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Specialty: Translation

**Investigating Challenges in Translating English Dentistry
Terminology into Arabic Language**

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Dedication

Thanks to the most gracious and merciful Allah the almighty, who provide me with power and patience to do this research.

*I dedicate this dissertation to my parents for all their sacrifices and encouragements.
To my lovely sisters and brothers Amel , Ferdous, Abdelgheffar , Abelfettah and Mohammed Ali*

To my uncles and aunts for their continuous help.

To all who loved me and helped me.

Also ,my gratitude goes to all my teachers at the University of KASDI MERBAH OUARGLA for their help and advice.

Soumia TEDDAR

Dedication

This dissertation is dedicated to

First, all praise and thanks be to almighty GOD who give us success and strength to accomplish this work.

Our leader and messenger, Mohammed {My Allah bless and grant Him}.

My parents and my brother, the source of love, encouragement and advice.

Nessrine BENHEMMADI

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We would also like to thank all my friends for the nice moments that we have spent together helping one another.

Our appreciations also go to all who helped us in one way or another to realize this work.

List of Symbols and Abbreviations

AAA: Amalgam

ABG: Arterial Blood Gases

ACE: Angiotensin Converting Enzyme

Adj: Adjective

ANUG: Acute Necrotizing Ulcerative Gingivitis

ARDC: Acrylic Resin Dental Cement

BC: Before Christ

BP: Blood Pressure

DVT : Deep Vein Thrombosis

DFV: Deep Facial Vein

ESRD: End –Stage Renal Disease

N: Noun

NA: Nursing Assistant

RR: Respiration Rate

SL: Source language

ST: Source text

SLV: Superior Labial Vein

TL: Target language

TMJ: Temporomandibular Joint

TT: Target text

VS: Versus

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Introduction

Introduction

Introduction

The world is developing every day in all fields, including these developments in the technological, scientific, medical and other fields. Most of the research sources are of Greek and Latin origin. Therefore, translation has become necessary to facilitate the understanding of terms and texts in Arabic.

Medical translation is one of the most prominent specialties currently required, especially in order to keep pace with developments in the medical field. Medicine includes many specialties, as each specialty in medicine has its own terminology, and they may share some widely used medical terms. Medical terminology is one of the most complex and different systems of terminology that is why some translators may face challenges while translating English medical terms into Arabic. These difficulties in medical translation have been the subject of research for a very long time , as Huang (2013) indicated, presents problems which are different from other specialized domains, particularly the problems of determining the right medical terminology. Also, Gharsa M. Argeg in her study (AGREG, 2015) was conducted on Ph.D.students who specialized in translation and professional translators in Libya through a questionnaire consisting of a set of English medical terms, where the results revealed several problems in translating these terms into Arabic, including the use of literal translation in translating of : prefixes, suffixes and roots of an English medical term or English compound words into Arabic.

As this study will focus on some dentistry terms where the latter is considered a branch of medicine .In addition, presenting the strategies used during the translation of these terms from English into Arabic .Thus, knowledge of medical terminology, types of words, its divisions and the scientific translation is necessary in order to find the appropriate technique for translation, as well as to find the accurate equivalent.

Therefore, there are redoubled efforts by Arabic translation institutes and organizations in order to improve medical translation and find solutions to facilitate the translation of various technical and scientific texts from English into Arabic.

Introduction

Research Problem

The main issue of this research is to identify the procedures of translating dentistry terms from English into Arabic, and how to deal with difficult and coded terms in dentistry terminology.

Purpose of the Study

The purpose of this research is to understand and to be aware of the basic elements of medical terminology in order to learn the translatability of dentistry terms from English into Arabic, and to help the translators in the translation of dentistry terms.

Objectives of the Study

The general scope of this study is determined by the following objectives:

- To facilitate the work of translators in order to be able to deal with the difficulties that can be found in dentistry translation.
- To help dentists to good understanding English dentistry terms in Arabic.
- To give opportunity for translators and Arabic linguists to ameliorate Arabic language in dentistry terminology through finding equivalents for some English dentistry terms in Arabic.

Statement of the Research Questions

The main question that to be addressed through this research is how are the dentistry terms are translated from English into Arabic?

In addition ,to reach the answer of this question, other sub-questions have to be asked:

- What are the parts of medical terms?
- What are the commonly used procedures during the translation of Dentistry terms from English into Arabic?
- What are the challenges that face translators during the translation of dentistry Terms from English into Arabic? Moreover , how they deal with them?

Hypotheses

In order to answer the above-mentioned questions, the following hypotheses are suggested:

- It assumed that translators may use different techniques while translating dentistry terms from English into Arabic .

Introduction

- The medical terminology is a complex system and most of medical terms derived from Greek and Latin may be a challenge for translators.
- May transliteration and borrowing are the most techniques used when translating medical terms from English into Arabic.
- May they could not find the accurate equivalent of English medical terms in Arabic.
- Perhaps knowing the structure of the medical terminology will help translators in dealing with them appropriately.

Research Methodology

This research adopted comparative and analytic approach the study comprises 50 Dentistry entries. It consists of diseases, symptoms and oral components specific to dentistry.

Literature Review

Translators are usually interested in Medical Translation, simply, because they face different challenges in its terminology and try to find solutions for them ;since it contains a specific language. Medical Translation is vastly talked about in healthcare and medical articles as a necessary domain for human life. Dentistry is an important branch of medicine that rarely talked about in the previous studies. “Medical translation requires specialized and trained translators to be constantly updating their knowledge. This field demands top-quality working procedures because what is at stake is the health and life of human being....” (why is medical translation so important?)

According to McMorrow (1998) “Latin had a life of about 800 years in academic medicine (1000-1800)”. In the Middle Ages both Latin and Middle English were acceptable in medical communication: Latin in academic instruction and Middle English as the vernacular language. Anglo-Saxon had some basic medical terminology e.g. head, skull, brain, nose, blood ,wound, sore etc. “ (Wioleta, 2015)

Limitations of the Study

This study is limited due to several aspects:

First, the question in this research was about the difficulties that medical professionals may face while translating medical terms from English to Arabic, but it was found that they are not familiar with translation techniques. The research was directed to

Introduction

professors and doctors who teach in the field of translation in KMU Ouargla, but not enough samples were collected from the questionnaire and interviews. After that, there were interviews with the sworn translators in Ouargla, but their number was not enough to conduct the study, and they were dealing with legal translation more than the medical Translation. Also, there is lack of medical translation in Algeria in general because there is no specialities in translation domain for translators such as :medical translators, legal translators, commercial translators...etc.

In addition to the lack of equivalent of English Dentistry Terminology in Arabic. This study was limited also by non-generalization of results of some dentistry terms to others.

Organization of Dissertation

This dissertation consists of an introduction and two basic theoretical chapters , and a practical chapter. The first chapter deals with medical terminology and the basic components of a medical term in addition to the etymology of a medical terms and some challenges may encountered by translators while translating medical terms from English into Arabic . The second chapter is devoted to Dentistry definition, and problems of non- equivalent and the translation and its kinds and the procedures used during the translation of Dentistry terms. The practical chapter is devoted to the presentation and analysis of 50 Dentistry entries (دودين, 2009) translated from English into Arabic and the procedures used during the translation, and the discussion of results, and it ends with some recommendations that will facilitate dealing with challenges in translating some medical terms in the present and future.

CHAPTER ONE

Medical Terminology

Introduction

Terminology Definition

Term Definition

Medical Terminology Definition

The Components of Medical Terminology

Etymology of Medical Terminology

Characteristics of Medical Terminology

Translation of Eponyms, Abbreviation and Acronyms

Introduction

This chapter provides a general background about medical terminology and its features with some examples then shows the parts of medical terms and some examples about it. Moreover, it provides the etymology of medical terminology and its characteristics. In addition, it dealt with the abbreviations, acronyms and eponyms in the medical field with examples.

Terminology definition

It is defined as the set of terms of a subject field. Terminology is a discipline in that it has delimited theoretical and a defined object of study. Terminology is an original discipline in two senses: first in that it selects from the source subject matters specific bases and others; second it is original in that it reshapes these foundations so as to build up its own space which is distinct from other scientific fields and original with respect to the object, frame, method and goals it pursues.

Term definition

Term is a word or a collection that refers to a certain concept in a particular field of human endeavour: science, technology, culture, sport art, etc. It is a word in special function; according to Theodore Savory "terms are symbols designed to transfer a certain amount of encoded information that is understood only by those who know the appropriate key or code" (Savory, 1967)

Medical terminology

Medical terminology defined as a specialized language used in the field of medicine by medical professionals including specialists, general practitioners, paramedics, pharmacists and others.

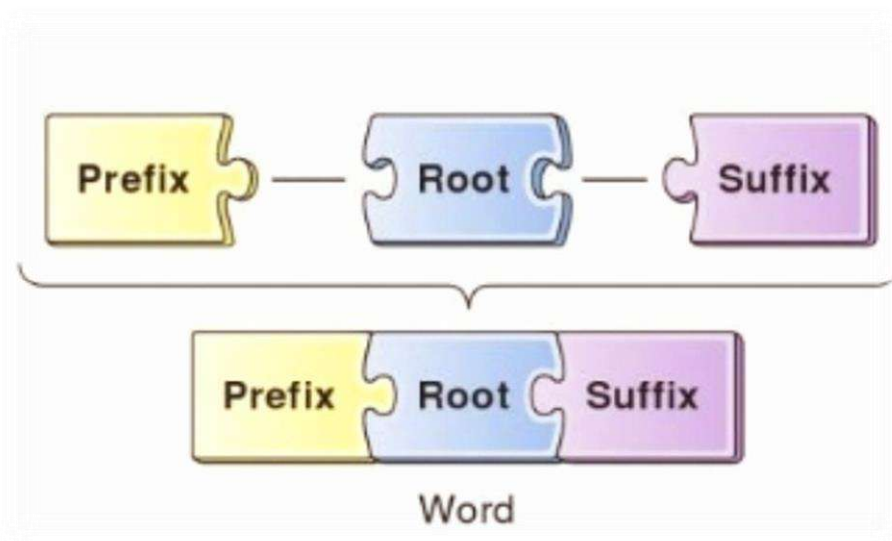
While medical terms contain special vocabulary as they are used in various medical specialties, description of diseases and symptoms, in both medical examinations and radiology and procedures, anatomy, physiology and treatments.

The Components of Medical Terminology

Word including medical terms are composed of four basic word parts. Those word parts are prefix, word root, suffix, and combining vowel and changing of any part of a word changes its meaning.(Petris, 2014)

Figure 1

Medical term elements (Petris, 2014)

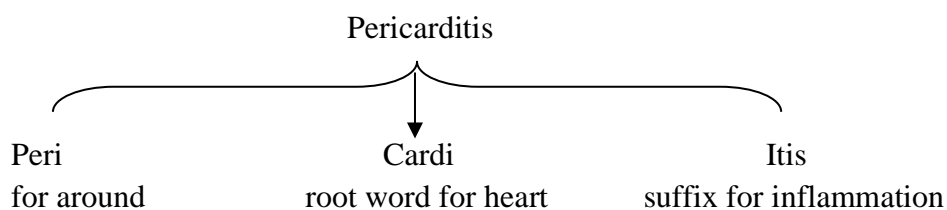


Prefix

The word or element attached to the beginning of a word root to modify its meaning . Also not all medical term have a prefix , than when defining a medical term that has both a prefix and suffix , define the suffix first , the prefix second , and the word root last .

Examples

Pericarditis : this word is a disease name , and is divided into three parts as follows :



Literally means: inflammation around the heart = إلتهاب التامور

Examples of Prefixes

- All(o) : means another, different
- adip(o) : means fatty
- carni(o) : of the cranium
- onco : relating to cancer
- hyper : means excessive
- hypo : means insufficient

Word root

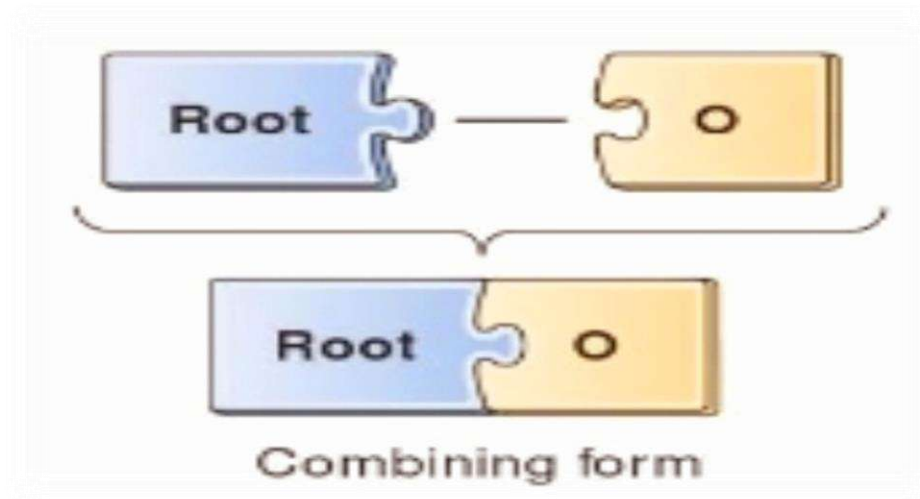
The meaning or core part of the word .Medical terms have one or more roots by adding prefixes and suffixes to a word root , the meaning of a word is changed .Word roots are joined by a combining vowel.

Combining vowel

Usually is the addition of an "O" and occasionally "I", which are used between compound word roots or between a word root and suffix . Combining vowel make word pronunciation easier and called combining form .

Figure 2

Combining Form of Medical Term (Petris, 2014)



Examples


1. Gastroenterology → gastr + o + entero + logy → طب الجهاز الهضمي
2. Meningitis → Mening + o + itis → إلتهاب السحايا
 - In this case the letter « o » dropped because the suffix begins with a vowel « i ».
3. Hemorrhage → Hem+ o +rrhage → نرف

- In this case the letter « o » dropped because the suffix begins with a consonant.
- Literal meaning : is the escape of blood from the vessels.



Suffix

A word part or an element attached to the end of a root word to modify its meaning not all root words have a suffix , and some words have two suffixes .

Examples suffixes

➤ Psych+ o +log + ic +al 

Some suffixes are attached to a prefix only .

➤ Dia+rrhea 
 ➤ An + emia 

Anemia

An = no , without

Emia = suffix meaning blood

- Literal definition :decreased number of red blood cells or decreased hemoglobine cells .
- Epi + gastr + algia = epigastralgia

Epi = above , over

Gastr = stomach

Algia = pain

- Literally meaning the pain above the stomach , or the pain in the upper region of the abdomen .
- Ot + o+ rhin + o + laryng + o + logy = otorhinolaryngology = طب الأذن و الأنف و الحنجرة

Ot = ear

Rhin = nose

Laryng = throat or larynx

Logy = study of

- Literally means : the branch of medicine deals with discases of the ear , nose and throat or larynx .

Examples of Suffixes

- itis : means inflammation
- algia: means the pain
- lepsy : means attack, seizure
- logy : means the knowledge of something .

Etymology of medical terms

The main part of a medical term come from various written sources , scientific , historical and artistic works , as well as dictionaries . The semantic terminology or lexical semantic method (poly semantic) used widely in medicine for the expression of medical concepts and meaning, in addition to metaphorical usages to the describe terms .Terms in medicine can be divided into various types includes one word (simple or derived) or multiple words (compound or combinations). Compound words are when two or more words combine to form a new single word or a phrase .There are three different types of compound words in grammar, determined by how the words are separated.(NOVATEUR PUBLICATIONS, 2021)

- Open compound words { with spaces between the words }
Example: Buccal teeth (الأسنان الشدقية)
- Closed compound words { with no spaces between the words }
Example: Stomatitis (التهاب الفم)
- Hyphenated compound words { with hyphens between the words }

Example: Over-eruption(بُزوغٌ مُفرطٌ [أسنان])

Henry Alan Skinner in The Origin of Medical Terms stated that the source of medical terms is from Latin.And he defined the medicine as “ Medicina , the art of healing , or the means of healing , from Medicinus , relating to healing “ (Webster’s encyclopaedic unabridged dictionary of the English language, 1998)

Medical terms are derived from Greek and Latin as the international scientific language has formed many terms by borrowing Greek root , words , or word parts;that have Greek origin,they passed through Latin into English language .

Characteristics of medical terminology

The medical terminology based on the conceptual connections of professional knowledge .Since the medical terminology considered as set of systematic terms , limits the system of concepts of a particular field of knowledge ; the terms are socially bindings and reflected by laws , scientific theories the term has a singular or unambiguous tendency , it clear , nominative function and retains this feature both in context and out of context . In addition, the meaning of the term is equal to the content and is stylistically neutral . Then the term may expressed by one word (gingivitis التهاب اللثة , dent أسنان , stomatous الفم ,etc) and by a word combination (gold crown تاج ذهبي , tray handle مقبض الطّابع [أسنان] ,etc) . The field of medicine can be classified as follows diseases (pulpitis) , symptom (dysfunction) , methods of treatment (palliative care) , medical equipment (doctors), methods of prevention body parts , the names of medical operations ,organs ,institutions and fields .

Medical terminology is one of the most complex terminology systems, and it differs in three respects :

Anatomical terminology

It studies the internal anatomy of the human body and all its organs

Clinical terminology

It is employed in clinical practice ,many of clinical terms are considered as complex words composed of word forming elements are from the Greek and Latin terms. Therefore, the mastering of Greek and Latin terms element system is the terminological key to understanding the basic medical clinical term.

Pharmaceutical terminology

It uses mainly Greek and Latin words or parts of them for formed new terms and names.

The Translation of Medical Eponyms, Abbreviations and Acronyms

Medical Eponyms

They are terms (word or phrase) derived from a proper noun , which is the name of a person ; where they are the discover of certain disease , pathological symptoms and signs , or a medical or therapeutic technique or surgical procedures or tools , clinical or laboratory tests , and often this person is a doctor or scientist . Nida stated in his book “ To Words The Science Of Translation “ that “ name “ like any word identical to or derived from a proper name , he suggested dividing the names into three categories , those derived from people, objectives and places .

Examples

Crohns disease (regional enteritis) → (التهاب الأمعاء الناحي)داء كرون

Wilson's disease(hepatolenticular degeneration) → (التنكس الكبدي) داء ويلسون

Hodgkin's lymphoma(lymphocarcinoma) → سرطان لمفاوي

Medical abbreviations

It is defined as a shortened form of a written word or phrase used in place of the full form of medical terms.(G&C Merriam , 1981)

Examples

- ABG : Arterial Blood Gases (test to detect lung diseases) → تحليل غازات الدم الشرياني
- ACE : Angiotension Converting Enzyme is a treatment of high blood pressure
الإنزيم المحول للأنجيوتنسين
- DVT :deep vein thrombosis(a blood clot) → جلطة الأوردة العميقة, خثار وريدي عميق
- ESRD: End-Stage Renal Disease → المرحلة الأخيرة من مرض الكلى, الفشل أو القصور الكلوي

Medical Acronyms

One of the characteristic features of medical language is the presence of acronyms, which are shorthand and a special case of abbreviation that over time become of everyday language and practice, and frequently encountered on requisitions for radiologic services or in daily conversation. It is initialisms and clipped forms. With English having the status of the lingua franca of medicine, English acronyms enter other

languages and are used both by the medical professionals and patients, especially if no native acronym is commonly used in the local language .

Examples

RR : Respiration rate → معدل التنفس

BP : Blood pressure → الضغط الدموي

NA : Nursing assistant → مساعد ممرض

CHAPTER TWO

Medical Translation

Introduction

The definition of translation

The definition of scientific translation

Medical translation definition

Medical translation strategies

Dentistry definition

Medical translation history

The common problems of non-equivalence

**Challenges encountered by translators during the translation of medical terms
from English into Arabic language**

Introduction

This chapter will identify and clarify translation in general. It will recognize the scientific translation with examples. Also, this chapter will state the most used procedures by translators in translating English medical terms into Arabic with examples. Furthermore, it includes the definition of dentistry as a branch of medicine. In addition to the history of medical translation to know its development through time. And we will spot the light on the common challenges and problems that may face translators during the medical translation. Moreover, it will tackle Arabization as an Arabic procedure to deal with foreign terms, and its kind derivation as a technique of generating new words and terms in the Arabic language.

The definition of translation

Translation is a process of rendering meaning, ideas, message of a text from one language into another. Although, the difference of languages structures, the meaning stays the same but expresses in different language system because each language has its own rules, and its specific characteristics that distinguish it from the other languages as Eugene Albert Nida stated that “each language has its own genius.”

According to Catford the translation is “the replacement of textual material in one language (SL) by equivalent textual material in another language (TL)” For example a verb in a (SL) can be translated as a noun in the (TL) or the present perfect in English language is replaced by some adverbs as an equivalent in the Arabic language.

The definition of the scientific translation

Scientific translation is to translate terms and concepts from one language to another in the field of science of all types for example: physics, mathematics, medicine...etc. Ghazzala (1995) defines scientific translation and said: “scientific translation is mainly about translating terms in the field of science and technology of all kinds, medicine, physics, and chemistry, mathematics, and computer science from one SL into TL.” (Ghazzala, H, 1995). Also, it is defined by Scott L. Montgomery “By ‘scientific’ is here meant rational study of the natural world, including the human body, thus medical knowledge also.” (Montagomey, 2010)

- ❖ Examples of English scientific terms and their equivalents in Arabic

Table 1

Translation of English Scientific Terms Into Arabic

English Scientific Terms	Arabic Equivalent
Scientific	علمي
Scientist	عالم
Technology	التكنولوجيا
Laboratory	مختبر
Research	بحث
Microscope	مجهر
Atom	ذرة
Gas	غاز

Medical Translation definition

It is the operation of transferring the meaning of any medical term, concept, document, and text in whatever medical field from one language to another. In addition, medical translation refers to the interpretation of texts involving the medical and pharmaceutical industry in a given language, and the creation of documents which say the same thing in other language.” (medical translation: what is it, and why is it important?)

Medical Translation Strategies

Procedures Employed in Medical Translation

According to Jean-Paul Vinay & Jean Darblnet [Montréal-Brunswick- Paris, July 1954], who suggested two methods of translation namely direct and oblique translation. In this study we are going to deal with the three direct methods of translation

Borrowing. It is one of the simplest procedures that a translator use when face cultural terms like traditional food , and clothes...etc ; For example: the Arabic Algerian term “كسكس” in (SL) is translated into “ Couscous “ in English (TL). Borrowing is the

operation of transferring the source language term as it is, using TL letters that have the same sound and pronunciation, or near of SL letters as it mentioned in the above example. It occurs in the level of words only. Also, it is used sometimes to maintain the foreign language imprint and to show prestige. Vinay and Darblnet said: “To overcome a lacuna, usually a metalinguistic one (e.g.a new technical process, an unknown concept). It would not even mere it discussion in this context if translators did not occasionally need to use it in order to create a stylistic effect. For instance, in order to introduce the flavour of the SL culture into a translation, foreign terms may be used, e.g. such Russian words as ‘roubles’, ‘datchas’ and ‘aparatchik’, ‘dollars’ and ‘party’ from American English, Mexican Spanish food names ‘tequila’ and ‘tortillas’, and so on.

Calque. It is also called loan translation, it occurs on the level of phrases and expressions. Calque is the process of translating a phrase or expression using word for word translation, which means each word in the phrase or expression of the SL has its equivalent (a direct equivalent) in the TL,; for example: ‘science fiction’=>’العلمي الخيال’, in this example the word “ science “ faced by its equivalent (علمي), and the word “ fiction “ faced by its equivalent (خيال) in the phrase. Another example, ‘ Brainwash’=>’غسيل الدماغ’, the word brain is faced by (دماغ), and the word ‘ Wash’ is faced by (غسيل). Vinay and Darblnetsaid: “ A calque is a special kind of borrowing whereby a language borrows an expression from of another, but then translates literally each of its elements.”

Literal Translation. It is also known as word for word translation. It is to find the closest equivalent for the SL in the TL, through respecting the form of the source language, and rendering the same meaning of SL. However, there is a difference between the literal Translation and word for word translation. Literal translation services the grammatical structure and the style of the TL. For example:

ST : ‘this is a dangerous surgery for the patient’, is translate it as

TT: هذه عملية جراحية خطيرة على المريض .

In other words, if used word for word translation, it becomes: ‘ هذه عملية جراحية خطيرة على ’ (it doesn’t have a sense). Since literal translation is used between two similar languages such as English and French, which means both literal and word for word translation are useable, literal translation can be used between different languages like Arabic and English (the above example). In the later, sometimes literal translation and sometimes word for word translation is used, and this depends on the need of translation. For literal translation Vinay and Darblnet stated that “Literal, or word for word, translation is the direct transfer of a SL text into a grammatically and idiomatically appropriate TL text...It is most common when translating between two languages same family (e .g. between French and Italian).”

Transliteration.It is a kind of borrowing, in which the translator transcribe the sound of the sound of the source language letters in the target language. It is used usually with proper nouns, countries names, objects names...etc. The nouns that are considered as foreign nouns, and do not have equivalents in the TL. For example: Condor in English (which is a famous brand in Algeria) is translated by using transliteration to كوندور in Arabic. Where each letter sound in the SL find its equivalent in the TL through the transliteration.

Transliteration refers to the process of expressing the sound of how a word is pronounced in the source language using the Alphabet of the Target language. That is to say, we use one language alphabet to depict it with the help of other language alphabet.” It is used mostly with proper nouns, countries names, objects names...etc.

Examples

- Lignac’s disease → داء لينياك
- Linadau’s disease → داء لينداو
- Lobo’s disease → داء لوبو

Paraphrasing.It is used by translators to clarify a term or concept that can not be understood by others. Using a small explanation. “It is a brief explanation used when there is no way to make an unclear term or expression (cultural, religious etc.) understandable. So, the paraphrase is usually longer than the original one.”(2018)

For example

- Physiatrics(physical medicine)→الطب الفيزيائي
- Psychiatry(psychologicmedicine)→الطب النفسي
- Extended care(long term care)→رعاية مديدة

Procedures of translating Medical Terms from English into Arabic

Other procedures used by Arabic grammarians to generate new words in the Arabic language:

Discovery.It is called also revival. It is to revive old Arabic terms, which were used in the past and disappeared. And give them new meanings for new foreign terms. Rather, it is the production of new meanings for old terms, and use these new meanings for the new foreign terms as equivalentents in the Arabic language. For example: the English term “Porpoise”, which is a sea animal. It is derived into two words ‘Porcus’, which means “خنزير”, and ‘Pisces’ , which means ‘سمك’ to get the term ‘خنزير البحر’ in the Arabic language. So, Arabians used Discovery and revive the old Arabic term ‘دوحر’, in which the word ‘دو’ means ‘ male pig or piglet’ and ‘حر’ means ‘بحر’. Also, the term ‘دوبل’ is another reviveled term for this animal in Arabic language.

“ This Technique consists of reviving old words, terms, or concepts and extending their meaning to express new concepts. It is one of the preferable and useful techniques by academies because it utilizes the rich lexicon of Arabic instead of introducing new elements to it.”(Dalia, 2022)

Neologism.It is to generate new words in the language, or to use old word which was given new senses for the new terms. And it is a helping process to rich the language vocabulary through providing new words, terms, concepts, phrases and expressions. For example: the word ' phast', which is a new word in Neologism. It is decided into two words 'phone' and ' fast', and it means to fast on using phones, that is to stop using them.“ Most frequently, a neologism is a new coined word or phrase structured or

created to assign a name to a new reality. Or as Newmark(1985:139) puts it:' Neologisms can be defined as newly coined lexical units or existing lexical units that acquire a new sense.'”(A Neologism : Translation and/or Adoption, 2019)

Neologism is to create a new term or concept in the Arabic language through translating the sense of the term, concept, Coinage, word, phrase or expression.

Here are some examples of English medical terms and their translation into Arabic

Table 2

Translation of Some English Medical Terms Into Arabic

English Medical Term	Arabic Medical Term	Translation Procedure
Fibroeystic disease of the pancreas	الداء الكيسيُّ الليفيُّ في البنكرياس	Literal translation
Epstein's disease (pseudo diphtheria)	داء إيشتاين (الْخُنَاقُ الكاذب)	Transliteration
Fallot's disease (tetralogy of Fallot)	داء فالو (رُبَاعِيَّةُ فالو)	Transliteration
Feer's disease (acrodynia)	داء فير (ألم المهارات)	Transliteration
Fibroeystic disease	داء كيسيُّ ليفيُّ	Literal translation
Primary anemia	فقر الدم الأوّلي	Calque
Pure red cell anemia	فقر الدم ذو الكريات الصفراء (فقر الدم الناجم عن فقد طلائع الكريات الحمراء في النفس)	Literal translation
Chemical gingivitis	التهاب اللثة الكيميائي	Literal translation

Arabization. It is one of the famous Arabic language techniques that relies on it to coin and welcome new concepts. On the other hand, it is thought that Sibawaweih, a highly regarded Arabic Grammarian, first used the term “Arabization“ in his book, The Book. Its classical, dictionary- based, abstract, constrained, and formal meaning refers to the practice of writing foreign words in Arabic script with their native pronunciation_ a practice known as “transference”(التحويل) in modern parlance (e.g. ‘Internet’ is Arabized as 'إنترنت'). According to our forebears, a word is ‘Arabized ’ when it is pronounced, used, and written in accordance with Arabic rules of pronunciation, spelling and grammar (التفوه بالحمة على منهاج العرب/ بطبعها بالطابع العربي)_ a process that is currently

referred to as “naturalization” (التطبيع) (e.g. ‘Topography’ is naturalized into (طبوغرافيا)). In both cases, the ‘Arabized terms’ foreign flavour is retained, especially in the former. As a result, they are labeled by purist Grammarians as (الدخيل/ الترجمة الدخيلة) (loan translation/ Calques), which is a derogatory phrase denoting their foreign, non-Arabic origins invading on Arabic language, and are thus considered as inappropriate, sensitive, and inferior to Arabic. For Arabization is not the same as translation. The term ‘Arabisation’ today refers to any operations, procedures, and methods used to translate scientific or technical terms specially into Arabic, often employing Arabic and Arabized words and phrases.

Derivation. It is a kind of Arabization, in which the Arabic language coin new words and terms, and it includes four (4) types : (الاشتقاق الصغير و الاشتقاق الكبير و الاشتقاق الأكبر و) (الاشتقاق الكبّار). Derivation is a morphological term that Arabic grammarians use to describe the process of creating a new word from one that already exist. Both words share the same origin (three radical consonants), which identifies their source and indicates their same original meaning.

The original components of a root are repeated in these two words, ensuring their lexical meaning. Depending on the pattern sets that the phonetic structures of newly derived words rhyme. For example the derivation from the Arabic word 'علم', which means 'science' in English. The derived words from the Arabic word 'علم' their meaning in English language

عالم → Scientist

علمي → Scientific

معلوم → Known (something known)

علم → Teacher

معلومة → Information

Dentistry definition

It is a branch of medicine that focuses on the study, diagnosis, prevention, and treatment of conditions and diseases related to the oral cavity and the maxillofacial area (which includes the face, jaw, and neck). Dentists, also known as dental surgeons, are healthcare professionals who specialize in providing oral healthcare services.

The field of dentistry encompasses various aspects of oral health, including teeth, gums, jaws, and supporting structures. Dentists are trained to diagnose and treat a wide range of dental conditions, such as tooth decay, gum disease, oral infections, malocclusions (improper bites), and oral cancers. They also perform procedures like dental fillings, root canal treatments, tooth extractions, teeth whitening, and placing dental prosthetics like dentures, dental implants, and crowns.

Dentistry is not only focused on treating existing dental problems but also emphasizes preventive measures to maintain oral health. Dentists educate patients about proper oral hygiene practices, provide regular check-ups and cleanings, and offer guidance on diet and lifestyle choices that can impact oral health.

Additionally, dentistry often works in collaboration with other medical specialties, such as oral and maxillofacial surgery, orthodontics, periodontics, endodontics, pediatric dentistry, prosthodontics, and oral pathology, among others, to provide comprehensive care to patients with complex dental needs.

Medical Translation History

Medical translation is one of the oldest fields of translation: the hardship of the body always has been our central and necessary preoccupation. The scientific practices that define contemporary Western medicine can be traced back to ancient and Hellenistic Greece (500-30BC). Greek medicine shifted away from the supernatural at this time and toward logical thinking. It transmitted its traditions first to the Roman Republic (509-31BC) and the Roman Empire (31BC-476AD), and subsequently to Medieval Europe (1100-1500AD). Medical writing evolved throughout this procedure as a method for mobile medical school students to express their ideas. The centers of learning migrated from Greece to Egypt when that country was conquered by the Roman Empire (146BC). Greek medical texts were translated into Arabic, and Greek doctors continued to hold a prominent position. The Latin translation only covers a minor portion. The majority of the Greek physicians' writings were lost to Western Europe after the fall of the Roman Empire in the 5th century. For instance, the writings of the traveling physician Galen (129-200AD) weren't known to the West until they were translated from Arabic into Latin in the 11th and 13th centuries, when Western Europe started to rediscover Greek scientific texts as a result of the discovery of Arabic libraries during the Crusades in Spain and other places. Although it made it possible to

access the Greek system of science the Arabic language had made very little contribution to the language of medicine. Greek scholars went to Italy in the 15th century following the Ottoman conquest of Constantinople, bringing with them the ancient manuscripts, which were later translated into Latin].

The Great European universities used Latin as the primary language of instruction between 1000-1800AD, and it incorporated Greek and Arabic medical terminology by transliteration or overlay with Latin prefixes . By 1800, Latin as the language of medicine had all but disappeared due to the growing need to communicate with non-academic physicians, students, and patients. Local languages had largely taken its place, all of which still used the Graeco-Latin terminological base. Knowledge supremacy has affected the interactions between languages throughout history. English has replaced many other languages and becomes the lingua franca of medical research during the second part of the 20th century, perhaps as a direct result of American supremacy (U.S.) in many technical sectors. Despite the obvious benefits of using English as the primary language of research, native speakers have an advantage over those who must first learn the language in order to communicate their thoughts and findings in it or to read English-language material . Of course, this is wonderful news for medical translators.

The Common Problems of Non- equivalence

Here are some kinds of non- equivalence problems that may face Translators :

a. Culture-specific concepts

A word from the source-language may convey a concept that is completely foreign to the target culture. The concept in question could be either abstract or concrete.; It could be connected to a kind of food, a social custom, or even a religious conviction. For example ‘KousKous’ is a common type of food In the Arabic Maghreb countries only, and it is a social-specific Concept for the other cultures.

b. The source -language concept is not lexicalized in the target language

The target culture may be familiar with the concept being expressed by the source-language word, but it has not yet been Lexicalized, or been “allocated” a word in the target language. For instance the adjective ‘standard’ (that means ‘ordinary, not extra’, similar to the standard range of products), in which it expresses a simple and accessible

Concept that most people can understand, so far this concept has no equivalent in Arabic.

c. The source -language word is semantically complex

The word's semantics in the source language could be intricate. In other words, a single word made up of just one morpheme is sometimes able to convey a more complicated range of meanings than a complete sentence. If complex Concepts become significant enough to be discussed frequently, languages will naturally evolve highly succinct ways for referring to them. We typically are not aware of how semantically complicated a word is until we have to translate it into a language that does not have an equivalent for it. 'Neuroticism' is an example of semantically complex word, which means, "People that are high in this trait derive their meaning from a sense of peace and security". Also, another example of it the concept 'conscientiousness', which means "people that are high in this trait derive their meaning from achieving and excelling at fulfilling their roles and duties in society (i.e. excelling as a friend, at their Job, as a family member...etc.).

d. The source and target languages make different distinctions in meaning

The target language may distinguish between meanings more or less than the source language. What one language considers to be a significant difference in meaning may not be meaningful to another language. For example the English language differentiate between at school and in school. When someone that "I am at school" means that he/she is a part of the school(physically present) may be a worker or a student, but when he/she says I am in school means that h/she is still studying wherever in university, primary school, middle school...etc (it has nothing to deal with physical presence).

e. The target language lacks a superordinate

There may be specific words (hyponyms) in the target language, but there is no general word (superordinate) to lead the semantic field. For instance 'animal' is a Superordinate in English for horse, dog, cat, bear...etc. Also, the word 'vehicle' is a Superordinate for car, wagon, van, dolly, truck...etc. However, in Arabic language there is only specific words(سيارة، عربة...), and each has its meaning.

f. The target language lacks a specific term (hyponym)

Since each language only generates those distinctions in meaning that seem important to its unique environment, languages more often contain generic words (superordinate) but lack specific ones (hyponyms). English contains many endless examples of this kind of non-equivalent. Examples of hyponyms in English, in which it is hard to find particular equivalents in other languages such as feature, survey, critique Also, English has various hyponyms that have no equivalents in many languages such as mansion, manor, villa, bungalow.... We may find more verbs such as leap, spring, plummet...

g. Differences in physical or interpersonal perspective

In some languages, physical perspective may be more significant than it is in others. Physical perspective is concerned with how objects or persons are situated in respect to one another or a specific place, as stated using word pairs such as come/go, take/bring, arrived/depart...etc. The relationship (tenor) between the discourse participants may also be considered in the perspective. For example, Arabic has fifteen equivalents for get (يملك، يدرك، يجلب، يحصل على، يُصبح، يصل الى (مكان)، يركب (وسيلة نقل)، يُصاب (بمرض)، يوجد (في) get (حالة)، يقوم ب أو يُنجز، يُهيئ، ينتقل الى، يرتاح له، يتوصل الى، يحصل له

h. Differences in expansive meaning

A target -language word that shares the same propositional meaning as a word in the source -language could have a different expressive meaning. The difference could be significant or hardly noticeable, but it must be significant enough to cause a translation issue in a particular situation. In other words, the translator may occasionally add the evaluative element by using a modifier or adverb if necessary, or by incorporating it elsewhere in the target text, if the target language counterpart is neutral in comparison to the source language item. When the target-language counterpart is more emotionally charged than the source language item, expressive meaning differences are typically more challenging to handle. For example the term 'Homosexuality' is not an inherently pejorative in English, however, it is inherently more pejorative in Arabic, and it is difficult to use it is quite difficult to use it in a neutral context.

i. Differences in Form

Frequently, a specific form in the source text has no counterpart in the target language. Many times, there are no direct Translations in other languages suffixes and prefixes

that in English convey propositional and other forms of meaning. There are many couples in English, like employer/employee, trainer/trainee and payer/payee. Additionally, the suffixes -ish (eg. Boyish, hellish, greenish) and -able (eg. Conceivable, retrievable, drinkable) are frequently used in this text. In Arabic, for example, there is no easy mechanism for forming such forms; therefore depending on the meaning they convey, they are frequently replaced by an appropriate paraphrase (e.g. Retrievable as 'can be retrieved' and drinkable as 'suitable for drinking'). Propositional meaning can usually be translated into other sorts of meaning, but this is not always possible. Their delicate contribution to the text's overall meaning is either completely lost or made up for elsewhere via compensating strategies.

It is crucial for translators to comprehend how affixes affect the meaning of words and expressions, especially since these affixes are frequently used ingeniously in English to coin new words for a variety of purposes, including filling in brief semantic gaps and generating humour.

j. Differences in frequency and purpose of using specific forms

Even if a certain form in the target language does have a ready counterpart, there may be a difference in how frequently or for what purpose it is used. For binding clauses, English, for example, uses the continuous-ing form far more frequently than other languages that have its equivalents.

k. The use of loan words in the source text

The usage of loan words in the source text creates a unique translation challenge. Apart from their particular propositional meanings, loan words in English such as 'au fait, chic...' are frequently utilized for their prestige value. This is frequently lost in translation because finding a borrowed term with the same meaning in the target language is not always possible. Loan words also introduce the problem of 'false friends' (faux amis). They are words or expressions that have the same form but render different meanings in two or more languages. Once a word or expression is borrowed into a language, we have no influence over its growth or the new meanings it may or may not take on.

Challenges Encountered by Translators during the Translation of Medical Terms from English into Arabic Language

Medical translation is one of the important and recently requested specialties. Especially since most medical terms are from Latin and Greek origin; so, translators may face difficulties and challenges during the translation of medical terms from English into Arabic.

Here are some common challenges that translators may face while translating medical terms from English into Arabic:

Linguistic differences

English and Arabic are from two different language families and have different grammatical structures, word order, and syntax. Where these differences are one of the challenges that may face translators in the medical field. Where it is necessary to know how to overcome these differences and know the medical terminology in both languages, and this is what makes the translation accurate and meaningful.

Terminological differences

Since English and Arabic have different structures, the medical terminology differs between the two languages, and may also differ due to differences in health care systems and the existence of cultural and historical differences. Translators must be aware of these differences and understand the specific medical terminology used in both languages to ensure an accurate translation.

Polysemy and Synonymy (multiple meanings)

Some medical terms in the English language have multiple meanings, depending on the context in which they are inserted. That is why translators must find the intended meaning accurately in order to facilitate the selection of the appropriate translation in Arabic to avoid ambiguity or confusion and avoid translation errors.

Examples

Addison's point can be translated into Arabic as نقطة أديسون but it is not the intended meaning because it is unclear and this translation is ambiguous. The other translation is (المنطقة المتوسطة في المنطقة الشرسوفية (فوق المعديّة) is , the second translation is clearer but the exact meaning can only be determined by the specific context .

Cultural or Environmental Differences and Dialectal Variations

Translators may face other challenges, including how to find the meanings of certain words that do not exist in a particular culture or environment. This is related to the problem of untranslatability from the source language into the target language.

Arabic dialects differ in different geographical regions and countries, and thus medical terminology may differ between these dialects. Therefore, translators must be aware of these dialects and their differences so that they can choose the appropriate medical translation that is compatible with the dialect used in a particular region.

Examples

Milk teeth is translated into Arabic via domestication strategy as أسنان الحليب, however it is translated into أسنان لبنية in Arabic East countries .

Wisdom teeth translated into the Arabic slang by domestication strategy as سن العقل , in which it is translated into الناجدة /التواجد in standard Arabic

Abbreviations

The Arabic language is characterized by several advantages, including that the word in the Arabic language is characterized by its indivisibility or division; so, there are no abbreviations or acronyms as in the English language, and even if there are abbreviations they are few. Abbreviations in the English language are a shortened form of a word, a compound name or a phrase that arises through the use of some letters of the word or the first letters of each word.

In the following example

APP does not has the direct abbreviation equivalent in Arabic ,it may refer surgical term (Advanced Practice Provider) or it may be considered a dentistry term (Acute Purulent Pulp) . Therefore, there may be difficulty in finding the exact equivalent in the Arabic language as مساعد ممارسة متقدمة or لب قيجي حاد .

Medical Eponyms

Eponyms may be the source of translation problems , the correspondence between eponymous terms and their equivalents does not necessarily mean that both source and target terms will be eponymous.

Example: Bolton's point in Dentistry translated into Arabic as نقطة بولتون (نقطة على القحف) (, and it can refer to Bolton's point of water system in this case translated into Arabic As نقطة بولتون (نظام المياه).

Selecting Proper Meaning

There are some words that do not accept translation from the perspective of translating the word, meaning that some words in the English language that do not accept the Arabic language translated into one corresponding word, for example, we find that the word craniopharyngioma cannot be translated into one word in the Arabic language, but into several words as أورمي مينائي نخامي, as well as for the term Vena retrommandibularis, translated into Arabic as الوريد خلف الفك السفلي because the English language tends to add affixes whether prefixes or suffixes to the original word in order to harmonize its use and reach the accurate meaning.

Gender

It is known that gender is an essential characteristic of the Arabic language, as all nouns can be distinguished in terms of masculine and feminine. The term pontic is translated into Arabic noun as الجاسرة , while English does not have this distinction. We also find that the term dentist translates into Arabic as: طبيب أسنان or طبيبة أسنان.

CHAPTER THREE

Practical Part

Introduction

The Corpus

The Corpus Analysis

Translation strategies employed

Discussion of results

Conclusion

Introduction

This chapter is the practical part of the study; it discussed the most used Strategies when translating dentistry terms from English into Arabic, where it starts with analyzing and discussing 50 entries in dentistry taken from dictionary of dentistry. And it conducts a comparative analysis between ST and TT ,then mentioning the techniques used to translate English dentistry terms into Arabic ;so, that we know the prevailing techniques used in translating medical terms, especially dentistry terms.

The corpus

دليل الترجمة الطبية و المصطلحات الطبية الجزء الثاني

This edition is the first edition of this book, which was published in 2009 in Amman, Jordan by (مكتبة المجتمع العربي للنشر و التوزيع) the Arab Community Library for Publishing and Distribution. First, this book consists of a dictionary of Dentistry terms. Then it moves on to the most commonly used abbreviations in medicine and then provides definitions of some dentistry terms ,and it mentions some medical examinations and the names of some diseases. Then it provides on to the aspect of translation and its modalities. In addition, the book provided a definition of the translator and it mentioned the translators' qualifications and responsibilities and what tools they use during translation and what makes translation good as well as explains the kinds of translation and levels of language analysis and it provides some difficulties that the translator can encounter during the translation. Finally, the book mentions translation techniques with some examples of grammatical transformations that occurred during translation.

دليل الترجمة الطبية و المصطلحات الطبية الجزء الثاني is available on University library and on the Internet , and it carries a huge number of medical terms and translation issues.

The research Method

This chapter contains data collected from English dentistry glossary from دليل المصطلحات الطبية published by the Arab community Library for Publishing and Distribution in Amman, Jordan.

The data of the current study consists of 50 English Dentistry terms translated into Arabic. This research adopted a mixed analysis methods qualitative and quantitative in addition to comparative analysis, as the latter aims to compare Dentistry entries in SL

with its equivalent in TL, and analyze the translation techniques adopted during the translation of Dentistry terms from English into Arabic.

Corpus Analysis

This analysis undergoes a comparative study of the translation of some Dentistry terms between SL and TL, in order to investigate the translation strategies used in

الطبية from English into Arabic. دليل الترجمة الطبية و المصطلحات الطبية

The following table: ** includes 50 English Dentistry terms adapted from a Dentistry glossary (دودين, 2009) and its translation into Arabic to clarify the process of transferring the English Dentistry Terms from English (SL) into Arabic (TL) and to illustrate the most used translation procedures.

Table 3

Translation of English Dentistry Terms into Arabic

N°	English Dentistry Term	Arabic Dentistry Term
01	Milk teeth	الأسنان اللبنية
02	Acute Necrotizing Ulcerative Gingivitis(ANUG)	التهاب اللثة التقرحي الناخر الحاد
03	Tooth socket	سِنْحُ السِّن
04	Fused teeth	أسنان مدمجة
05	Abnormal occlusion (mal occlusion)	إطباق شاذ (سوء الإطباق)
06	Nitrous oxide	أكسيد النيتروز
07	Clinical crown	تاج سريري
08	Dilantin gingivitis	التهاب اللثة بالديلاننتين
09	Canker sores	أفة التقرُّح
10	Amalgam(AAA)	ملغم [أسنان]
11	Base plate	صفحة قاعدية [أسنان]
12	Enamel	الميناء
13	Dental pulp (Pulpadentis)	لُبُّ الأسنان

14	Superior Labial Vein(SLV)	الوريد الشفوي العلوي
15	Supernumerary teeth	أسنان زائدة
16	Cuspless teeth	أسنان عديمة الحدبات
17	Eruption cyst	كيس البزوغ [أسنان]
18	Air abrasion	كشط الهواء
19	Overbite	تراكب العضة
20	Alveolar process	عملية سنخية
21	Endodontics	اللبنية
22	Pulpectomy	إستئصال اللب
23	Activator appliance	طبقة مُفعلة [تقويم]
24	Wisdom tooth	سن العقل /ناجدة أو النواجذ
25	Interdental splint	جبيرة بين الأسنان
26	Stomatitis	التهاب الفم
27	Craniophayngioma	ورم قحفي بلعومي (ورم أرومي مينائي نخامي)
28	Aglossia	إنعدام اللسان
29	Glossitis	التهاب اللسان
30	Agnathia	إنعدام الفك
31	Anaplastic	غياب التمايز في الخلايا السرطانية
32	Pyrexia	الحمى
33	Hypersensitivity	فرط الحساسية
34	Halitosis	البُخُرُ الفموي
35	Pontic	الجاسرة
36	Prosthodontics	التركيبات
37	Tartar	تتاري (تكلس)
38	Toothache	وجع الأسنان
39	Idiopathic gingivitis	التهاب اللثة المجهول السبب

40	Bicuspid teeth	أسنان ثنائية الشرف (الضواحك)
41	Deep Facial Vein(DFV)	الوريد الوجهي العميق
42	Acrylic Resin Dental Cement (ARDC)	ملاط راتيني أكريلكي سيني
43	Temporomandibular Joint(TMJ)	إضطرابات المفصل الفكي الصدغي
44	Acute Purulent Pulp	لَب قِيحِي حَاد
45	Schiffedercker's disks	أقراص شيفرديكر في الليف العصبي
46	Subtemporal decompression	تخفيف الضغط تحت الصدغي
47	Acute Ulcerative Stomatitis	إلتهاب الفم التقرحي الحاد
48	Hutchinson teeth	أسنان هنتشنسون
49	Metopic Point(glabella)	المِقْطَب
50	Diabetic gingivitis	إلتهاب اللثة السُكري

The Form of Medical Term

Medical terms can be divided according to their form in two categories simple and compound words. The tables under classified the simple and the compound forms of dentistry terms in order to know the percentage of employed terms in dentistry glossary.

Table4

Simple Dentistry Terms Form

Simple word	The structure of the term	Percentage%
Amalgam	N	
Enamel	N	
Overbite	N	
Endodontics	N	
Pulpectomy	N	
Stomatitis	N	
Aglossia	N	

Pyrexia	N	34%
Anaplastic	Adj	
Glossitis	N	
craniopharyngioma	N	
Pontic	N	
Tartar	N	
Toothache	N	
Halitosis	N	
Hypersensitivity	N	
Prosthodontics	N	

Table 5

Compound Dentistry Terms Form

Compound word	The structure of the term	percentage%
Bicuspid teeth	N +N	66%
Deep Facial Vein(DFV)	Adj+Adj+N	
Acrylic Resin Dental Cement (ARDC)	Adj+N+Adj+N	
Temporomandibular Joint(TMJ) syndrome	Adj+N	
Acute Purulent Pulp	Adj+Adj+N	
Schifferdecker's disks	N+N	
Metopic point(glabella)	N+N	
Acute ulcerative stomatitis	Adj+Adj+N	
Milk teeth	N+N	
Subtemporal decompression	Adj+N	
Hutchinson teeth	N+N	

Metopic point (glabella)	Adj+N	
Diabetic gingivitis	Adj+N	
Acute Necrotizing Ulcerative Gingivitis (ANUG)	Adj+Adj+Adj+N	
Tooth socket	N+N	
Fused teeth	Adj+N	
Abnormal occlusion(malocclusion)	Adj+N	
Nitrous oxide	N+N	
Clinical crown	Adj+N	
Dilantin gingivitis	N+N	
Canker sores	N+N	
Base plate	Adj+N	
Dental pulp(pulpadentis)	Adj+N	
Superior Labial Vein	Adj+Adj+N	
Supernumerary teeth	Adj+N	
Cuspless teeth	N+N	
Eruption cyst	N+N	
Air abrasion	N+N	
Dentine exposure	N+N	
Activator appliance	N+N	
Wisdom tooth	N+N	
Interdental splint	Adj+N	
Idiopathic gingivitis	Adj+N	

We can observe from the two above tables that Seventeen (17) Dentistry terms are simple words 34% and most of simple words are Nouns .However , there are Thirty

Three (33) Dentistry terms that look the form of compound words presented in 66% particularly the structure of N+N and Adj+N.

The Analysis of Dentistry Terms

The following tables show the translation of Dentistry terms from English into Arabic and the procedure used in the translation.

Sample 1

The English term	The Arabic term	The procedure used
Milk teeth	أسنان لبنية	Calque

Milk teeth

They are any of the twenty (20) teeth that make up the primary dentition, which are shed and replaced by the permanent teeth. They erupt between 6-24 months of life.

Synonyms: { baby teeth, deciduous, primary teeth }

The term is translated by using the procedure of Calque through domestication method . It is transferred semantically and formally as it is in the TL. The noun (Milk) in the English language is translated into an adjective لبنية in the Arabic language, a changing on the grammatical level; in which it took the form of a feminine noun to go with the Arabic grammatical gender agreement of the noun being used أسنان. And for the noun 'teeth' in the English language is translated into a noun أسنان in the Arabic language. We can notice from the above table the following changes that happened in the transference of the English dentistry term into Arabic:

English structure: (N + N) → Arabic structure: (N + adj)

Sample 2

The English term	The Arabic term	The procedure used
Acute Necrotizing ulcerative gingivitis	التهاب اللثة التقرحي الناخر	paraphrase

Acute Necrotizing ulcerative gingivitis (ANUG)

An acute or recurrent gingivitis of young and middle -age adults characterized clinically by gingival erythema and pain, fetid odor, necrosis, and sloughing of interdental papillae and marginal gingiva that gives rise to a gray pseudomembrane ; fever, regional lymphadenopathy, and other systemic manifestations also may be present.

The term is translated by using paraphrase procedure. It is transferred without any changes happened on the level of meaning, however there is a change at the structure level in the word 'gingivitis'. The first word in this English Medical term is the adjective 'acute' that translated to an adjective in the Arabic language حاد. Another adjective 'necrotizing', which translated to an adjective ناخر in Arabic. The same thing with the adjective 'ulcerative' that is transferred into an adjective تقرحي in Arabic. However, the noun 'gingivitis' in the English language translated into two (2) word in Arabic, the root gingiva means اللثة in Arabic language; and the suffix 'tis' means inflammation, and which translated to the word التهاب in Arabic.

English structure (Adj + adj + adj + N) → Arabic structure: (N + N + Adj + Adj + Adj)

Sample 3

The English term	The Arabic term	The procedure used
Tooth socket	سنخ السن	Calque

Tooth socket

It is an opening (socket) in the alveolar process of the maxilla. Or mandible, into which each tooth fits and is suspended by means of the periodontal ligament.

This term is translated via literal translation procedure. There is no changes on the level of meaning and structure of the Arabic language. The noun 'tooth' in the source language is translated to a noun سن in the target language. And the same thing for the noun 'socket' in the SL is translated to a noun سنخ in the TL.

English structure (N + N) → Arabic structure (N + N)

Sample 4

The English term	The Arabic term	The procedure used
Fused teeth	أسنان مندمجة	Calque

Fused teeth

They are teeth joined by dentin as a result of embryologic fusion or juxtaposition of two (2) adjacent tooth germs.

This term is translated via Calque procedure. It is translated semantically and formally as it is in the target language. The adjective 'fused' in the SL is transferred into an adjective مندمجة in the TL, in which it took the form of feminine noun to go with the

Arabic grammatical gender agreement of the noun being used أسنان. Also, the noun teeth in the SL is transferred into a noun أسنان in the TL .

English structure(Adj + N) → Arabic structure(N + Adj)

Sample 5

The English term	The Arabic term	The procedure used
Abnormal occlusion(malocclusion)	اطباق شاذ	Calque

Abnormal occlusion:

It is an arrangement of the teeth that is not considered to be within the normal range of variation. Synonym: Abnormal occlusal relationship.

The procedure used in the translation of this term is Calque. The structure has been maintained in the TL, and the meaning is transferred as it is in Arabic language. The adjective ' Abnormal ', which is divided into two(2) parts the prefix ' ab's and the adjective 'normal' to give the opposite meaning of 'normal'; and the noun 'occlusion' in the SL is transferred into a noun in the Arabic language .

English structure(Adj + N) → Arabic structure(N + Adj)

Sample 6

The English term	The Arabic term	The procedure used
Nitrous oxide(laughing gas)	أكسيد النيتروز	Calque

Nitrous oxide: (laughing gas)

It is a gas used as an anesthetic in dentistry and other medical procedures. It is a colorless, odorless gas that is a weak inhalational anesthetic, usually used in combination with a potent halogenated inhalational anesthetic to produce general anesthesia or briefly for dental surgery. Its use as a sole agent requires high concentrations that may cause Hypoxia. Abuse poses the risk of anoxia death from Asphyxia. Popularly knows as laughing gas.

This term is translated by using the procedure of Calque. There is no changes in the meaning or the structure, in which it transferred as it is in the TL. The noun 'Nitrous' in the English language transferred into a noun نيتروز in the Arabic language. Also the

second part of this term, which is the noun 'Oxide' is translated into a noun أكسيد in the TL.

The English structure(N + N) → The Arabic structure:(N + N)

Sample7

The English term	The Arabic term	The procedure used
Clinical crown	تاج سريري	Calque

Clinical crown

That portion of the anatomic crown of a tooth that is covered with enamel and visible in the oral cavity.

Synonym: (corona clinical).

This term translated via the procedure of Calque. The translator maintains the structure and the meaning of the source language. The adjective 'clinical' in the SL transferred into an adjective سريري in the TL, and the noun 'crown' in the SL translated into a noun تاج in the TL.

The English structure(Adj + N) → The Arabic structure(N + Adj)

Sample 8

The English term	The Arabic term	The procedure used
Dilantin gingivitis	التهاب اللثة بالديلانتين	Paraphrase

Dilantin gingivitis

It is the generalized hyperplasia of the gingiva, which may also rarely involve other areas of the oral mucosa, resulting in overgrowth of the fibrous tissue from the interaction of plaque accumulation with the anticonvulsive agent Dilantin (phenytoin).

The procedure used in translating this term is paraphrase. The translator maintains the meaning and the structure of the source language. The noun 'dilantin' in the English language transferred into a noun ديلانتين in the Arabic language; however, the second part of this term is translated into two (2) words التهاب اللثة in Arabic language, in which the noun 'gingiva' means اللثة in the TL, and the suffix 'tis' means التهاب in the TL.

The English structure(N + N) → The Arabic structure(N + N + pre + N)

Sample 9

The English term	The Arabic term	The procedure used
Canker sores	آفة التقرح	Calque

Canker sores:

They are small white or yellowish sores or ulcers that develop inside the mouth. They are painful, self-healing, and can recur. Synonyms: (aphthae minor, aphthous stomatitis, recurrent aphthous stomatitis, recurrent aphthous ulcers, recurrent ulcerative stomatitis, ulcerative stomatitis).

This term translated by using the procedure of Calque. It is translated formally and semantically as it is in the TL. the noun ‘canker’ in the SL translated into a noun آفة in the TL. Also, the noun ‘sores’ that takes the plural form while the Arabic translation تقرح is taking the singular from in the TL, and it is translated into a noun in the TL تقرح.

The English Structure(N + N) → The Arabic structure(N + N)

Sample10

The English term	The Arabic term	The procedures used
Amalgam(AAA)	ملغم (أسنان)	Borrowing(Partial borrowing)/Linguistic adaptation

Amalgam (AAA)

It is a combination of metals, usually including silver, nickel and mercury used to filled cavities in teeth.

This term is translated via the partial borrowing procedure . The translator transferred this term as it is in TL without any changes on the level of meaning or structure. The English language term ‘Amalgam’ is translated through transferring the English language letters sounds into the Arabic language letters that have similar sounds and pronunciation. In addition , it is translated via the linguistic adaptation technique if we add in Arabic definit article ال in which it becomes adopted in the Arabic language morphology.

Amalgam (AAA):

The English structure(Noun) → The Arabic structure(Noun)

Sample11

The English term	The Arabic term	The procedure used
Based plate	صفحة قاعدية (أسنان)	Calque

Base plate

A temporary form representing the base of a denture; used for making maxillomandibular (jaw) relation records or for arranging artificial trial placement in the mouth to ensure exact of a denture. A temporary foundation for establishing relationships between the mandible and maxilla and teeth, which is used to construct dentures.

This term is translated via the procedure of Calque. It is translated formally and semantically in the source language. The noun 'base' in the SL is transferred into an adjective قاعدية in the TL, in which it took the form of feminine noun to go with the Arabic grammatical gender of the noun 'صفحة' in Arabic. The other part of this term which is the noun 'plate' in the SL is transferred into a noun صفحية in the TL.

The English structure (N + N) → The Arabic structure (N + Adj)

Sample 12

The English term	The Arabic term	The procedure used
Enamel	الميناء	Literal translation

Enamel

It is the hard whit outer covering of the tooth. It is also the white, compact, and very hard substance covering and protecting the dentin of the crown of a tooth.

This term is translated by using the procedure of literal translation. It is translated as it is in the TL formally and semantically. The noun 'Enamel' in the source language is translated into a noun الميناء in Arabic language.

The English Structure (Noun) → The Arabic structure (Noun)

Sample 13

The English term	The Arabic term	The procedure used
Dental pulp (pulpadentis)	لب الأسنان	Calque

Dental pulp (pulpadentis)

It is the richly vascularized and innervated connective tissue inside the pulp cavity of a tooth.

The above term is translated via the procedure of Calque. It is transferred as it is in the TL formally and semantically. The adjective 'dental' in SL is translated into a noun الأسنان in the TL, and the noun in the SL is transferred into a noun لب in the TL.

The English structure(Adj + N) → The Arabic structure(N + N)

Sample14

The English term	The Arabic term	The procedure used
Superior labial vein	الوريد الشفوي العلوي	Literal translation

Superior labial vein

It is the vein receiving blood from the upper lip.

This term translated by using the procedure of literal translation. It is translated formally and semantically as it is in the TL. The adjective 'superior' in the SL transferred into an adjective العلوي in the TL; however, and the noun 'labial' in the SL is translated into an adjective الشفوي in the TL. For the noun 'vein' in the SL is transferred into a noun الوريد in the TL.

The English structure(Adj + N + N) → The Arabic structure(N + Adj + Adj)

Sample15

The English term	The Arabic term	The procedure used
Supernumerary teeth	أسنان زائدة	Calque

Supernumerary teeth

It is any tooth in excess of (32); form may be normal or abnormal and may line inside or outside normal line of dental arch.

Synonym: supplemental tooth.

This term translated by using the procedure of Calque. It is transferred formally and semantically in the TL. The adjective 'supernumerary' in the SL is translated into an adjective زائدة in the TL, and the noun 'teeth' in the SL is translated into a noun in the TL.

The English structure(Adj + N) → The Arabic structure(N + Adj)

Sample16

The English term	The Arabic term	The procedure use
Cuspless teeth	أسنان عديمة الحدبات	paraphrase

Cuspless teeth

They are devoid of Cusp formation; severe abrasion of an occlusal surface; they are a type of artificial denture tooth.

This term translated via the procedure of paraphrase. The noun 'cuspless' in the SL, which is comprised of two (2) parts, the first one is the root 'cusp' that is translated into the noun الحدبات in the TL taking the plural form. And for the second part is the suffix 'less' to express the negativity, it is translated into the adjective عديمة in the TL. It took the form of a feminine noun to go with the Arabic grammatical gender agreement of the noun being used أسنان. And the noun 'teeth' in the English language is transferred into a noun أسنان in the Arabic language.

The English structure(N + N) → The Arabic structure(N + Adj + N)

The term in the Arabic language is three (3) words Vstwo(2) words in English language.

Sample17

The English term	The Arabic term	The procedure used
Eruption cyst	كيس البزوغ(أسنان)	Calque

Eruption cyst

It is a form of dentigerous cyst in the soft tissues in the conjunction with an erupting tooth; seen on the alveolar ridge of children

The procedure used to translate this term is Calque. The translator maintains the meaning and the structure of the SL. The noun 'eruption' in the SL is translated into a noun البزوغ in the TL, and the noun 'cyst' is translated into a noun كيس in the TL.

The English structure(N + N) → The Arabic structure(N + N)

Sample18

The English term	The Arabic term	The procedure used
Air abrasion	كشط الهواء	Calque

Air Abrasion

It is to use abrasive particles such as aluminum oxide under high pressure to abrade and sometimes remove dentin and enamel.

Synonym: (air pointing)

This term is translated via the procedure of Calque. It is translated as it is formally and semantically in the TL. The noun 'air' in the SL is transferred into a noun الهواء in the TL, and the noun 'abrasion' in the English language is translated into a noun كشط in the Arabic language.

The English structure(N + N) → The Arabic structure(N + N)

Sample19

The English term	The Arabic term	The procedure used
Overbite	تراكب العضة	paraphrase

Overbite

It is a malocclusion of the teeth in which the front upper incisor and canine teeth project over the lower.

This term is translated by using the procedure of paraphrase. The term 'overbite' in the English language comprises of two (2) parties, the first part is the preposition 'over' in the SL that is transferred into a noun تراكب in the TL; the second part is the noun 'bite' in the English language that is transferred into a noun عضة in the Arabic language. Therefore, one word in the English language Vs two (2) words in the Arabic language translated term.

The English structure(Noun) → The Arabic structure(N + N)

Sample20

The English term	The Arabic term	The procedure used
Alveolar process	عملية سنخية	Calque

Alveolar process

It is the part of the bone in either the maxilla or mandible that surrounds and supports the teeth.

This term is translated via the procedure of Calque. It is translated formally and semantically in the TL. The noun 'alveolar' in the SL is translated into an adjective سنخية in TL, in which it took the form of a feminine noun to go with the Arabic grammatical

gender agreement of the noun being used عملية. Also, the noun 'process' in the SL is translated into a noun عملية in the TL.

The English structure(N + N) → The Arabic structure(Adj + N)

Sample21

The English term	The Arabic term	The procedure used
Endodontics	الليبية (علاج جذور الأسنان)	Literal translation

Endodontics

It is an area of dentistry that deals with the diagnosis, prevention and treatment of diseases of the dental pulp and the tissue at the root apex.

This term is translated via the procedure of literal translation.

The translator maintains the meaning and structure of the TL.

The noun 'endodontics' in the English language is transferred into a noun الليبية in the Arabic language .

The English language structure(Noun) → The Arabic structure(Noun)

Sample 22

The English term	The Arabic term	The procedure used
Pulpectomy	استئصال اللب	Paraphrase

Pulpectomy

It is the complete removal of the tooth's pulp.

This term is translated via the procedure of paraphrase. The noun 'pulpectomy' in the SL is transferred into two (2) words in the Arabic language إستئصال اللب. Thus, the Arabic language term structured of two (2) words Vs one word y the English language term.

The English language structure(Noun) → The Arabic structure (Noun)

Sample23

The English term	The Arabic term	The procedure used
Activator appliance	طبقيّة مفعلة (تقويم)	Calque

Activator appliance

It is a loose- fitting removable orthodontic appliances which redirect the pressures of the facial and masticatory muscles onto the teeth and their supporting structures to produce improvements in the tooth arrangements and occlusal relations.

This term is translated by using the procedure of Calque.

It is Translated formally and semantically as it is in the TL.

The noun 'activator' in SL is translated into a an adjective مُفَعِّلَة in the TL, in which it took the form of a feminine noun to go with the Arabic grammatical gender agreement of the noun being used طريقة; and the noun 'appliance' in the SL is transferred into a noun طريقة in the TL .

The English structure:(N + N) → The Arabic structure (N + Adj)

Sample24

The English term	The Arabic term	The procure used
Wisdom tooth	سن العقل(الناجذة أو النواجذ)	Calque

Wisdom tooth

It is one of four rearmost molars on each side of the upper and lower jaw in humans. Wisdom teeth are the last teeth to erupt, typically in early adulthood.

This term is translated via the procedure of Calque. It is transferred formally and semantically as it is in the TL. The noun 'wisdom' in the SL is translated into a noun العقل in the TL, and the noun 'tooth' in the SL is translated into a noun سن in the TL.

The English structure:(N + N) → The Arabic structure(N + N)

Sample25

The English term	The Arabic term	The procedure used
Interdental splint	جبيرة بين الأسنان	Paraphrase

Interdental splint

It is a rigid or flexible device or compound used to support, protect, or immobilize teeth that have been loosened, replanted, fractured, or subjected to surgical procedures.

This term is translated via the procedure of paraphrase to express the meaning. The adjective 'interdental' in the English language, which is comprised of two (2) parts; the first part is the prefix 'inter', and the second part is the adjective 'dental' in one word the adjective 'interdental'. It is translated into two (2) words in the Arabic language, the first one is the preposition بين , and the second one is the noun الأسنان. The noun 'splint' in the SL is translated into a noun جبيرة in the TL.

The English language structure:(Adj + N) → The Arabic language structure

(N + pre + N)

Sample 26

English Term	Arabic Term	Procedure of translation
Stomatitis	التهاب الفم	paraphrase

Stomatitis

This term denotes the inflammation of the mucosa of the lining of mouth, gums , or tongue ; it may be caused by numerous diseases of the mouth , or it may accompany another disease. It is translated into Arabic by using the procedure of Paraphrase ,the original prefix is Stomatous /Stomiabut in this case the term Stoma has been associated with the suffix, which begins with a vowel , Stoma translated into Arabic noun الفم, the suffix itis translated into Arabic adjective لاحقة بمعنى التهاب.

The structure in Arabic gains TwoVS One term in English in order to reach the accurate equivalent, and preserve the meaning of the original text.

Sample 27

English Term	Arabic Term	Procedure of translation
Craniopharyngioma	ورم قحفي بلعومي	paraphrase

Craniopharyngioma

It is a tumor arising from cell ; it is near the pituitary gland in the caraniopharyngeal canal that often results in intracranial pressure and destroying the gland and causing deficits of the pituitary hormones¹. The term is divided into three parts:

¹The pituitary gland is an endocrinal gland products hormones such as GnRH , LH , FSH

Crani(o) +pharyngi(o) + oma \Rightarrow word root (o) + word root (o) + suffix

It is translated via the procedure of paraphrase to express the meaning of the word Cranio : coumbining form, is the first word root ,Craniis a Noun denoting the skull ,it translated into Arabic adjective قحفي,pharyngio is a coumbining form;Pharyngi denoting the pharynx البلعوم which translated into Arabic adjective بلعومي , oma is combining form denoting a tumour لاحقة بمعنى ورم .

The structure in Arabic gains Three VS One terms in English which actually represents a gain at terminology level.

Sample 28

English Term	Arabic Term	Procedure of translation
Aglossia	إنعدام اللسان	paraphrase

Aglossia

It is a noun defined as the congenital absence of the tongue. This term is translated via the procedure of paraphrase to express the meaning of the word .It divided into two parts ; A + Glossia \Rightarrow +Word root , the prefix A translated into Arabic adjective انعدام and Glossia translated as اللسان,in this case the structure in Arabic is the same in English N VS N.

Sample 29

English Term	Arabic Term	Procedure of translation
Glossitis	التهاب اللسان	paraphrase

Glossitis

It is the Inflammation of the tongue. Glossitis is characterized by swelling and a smooth appearance with possible tenderness and impaired speech, swallowing , and mastication . It can be causes by an anaemia, candidiasis, and vitamin deficiency.

This Dentistry Term gains One term in English translated into two terms into Arabic, the basic elements of this term are :

Gloss+ itis \Rightarrow Word root + suffix \Rightarrow the noun Gloss translated into Arabic noun اللسان without changing the structure or the grammatical level of the term in the ST , the suffix itis translated into Arabic adjective لاحقة بمعنى التهاب .

Sample 30

English Term	Arabic Term	Procedure of translation
Agnathia	إنعدام الفك	paraphrase

Agnathia

This term devoted to the total failure of development of the mandible or maxilla. It defined as a complete or virtual absence of mandible. Also, it considered as a congenital disease and all cases of agnathia that occur at birth are due to mutations and usually accompanied by approximation of the ears.

Agnathia \Rightarrow A + gnathia \Rightarrow Prefix + word root , A is a prefix translated into Arabic adjective بادئة بمعنى غياب و إنعدام as it mentioned previously, gnathia translated into Arabic noun الفك .

Sample 31

English Term	Arabic Term	Procedure of translation
Anaplastic	غياب التمايز في الخلايا السرطانية	paraphrase

Anaplastic

It is an English dentistry term which denoting the loss of normal cell differentiation or characteristics. It is a characteristic of rapidly growing of malignant cells .Anaplastic can be translated into Arabic via Transliteration as a noun أنابلاستيك or via Paraphrase procedure, anaplasia \Rightarrow asia , ana إنعدام أو غياب , بادئة بمعنى غياب أو إنعدام , plasias is a combining form denoting formation , development and growth ; it translated into Three terms in Arabic تمايز الخلايا السرطانية.

Sample 32

English Term	Arabic Term	Procedure of translation
Pyrexia	الحمى	Literal translation

Pyrexia

Pyrexia is a fever which denoting the increase of body temperature above the normal oral temperature of 37°C² or rectal temperature of 37.2°C . This value is higher in children and lower in the elderly. It is usually caused by bacterial or viral infection and is generally associated with shivering, headache, nausea , constipation, or diarrhoea .This term is a noun translated into Arabic noun الحمى. So, the structure in Arabic is the same in English.

Sample 33

English Term	Arabic Term	Procedure of translation
Hypersensitivity	فرط الحساسية	paraphrase

Hypersensitivity

It is a state of altered reactivity in which the body reacts with an exaggerated immune response to a foreign agent.

Hypersensitivity \Rightarrow Hyper + sensitivity \Rightarrow Prefix + Word root , hyper translated into Arabic adjective فرط ,and sensitivity translated into Arabic noun الحساسية . So ,the structure in Arabic gains Two VS One term in English in order to reach the accurate equivalent, and preserve the meaning of ST.

Sample 34

English Term	Arabic Term	Procedure of translation
Halitosis	البُخْرُ الفموي	paraphrase

Halitosis

It is also called the bad breath that meant an unpleasant odor from the mouth . It is a term coined from the Latin **halitus** (breath) and Greek **osis**(pathological process).Halitosis is caused by tooth gum disease, digestive problems, smoking or some systemic diseases³.This term is translated into Arabic by the procedure of paraphrase

² Celsius is a unit of temperature denoted by °C, the normal temperature of the body is 37°C .

³ Systemic diseases (أمراض جهازية) : are health conditions affecting one or more of the body's systems; to include the respiratory immunological , neurological, circulatory , or digestive systems.

as البُحْر الفَمَوِي , the structure was changed from a noun in English to a noun + adjective in Arabic.

Sample 35

English Term	Arabic Term	Procedure of translation
Pontic	الجاسرة	Literal translation

Pontic

It is denoting The artificial tooth of the fixed bridge that replaces natural tooth .Pontic in an English Dentistry Term (noun) translated into Arabic noun الجاسرة by literal translation procedure without changing on the structure level of the term .

Sample 36

English Term	Arabic Term	Procedure of translation
Prosthodontics	التركيبات (مُعَالَجَةُ سِنِّيَّةٍ تَعْوِضِيَّةٍ)	Literal translation

Prosthodontics

It is also called dental prosthetics, which considered as a branch of dentistry that deals with replacement of damage or missing teeth. This term translated literally into Arabic noun التركيبات (مُعَالَجَةُ سِنِّيَّةٍ تَعْوِضِيَّةٍ) without changing the structure or the grammatical level of the term in the ST .

Sample 37

English Term	Arabic Term	Procedure of translation
Tartar	تتاري (تكلس)	Borrowing

Tartar

Is a salivary deposit of calcium phosphate , calcium carbonate , and organic matter on natural or artificial teeth .The term of Tartar translated into Arabic via the procedure of Borrowing as it is in English as تتاري which meant تكلس , it gains same meaning and structure of word.

Sample 38

English Term	Arabic Term	Procedure of translation
Toothache(dentalgia)	وجع السن	paraphrase

Toothache

Also known in dentistry as odontodynia and dentalgia ;It is a pain associated with a tooth or its surrounding supporting structures. Common causes of toothache include pulpitis⁴, an acute abscess associated with a tooth root , and acute inflammation of the bone or soft tissue surrounding the mouth .

The term translated into Arabic via the procedure of paraphrase . Toothache is English simple term divided into two words \Rightarrow Tooth + ache \Rightarrow Word root + suffix
Tooth is an English noun translated into Arabic noun السن, ache translated into Arabic as وجع . Thus ,the grammatical level was changed One noun in English VS Two words in Arabic .

Sample 39

English Term	Arabic Term	Procedure of translation
Idiopathic gingivitis	التهاب اللثة المجهول السبب	Paraphrase

Idiopathic gingivitis

It is the inflammation of Gums of unknown causes . It is a rare disease characterized by the slowly progressive enlargement of maxillary and mandibular gums that may result from the effects of some other diseases.This term is an open compound words translated into Arabic by the procedure of paraphrase ,the English adjective Idiopathic translated into Arabic as المجهول السبب , the noun Gingivitis translated into Arabic as التهاب اللثة.

Sample 40

English Term	Arabic Term	Procedure of translation
Bicuspidteeth	أسنان ثنائية الشرف (الضواحك)	paraphrase

⁴ Pulpitis is the inflammation of the pulp , it translated into Arabic as التهاب اللب .

Bicuspids

A premolar tooth so named because it usually has two cusps. The adult dentition has eight bicuspids situated between the canines and molar teeth. They replace the primary first and second molars .The term is translated via the procedure of paraphrase to express the meaning of the word from SL into TL .

Bicuspids is a closed compound words \Rightarrow Bi+cuspid \Rightarrow ثنائية \Rightarrow Two cups ثنائية الشرف , and teeth is translated into Arabic noun أسنان .

Sample 41

English Term	Arabic Term	Procedure of translation
DFV (Deep Facial Vein)	الوريد الوجهي العميق	Literal translation

Deep Facial Vein (DFV)

Also called the retromandibular vein , it is located behind the external maxillary artery (face) so that it is a continuation of the angular vein that drains most of the facial structures. The term is translated literally without changing the meaning or the structure of the SL , two adjectives translated into two Arabic adjectives Deep عميق , Facial الوجهي , the noun Vein translated into Arabic noun الوريد .

Sample 42

English Term	Arabic Term	Procedure of translation
ARDC (Acrylic Resin Dental Cement)	ملاط راتيني أكريليكي سني	Literal translation

Acrylic Resin Dental Cement (ARDC)

It is used for securing joint components to bone .It can be preformed or mouldable.

The body response in this case is minimal .ARDC is used for dental prostheses and it does not biodegrade or become replaced by functional and artificial teeth.

The term translated into Arabic Literally and each word in the SL has its equivalent in the TL . Acrylic translated into Arabic adjective أكريليكي ,the noun Resin translated into Arabic adjective راتيني , the adjective Dental translated in Arabic adjective سني the noun Cement translated into Arabic noun ملاط with the changing in the structure as in English :Adj +N+Adj+N N+ Adj + Adj +Adj in Arabic .



Sample 43

English Term	Arabic Term	Procedure of translation
TMJ(Temporomandibular Joint) syndrome	اضطرابات المفصل الفكي الصدغي	paraphrase

Temporomandibular joint (TMJ)

A synovial joint that allows the complex movements necessary for life. It is the joint between condylar head of the mandible and the mandibular fossa of the temporal bone. This system is made up of the TMJ, teeth and soft tissue and it plays a role in breathing, eating and speech (RP, 1998).

This term translated into Arabic via the procedure of paraphrase. Temporomandibular is a closed compound words which are Temporo denoting the temporal bone + mandibular denoting the mandible ,Temporo is translated into Arabic adjective الصدغي and the noun mandibular translated into Arabic adjective الفكي , joint translated into Arabic noun المفصل.

Sample 44

English Term	Arabic Term	Procedure of translation
APP(Acute Purulent Pulp)	لب قيحي حاد	Literal translation

Acute purulent Pulp (APP)

It is an inflammatory lesion of the pulp and soft tissues located in the tooth cavity. Since this disease is caused by an infection that leads to purulent inflammation at the pulp and is often accompanied by acute pain. The term is translated literally without changing the meaning or the structure of the source language the two adjectives Acute and Purulent are translated into Arabic adjectives حاد and قيحي , the noun Pulp is translated into Arabic noun لب.

Sample 45

English Term	Arabic Term	Procedure of translation
Schiffedercker's disks	أقراص شيفر ديكر (في الليف العصبي)	transliteration

Schiffedercker's disks

They are disks used in Dentistry treatment at the level of neurofiber. The term is translated via the procedure of Transliteration. Schifferdecker's disks is a compound word, the first part Schifferdecker's transferring as شيفر ديكر which refers the scientist who was discovered those disks which translated into Arabic as [أقراص العصبية] أقراص.

Sample 46

English Term	Arabic Term	Procedure of translation
Subtemporal decompression	تخفيف الضغط تحت الصدغي	Paraphrase

Subtemporal decompression

Is recognized as an treatment for slit ventricle syndrome, it is a relief of intracranial pressure by removing part of the temporal bone. Subtemporal decompression is a compound words translated into Arabic by the procedure of paraphrase, sub translated into Arabic as تحت, the English adjective temporal translated into Arabic adjective الصدغي, decompression translated into تخفيف الضغط.

Sample 47

English Term	Arabic Term	Procedure of translation
Acute ulcerative stomatitis	إلتهاب الفم التقرحي الحاد	paraphrase

Acute ulcerative stomatitis

It is an acute painful gingivitis with ulceration, in which the tissues of the gums are rapidly destroyed. Occurring mainly in debilitated patients, it is associated with anaerobic microorganisms (Fusobacterium ;Bacteroides) and is accompanied by an unpleasant odour. This term translated into Arabic via paraphrase procedure to express the meaning of the words, Acute translated into Arabic adjective الحاد, ulcerative إلتهاب الفم التقرحي, stomatitis.

Sample 48

English Term	Arabic Term	Procedure of translation
Hutchinson teeth	أسنان هتشينسون (في الزهري الخلقي)	Transliteration

Hutchinson teeth

It is a sign of congenital syphilis. Hutchinson teeth are abnormal permanent upper central incisors that are peg-shaped and notched, usually with obvious thinning and discoloration of enamel in the area of the notching.

Hutchinson teeth is a open compound words translated into Arabic via the procedure of transliteration as Hutchinson هتشنيسون , teeth أسنان, without changing the meaning or the structure of the source language. Two nouns in English VS Two nouns in Arabic.

Sample 49

English Term	Arabic Term	Procedure of translation
Metopic point (glabella)	المَقْطَب	Literal translation

Metopic point (glabella)

Denoting the area on the frontal bone above the nasion and between the eyebrows .Glabella is a smooth prominence more marked in the male , on the frontal bone above the root of the nose .

The procedure used during the translation of this term is the literal translation without changing the meaning or the structure of SL. The noun Metopic (glabella) is translated into arabic noun المَقْطَب .

Sample 50

English Term	Arabic Term	Procedure of translation
Diabetic gingivitis	إلتهاب اللثة السُّكْرِي	Paraphrase

Diabetic gingivitis

It defined as an inflammation of gums that effects the soft tissue in the mouth . It caused by the increase of the amount of glucose in saliva .

The procedure used during this translation is the paraphrase procedure .Diabetic translated into Arabic as السُّكْرِي , gingivitis إلتهاب اللثة with the preserving the meaning of the SL .

Translation Procedures Employed

This research aims to know and highlight the most adopted procedures by translators during the process of translating English Dentistry terms from English into Arabic, where five translation procedures are adopted:

- Literal translation
- Calque
- Borrowing
- Paraphrase
- Tranliteration

Table 6

The Results of the Translation Procedures of Dentistry Terms

Strategies of Translation	Frequency	Percentage%
Literal Translation	10	20%
Calque	15	30%
Borrowing	2	4%
Paraphrase	21	42%
Transliteration	2	4%

Discussion

Through the study of Fifty (50) Dentistry terms and the results of the table above. It has been noted that the most dominant procedures employed in translating of English Dentistry terms into Arabic are paraphrasing and Literal translation .Paraphrasing ranks first in Dentistry translation as this procedure is used to provide an understandable explanation of the term in the target language. It was presented with 21 terms with a rate of 42%, and it converges with calque procedure by 15 terms with the ratio of 30% as this letter used word for word translation to converting the meaning of SL into TL. Then the literal translation procedure presented by 10 terms as its rate is 20 % which is concerned with the translation of compound words and short expressions mostly .Also Borrowing and Transliteration took places among the procedures employed in translation of Dentistry terms from English into Arabic with a similar rate of 4% of both.

Some Recommendations to deal with the Difficulties Encountered by Translators

- Translation is a difficult art to practice and it combines the branches of source language and target language, and it is not possible to master in translation unless the most important basic conditions are :
- The translator should have a wide culture and be familiar with medical terminology and colloquial dialect of patient's country. So, that he/she convey what the doctor says to patient or vice versa with extreme accuracy.
- The use of monolingual dictionaries (English/English) or (Arabic/Arabic) and bilingual dictionaries (English/Arabic) or (Arabic/English).
- The translator must be honest in transmitting the medical term from English into Arabic.
- The translator should be informed about new updates in the medical field that will facilitate the understanding of new medical terminology and medical translation.
- Propose a neologism for the medical term by placing the required components for the terminology.
- Revival the old Arabic term if it leads to the correct scientific meaning.

Conclusion

This research deals with medical terminology in general, and the main parts of the medical term and its etymology and how it was formulated , and some challenges that translators mayface during the translation of medical terms from English into Arabic especially dentistry terms.

This research also attempt with translation and its procedures, and the problems of the non- equivalence for medical terms. On the other hand, the comparative analysis method used in analyzing the Fifty(50) dentistry entries that was studied in the practical part, and it includes the translation procedures most applied in translating dentistry terms from English into Arabic.The results of this study indicated that most of the dentistry terms were translated through paraphrasing and calque procedures as the main procedures in order to find the accurate equivalent for English dentistry terminology in the Arabic language to facilitate understanding the medical language for doctors, the patients, and his/her relatives alike. The translation in medical field is an important mean of communication ;however ,it is not easy to transfer medical terms from English into Arabic. The translator is surrounded by responsibilities, in which a small error may eliminate his/her professional career, and may make the patient's life in danger. Therefore, translators must know the medical terminology because the integrity of the translation is the safety of the patient.

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Appendix

Appendix

English - Arabic Glossary

مسرد إنكليزي - عربي

The bilingual glossaries below include medical terms relevant to this dissertation

Source language	Target language
Abbreviations	الإختصارات
Acronyms	أوليات
Affixes	الزوائد
Eponyms	مسميات
Polysemy	متعدد المعاني
Prefixes	البوادي/السوابق
Suffixes	اللواحق
Root	الجزر
Combining Form	الصيغ المؤتلفة

Source language	Target language
Borrowing	الإقتراض
Calque	الترجمة بالدخيل
Literal Translation	الترجمة الحرفية
Discovery	الإستكشاف
Neologism	الجدادة
Arabization	التعريب
Derivation	الإشتقاق
Transliteration	الترجمة الإملائية
Revival	الإحياء
Paraphrasing	الشرح المقتضب

Appendix

English Medical abbreviations translated into Arabic

FSH	Follicle stimulating hormone	التهاب المُحرّض للجريب
GFR	Glomerular filtration rate	مُعدّل الرشح الكَبّي
HIV	Human immune deficiency	حمض نقص المناعة
MM	Meyelome Multiple	ورم نقوي مُتعدد (نبيقيون مُتعدد)
HBV	Virus Hepatitis	التهاب الكبد من النوع "ب"

Abstract

This study aims to explore the structure of medical terminology in general and to know the most commonly used procedures in translating dentistry terminology from English into Arabic in order to find answers to the research questions raised below (see the general introduction). It also points out the challenges that may face translators in translating dentistry terms. Moreover, it emphasises some established procedures carried out for facilitating the work of translators. This research adopted a mixed method approach, which is descriptive and exploratory. It used both qualitative and quantitative design, and comparative analysis method. The sample of the study consists of 50 English dictionary entries related to dentistry and their equivalence in Arabic Language. In the analysis, we found out that translators used diverse procedures and techniques to translate dentistry terms from English into Arabic, mainly paraphrasing.

Keywords: Medical terminology, medical translation, dentistry terms, translation procedures.

ملخص

تهدف هذا الدراسة إلى التحقق من بنية المصطلحات الطبية بشكل عام ومعرفة التقنيات الأكثر استخداماً في ترجمة مصطلحات طب الأسنان من اللغة الإنكليزية إلى اللغة العربية من أجل العثور على إجابات لأسئلة البحث المطروحة أدناه (أنظر للمقدمة العامة). يتطرق هذا البحث إلى بعض التحديات التي قد تواجه المترجمين في ترجمة مصطلحات طب الأسنان . وعلاوة على ذلك يتناول بعض التقنيات المعمول بها و بعض التوجيهات التي تُيسرُ عمل المترجمين. إعتد هذا البحث على منهج مختلط بين الوصفي والإستكشافي , بالموازاة مع المنهجين النوعي والكمي ، و التحليل المقارن . تتكون عينات الدراسة من 50 مصطلحاً من القاموس الإنكليزي تتعلق بطب الأسنان وما يعادلها في اللغة العربية. من خلال التحليل المقارن لهذه المصطلحات لُوِجِظَ أنه قد استُخدمت تقنيات متنوعة لترجمة مصطلحات طب الأسنان من اللغة الإنكليزية إلى اللغة العربية، وخاصة إعادة الصياغة .

الكلمات المفتاحية:

المصطلحات الطبية , الترجمة الطبية , مصطلحات طب الأسنان , تقنيات الترجمة

Résumé

Cette étude vise à étudier la structure de la terminologie médicale en général et à connaître les techniques les plus couramment utilisées pour traduire la terminologie dentaire de l'Anglais vers l'Arabe afin de trouver des réponses aux questions de recherche posées ci-dessous (voir l' introduction générale). Cette recherche aborde certains des défis auxquels les traducteurs peuvent être confrontés dans la traduction de la terminologie dentaire. En outre, il traite de certaines des techniques établies et de certaines lignes directrices qui facilitent le travail des traducteurs. Cette recherche s'est appuyée sur une approche mixte entre descriptive et exploratoire, parallèlement aux approches qualitatives et quantitatives, et à l'analyse comparative. Les échantillons de l'étude se comprennent de 50 termes du dictionnaire anglais liés à la dentisterie et à leurs équivalents arabes. Grâce à l'analyse comparative de ces termes, il a été observé que diverses techniques étaient utilisées pour traduire les termes dentaires de l'anglais vers l'arabe, en particulier la paraphrase .

Les mots clés

Terminologie médicale, traduction médicale, terminologie dentaire, techniques de
traduction