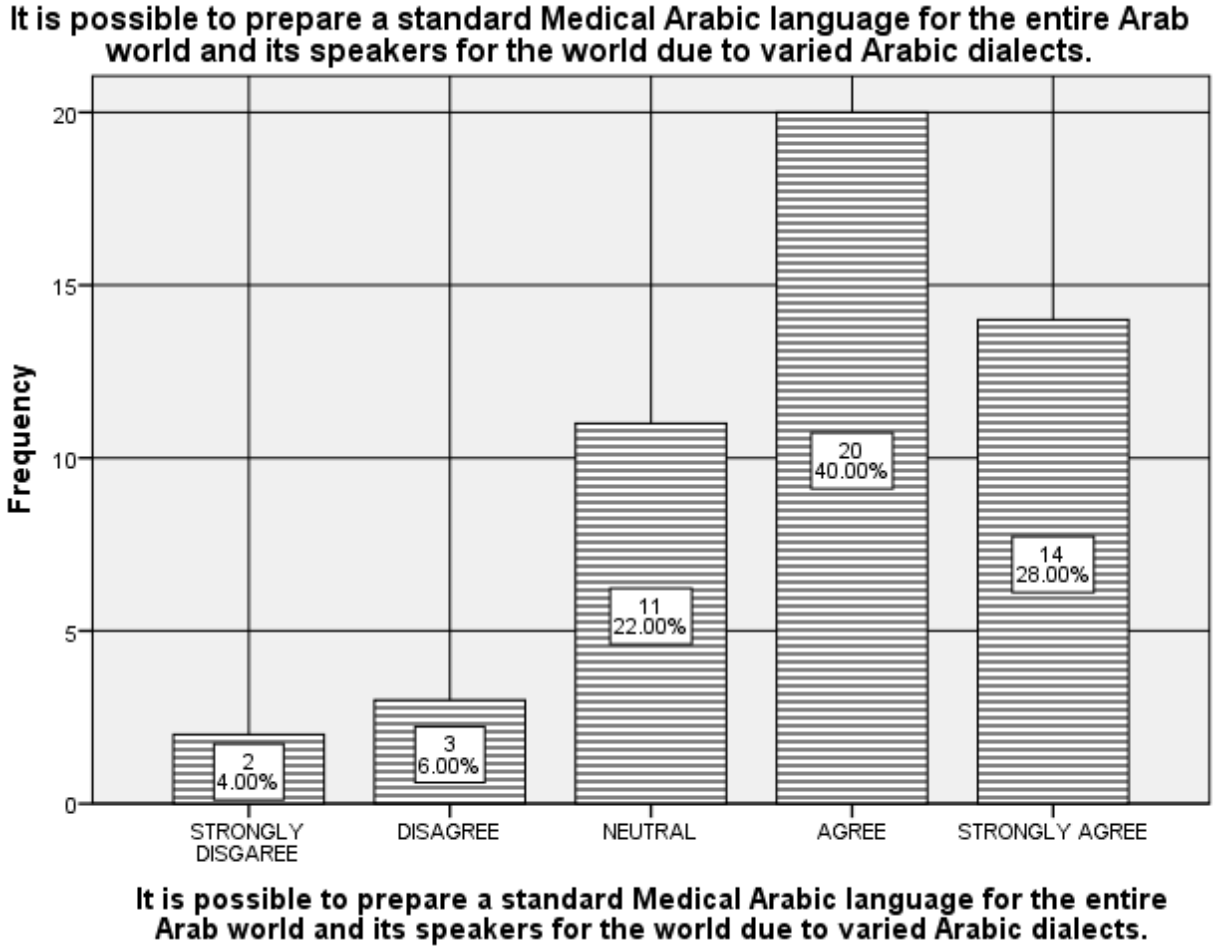
The figure above illustrates the respondents' views on the statement (***the absence of curricula, teaching programs, and different methods and techniques pose difficulties in teaching medical translation***). It is clear that 21 respondents with a percentage of 42 agreed on this statement. This agreement was strongly supported by the agreement of 17. In contrast, while two respondents stated their disagreement on this statement, 10 remained neutrals.

Figure 4.33: Medical translation may be difficult for English Translation teachers.



The table above illustrates the teachers' views on idea that medical translation might be difficult. The agreement on this statement obtains the highest frequency (22) with the highest percentage (44). This agreement was strongly backed up with the agreement of 13 having a percentage of 26. In contrary to this agreement, 9 respondents with a percentage index of 18 disagreed on this statement, and this rejection was further strongly supported by the disagreement of 1. The neutral views are also included. Such an inclusion is projected in the frequency of 5 respondents and a percentage index of 10.

Figure 4.34: It is possible to prepare a standard Medical Arabic language for the entire Arab world and its speakers for the world due to varied Arabic dialects.



The possibility to prepare a standard Medial Arabic language, for the entire Arab World and its speakers for the world due to varied Arabic dialects, is presented in the above figure. 20 respondents with a percentage of 40 agreed on it. Again, another 14 respondents with a percentage of 28 strongly agreed on it besides the agreement of 3 of them. And another 2 with a percentage of 4 strongly rejected it. Between the agreement and disagreement of the respondents, 11 with a percentage of 22 remained neutral.

4.5 Discussion and Verification of the Study Hypotheses:

The current study is conducted to examine the difficulties encountering Sudanese MA students of translation in translating medical terms. It also seeks to confirm the following hypotheses:

1- MA students of translation are expected to encounter difficulties in rendering medical terms.
2- Teachers of translation view that the difficulties facing MA translation students may be attributed to the *lack of updated English –Arabic dictionaries*, failure to find the *accurate equivalent of English medical terms in Arabic*, *understanding affixes and understanding the origin of medical terms*.
3- Translation, explanation, and transliteration are expected to be the commonest translation strategies used by Sudanese MA students of translation in rendering medical terms.

With regard to the first hypothesis claiming that ***MA students of translation are expected to encounter difficulties in rendering medical terms***, the results obtained from the test analysis indicted that most of the students (79.56%) failed to match the medical terms with their Arabic equivalents. They similarly failed to choose the correct answer and failed to provide acceptable translation for the medical terms included in the test. A possible justification for this failure might be referred to their unawareness of medical terms. That is, they have insufficient vocabulary inventory related to the medical field. Another possible justification could be that the MA translation students find difficulties in working out the semantic relationship between the components of some compound medical terms. And this is, of course, due to the complex structure of medical terms that stem from both

Greek and Latin languages. This result is congruent with the results gained by Montalt and Gonzalez (2007: 232) who argued that "*a knowledge of the Greek and Latin roots, prefixes and suffixes can provide the basic building blocks of medical terminology and can enable one to infer the meaning of the whole".* Correspondingly, the findings are also in line with the findings of Nadia Larbi (2016), Nassima Benchabane (2015).

Concerning the second hypothesis (***Teacher of translation view that the difficulties facing MA translation students may be attributed to the lack of updated English –Arabic dictionaries, failure to find the accurate equivalent of English medical terms in Arabic, understanding affixes and understanding the origin of medical terms***), the results obtained from the questionnaire analysis indicated that MA students of translation encounter difficulties when rendering medical terms because of:

- The lack of updated English-Arabic dictionaries;
- Complex structures that medical terms have a matter can give rise to various semantic, lexical and grammatical interpretations.
- MA students of translation may not find the accurate equivalent of English medical terms in Arabic;
- Abbreviations, acronyms, eponyms, non-equivalence, neologism, polysemy pose serious translation problems

Similar results were obtained by Argeg, Garsa,Mousbah (2015) and Sofia Micic (2013).

With regard to the third assumption claiming that the ***MA students commonly use the method of translation, transliteration, and explanation when rendering medical terms***, the result of the test analysis demonstrated that the vast majority of the students utilized translation (66%) followed by

explanation and transliteration (13%0). Arabization appeared to be not commonly adopted by MA students when rendering medical terms (8%). The rationale for utilizing explanation could be supported by the fact that most of the students ignore medical terms so they try to explain these terms using their own language. This method seems to be misleading. That is, the students might not succeed in giving the official translation of each term. The utilization of Arabization in rendering medical terms, on the other hand, could be explained by the absence of their equivalents in the target language (Arabic). The adoption of using transliteration is due to the widespread of transliterated technical terms in Arabic particularly in the field of medicine and engineering. For instance, it is remarkable to hear people say some technical words such as 'corona', 'filter' and 'carburetor', 'malaria', 'cholera' and 'typhoid'. It is worth mentioning that such results are congruent with the results of some scholars: Reima AL-JARF1(2018).

4.6. Summary of the Chapter:

This chapter has discussed the analysis of the two tools of study (a test and a questionnaire). It also focuses on the confirmation of the study assumption in light of the results reached. In the following chapter, a list of the major findings will be summarized along with the conclusion and recommendations.

Chapter Five

Main findings, Recommendations and Suggestions for Further Studies

Chapter Five

Main findings, Recommendations and Suggestions for Further Studies

5.1 Introduction:

This chapter provides a summary of the whole study; Conclusions for its results and findings will also be presented. Recommendations stem out from the findings will be made. This chapter also will also provide suggestions for further studies.

5.2 Main findings:

1- Some of the students use transliteration, explanation in translating medical terms.

2- Translation of medical terms proved to be problematic for inexperienced translators and postgraduate translation students. In addition, the findings indicate that inexperienced translators and postgraduate students have a clear and obvious weakness in finding accurate translations and appropriate explanations for the terms that either cannot be found in English-Arabic medical dictionaries or have no equivalents in Arabic.

3- The lack of updated English-Arabic dictionaries is a real problem.

4- MA students of translation may not find the accurate equivalent of English medical terms in Arabic.

5- Abbreviations, acronyms, eponyms, non-equivalence, neologism, polysemy pose serious translation problems.

6- Complex structures that medical terms is a matter that can be explained to various semantic, lexical and grammatical interpretations.

5.3 Recommendations:

Based on the findings the researcher recommends the following:

1- Some medical terms such as compounds, collocations and abbreviations cannot be found in either English-Arabic dictionaries or monolingual dictionaries. They also show that the participants employed different strategies in their translation of medical terms so the translators need to be improved by providing them with special training in medical translation as well as in developing the translation program in Arab countries and at Sudanese universities to include some courses in medical translation.

2- It might be a worthy suggestion for Arabic and Sudanese academies to exert some efforts to produce an English-Arabic medical dictionary or to adopt the Unified English-Arabic Medical Dictionary (which is produced by the WHO) as a credible source of reference and to avoid terminology inconsistency after having carried out a comprehensive review of its entries by medical consultants.

3- MA translation students must have a special course in medical translation which is going to enlarge their knowledge and help them in their career as translators.

4- Curriculums supposed to be oriented to meet the needs of future translators.

5- Teachers of translation should be trained on teaching medical courses.

5.4 Suggestions for Further Studies:

The following are some suggestions for further studies:

1- Translating Arabic Medical Terms into English Language by MA Students of "Translation "Problems and Solutions.

2- This study talked about neologisms and the problem of non-equivalence as one of the challenges of translation. A deeper study is needed to investigate these problems in particular.

3- Further research is needed to focus on the problem of translating medical compounds and abbreviations in particular.

5.5 Summary and Conclusion:

This study aimed to explore the problems and solutions of translating English medical terms to Arabic by MA translation students. The study is significant for quite a number of reasons that MA translation students are expected to have a high command of English language as they share academic and professional development should reflect such language mastery. Chapter One outlined the research questions and the methodology used in this study. The literature review followed in Chapter Two The study investigated the problems of translating medical terms such as the names of diseases, techniques, mechanisms, equivalences and medical genre. The study focused on the nature of potential challenges that the translation of medical terms presents for translators. The study explored theoretically the notion of medical terms

and how they work in both English and Arabic and also reviewed equivalence in medical terminology. The translator plays a vital role in this process of transferring and communicating through translating new technology, scientific discoveries and updated medical information from and into different languages around the world. Chapter Three, a full description of the methodology used in the research is given, the research steps followed in conducting the tools which were used to collect data beside the population and the procedure that was followed. A questionnaire for English translation teachers and a test for MA translation students were the tools that chosen to collect data. The analytical descriptive method was used in this study. The quantitative data were analyzed through the Statistical Packages of the Social Sciences (SPSS), descriptive statistics such as mean, standard deviation were calculated to examine the variability of the scores of the participants as seen in the results. Other statistical means like the one-way method and the ANOVA (analysis of variance) were computed to compare the significant statistical differences regarding the obtained answers. Chapter Four concentrated on the data collected and its analysis as well as the results obtained from the analysis concluding chapter Five presented the principal findings, conclusions, recommendations and suggestions for further studies of this study in relation to the research questions posed in Chapter one, namely:

1- To what extent do the MA Translation students majoring English language "Translation" encounter difficulties in translating medical terms?

2- According to the views of the teachers of translation, why do MA translation students face difficulties in translating medical terms?

3- What are translation methods used by MA translation students in translating medical terms?

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Appendices

Appendix One

A test for MA Translation Students

Thank you for agreeing to take part in this test. I will be gaining your thoughts and opinions in order to better serve in Translating Medical Texts from English into Arabic. Be assured that your answers to the following questions will be used confidentially for the study purpose only.

Hypothesis one: MA students of translation are expected to encounter difficulties in rendering medical terms.

Part A: Vocabulary Match - Number one is done for you as an example**.**

1	طب النساء	Cardiology	**4**
2	أمراض الجهاز الهضمي	Oncology	
3	طب الغدد الصماء	Gynecology	
4	طب القلب	Endocrinology	
5	علم الأورام	Bronchioles	
6	القصيبات الهوائيه	Gastroenterology	

Hypothesis one: MA students of translation are expected to encounter difficulties in rendering medical terms.

Part B: Draw a circle in the correct answer:

1- The Execratory system includes:

a) Saliva b) Vertebrae

c) Urine d) Skull

2- **GP is an abbreviation which stands for:**

a) General practitioner b) General party

c) Grand Pa c) Genuine Person

3- **Neurologist means:**

a) Heart specialist b) Brain specialist

c) Tooth specialist d) Skin specialist

4- **Gastric Ulcer is a disease which effects on:**

a) Lungs b) Liver

c) Kidney d) Stomach

5- **Code Blue is a standard definition which refers to an argent case on:**

a) Bronchi b) Intestines

c) Cardiopulmonary d) Spine

Hypothesis two: Translation, explanation, and transliteration are expected to be the commonest translation strategies used by Sudanese MA students of translation in rendering medical terms.

Part C: Translate the following sentences into Arabic:

1- Osteoporosis is a condition which bone loss exceeds bone replacement so that the bones become less dense, more porous, and more brittle

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2- Cataracts are created when the lens of the eye- or a portion of it becomes opaque and sometimes swells or shrinks and interferes with vision

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3- Arthritis and rheumatism are general names for approximately 100 diseases that produce inflammation or degeneration of connective tissue.

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4- Pleural membrane is the thin sheets of the muscle between each rib that expand when air is inhaled and contract when air is exhaled.

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5- There are differences between kidney –gallbladder, and between lymph nodes - spleen.

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Thank you for your cooperation,,,,

Appendix Two

A questionnaire for English Translation Teachers

Thank you for agreeing to take part in this questionnaire which is a part of PHD study entitled **(Investigating Difficulties Encountered by MA Translation Students in Translating Medical Terms from English into Arabic "Problems and Solutions")**. **(A Case Study M.A Translation Students at Bahri University)**. I will be explaining your thoughts and opinions in order to better serve in Translating Medical Texts from English into Arabic. Be assured that your answers to the following questions will be used confidentially for the study purpose only.

Thank you for your co operation.

The researcher,

Alaa Ali Mohammed Omer

PHD candidate

Sudan University of Science and Technology.

1- Academic qualifications:

a) Bachelor. b) Postgraduate Diploma.
c) MA. d) PHD.

2- Experience in Teaching:

a) 1 – 5 years. b) 6 – 10 years.

c) 11 – 15 years. d) Years more than 15.

Hypothesis three: Teacher of translation view that the difficulties facing MA translation students may be attributed to the lack of updated English – Arabic dictionaries, failure to find the accurate equivalent of English medical terms in Arabic, understanding affixes and understanding the origin of medical terms.

Please put a tick (√) in the right box that represents your attitude towards each of the following statements:

Statement	A Strongly agree	Agree	Neutral	Disagree	A strongly disagree
1- MA students of translation may not find the accurate equivalent of English medical terms in Arabic.					
2- Understanding the meaning and the structure of the elements of medical terms may help MA students of translation to solve the problems of translating medical terms which contain different parts of a word (e.g. hypertension.)					
3- Abbreviations, acronyms, eponyms, non-equivalence, neologism, polysemy pose serious translation problems					
4- Most of the medical terms are derived from Latin and Greek languages; therefore, it is difficult to use literal translation.					
5- Translators need to be trained to work in the medical field before starting their job either as translation or interpreters.					
6- Understanding the meaning of affixes used with medical terms will help MA students of translation to tackle the problems of translating medical terms.					
7- The lack of updated English-Arabic medical dictionaries can negatively influences the work of Arabic translators in the medical field as most of them					

consult such dictionaries to look for the meanings of medical terms.					
8- Translating medical terms from English into Arabic is the main problem in translating medical texts.					
9- Unsuitable techniques are adopted in translating medical terms.					
10- Mastery of two languages (English-Arabic) does not automatically make a person a good medical translator.					
11- Medical translation does not focus on a single genre or a homogenous discourse					
12- Teachers of translation who sometimes translating medical texts help foreign doctors to identify the local medical terminologies, by adding knowledge from the concerned country.					
13- The absence of curricula, teaching programs, different methods and techniques pose difficulties in teaching medical translation.					
14- Medical translation may be difficult for English Translation teachers.					
15- It is possible to prepare a standard Medical Arabic language for the entire Arab world and its speakers for the world due to varied Arabic dialects.					