Overcoming the Impediments that Encounter Medical Students' Understanding for Terminologies and Vocabularies

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Abstract
This study aims to shed light on some of the difficulties that encounter medical students when studying medical English vocabulary and tries to support them to overcome these difficulties. It was carried out in 2016 at Faculty of Medicine, University of Khartoum, included 100 third – year medical students. It based on data obtained from the test of medical English vocabulary. The test includes six questions. The main results shows that medical students obtained good marks in the question vocabulary about the body's organs that attacked by diseases with mean difference (3.76), and the definitions of some diseases from different words roots based on different meaning of words and similarities between them in homograph and homophone especially in suffixes and prefixes. The responses of medical students were accepted with mean difference (2.39). However, the study demonstrated some areas in medical English language that represents the source of difficulties that medical students encountered and thus impede understanding medical terminology. The study concluded that the areas of difficulties include the recognition of the definitions of pain quality the mean difference was (0.51) and the combination words (medical collocations), in general medical knowledge, most of medical students were give wrong answers mean difference (-0.72). For checking medical students grammar points, their answers were very weak, so they didn't know how to use correct verb in. (-0.71). The mean difference was (-1) in final question that shows medical students face many different problems in medical writing skills especially in words formation, spelling, medical abbreviations, medical terms, and punctuation marks. Finally, the study recommended that Medical students should have a wide scope of knowledge in pain quality, to help patients feel better, eradicate and recovery from disease. They should Focus on some relatively current medical courses in English for academic purposes. They should also Use a good dictionaries especially medical dictionaries to increase medical collocation vocabulary. Understanding the building blocks of grammar and attention to sentences structure and grammar exercises is requisite. Last but not least, Medical writing skills will relies on obtaining books on medical writing and literature to practice on and set up good writing skills.

Keywords: terminology, Formulation, affixation, words root, medical dictionary

1. Introduction

Medical terminology is a vocabulary or word listing used to describe medical words and terms in a scientific manner and it is a very real sense, the language of medicine. It is used in the medical fields. This medical approach to word building is based on the concept of word roots, prefixes, and suffixes, therefore many different medical students are suffering now from the complexity and difficulties of medical terminology e.g. they can make different mistake in English pronunciation, grammar, and especially medical English vocabulary and how it's usages. Medical terminology had long and rich history which refereed to an oldest scientist physician Hippocrates (Medical Terminology World.com).

John, H and Dirckx .(2014. P:5). stats that " *Modern western medicine traces its roots to the 5th century BCE, when the Greek physician Hippocrates(460-377) first attributed illness to physical causes, distinguished medical practice from priestly ministration and taught diagnosis by observation and treatment by fostering or restoring natural processes*."

Medical terminology is important because it is use to describe symptoms, diagnoses, tests, that need to be ordered and ran, and special medical equipment.(www. Avidity medical design consulting academy.com)

2. Literature review

Definition and conception of medical terminology

Terry, B. (2012 P:4) defined medical terminology refers to the words and phrase which have been developed to describe the procedures, medications, instruments, anatomical structures, etc. Used in the field of medicine. It is, in a very real sense, the language of medicine. Most medical terms derive from Latin and Greek, like many languages, the language of medicine adheres to a set of fairly simple rules. Understanding of medical terminology and abbreviations that has been acquired so far. It also helps determine what areas one might need to work on.

Medical terminology is the study of words that pertain to body system, anatomy, physiology, medical processes, and procedures and a variety of diseases. It provides specialized language for the health care team, enabling health care workers to communicate in an accurate, articulate, and concise manner.

Importance of Medical terminology

Medical terminology is important if you work in the health care field. (Sheila, D. .2016) showed that it is the basic for all that you will do. It is used to describe symptoms, diagnoses, tests that need to be ordered and ran, and special medical equipment. The terminology is spoken and written in charts so you must learn to say, spell and read medical terms.

Medical terminology is important for many reasons:

1-It allows all health care workers to communicate in one language.

2-You will use it every day when you work in the health care field.

3-If you have to get your medical dictionary out every time you get asked to do something you will be wasting valuable time. Nurses, doctors, and other health care professionals do not have time to waste, especially in an emergency situation.

4-One small mistake can make abig difference. You could give the wrong medication or just give the medication the wrong way. It can be the difference between ordering the right test or the wrong one, you need to understand medical terms.

5-Common abbreviation are used in patient records. This helps doctors and nurses write quickly and efficiently in the records so that they can be onto the next patient. It also allows you to read and understand the records quickly.

Formulation of medical terminology

It may seem like an impossible task to commit the spelling and meaning of 100,000 different medical terms to memory - and in fact, for most of us it is. Fortunately, it is not necessary. The fact is that most seemingly complex medical terms are simply combinations of much smaller subsets of word parts. This is a critically important concept to understand with medical terminology.

It is not unreasonable to expect to memorize several hundred medical prefixes, medical suffixes and medical root words in a relatively short period of time. Then, once these word parts are learned, they can be combined to form literally thousands of complex medical terms. Most medical terms consist of one or more parts. These word parts may include one or more of the following: Root words -Prefixes –Suffixes. (Medical World News Center.2016).

3. Materials and Methods

The study includes 100 third-year medical students from the Faculty of Medicine, University of Khartoum. It consisted six questions the data was drawn from Medical English vocabulary test based on medical students' syllabus experienced that they had taken in the first, second,

third year, and general medical knowledge. This test of medical English vocabulary was conducted with medical students had 90 minutes to answer the questions. to identify some difficulties that face medical students for understanding medical English vocabulary.

The test included medical English vocabulary The test was conducted with medical students, level three, at Faculty of Medicine, University of Khartoum. This test composed of six questions which depend on students' medical vocabulary knowledge according to their previous medical syllabus experienced after they had been taken them in level one, two and three to identify some difficulties that face medical students for understanding medical English vocabulary.

The medical vocabulary test included six questions major in English vocabulary. This test divided into six questions each one measured aspect of medical English vocabulary knowledge as follows:

Question one is concerns of multi different meaning of words of pain quality. Question two describes different meaning of medical terms of body's organ and some diseases can attack these organs. (physiology). Question three presented medical students' knowledge of some symptoms and their definitions, this question based on different meaning of words according to words roots and the similarities between these words in homonyms of homophone and homograph especially at suffixes and prefixes. Question four included the collocations of some combination of general medical words that two or more words that often go together. Question five concerned of the structure of correct grammar sentences that often useful in medical procedures and writing medical reports. Finally question six has especial conventions of writing (namely, using alphabet standardised system of spelling and a set of punctuation marks and abbreviations), the vocabulary and the grammatical structure are using essentially for speaking and writing. It's considered important part of tools of data collection. The analysis framework of this test basically depends on descriptive analysis of data collection and turns to numerical statistical framework

4. Test analysis and results

The students were taken a test contained four sections to evaluate the level of understanding a medical vocabulary after collection the exam teacher checker the test and the scores listed and manipulated by statistical methods, the result show here

	Measurements			t-test	Sig	Mean difference
	Mean	Std. deviation	S.E. of mean			
Question 1	5.51	2.81588	0.28159	1.811	0.073	0.51
Question2	7.76	0.69805	0.0698	53.864	0.000	3.76
Question3	4.89	0.49021	0.04902	48.755	0.000	2.39
Question4	2.78	1.38957	0.13896	-5.181	0.000	-0.72
Question5	1.79	1.32798	0.13280	-5.346	0.000	-0.71
Question6	1.50	0.93744	0.09374	-10.667	0.000	-1

The table shows the result of the which t-test are used to determinant there is difference mean from test value (the test value is half mark obtained by the student). For question 1 the mean marks is 5.51 from total mark 10 with standard deviation 2.82 and standard error of mean 0.283. but there is in significance this implies in this question student not matter. For question 2 the mean marks is 7.76 from total mark 8 with standard deviation 0.698 and standard error of mean 0.0698. the value t-test is 53.864 with p-value 0.000 this implies in this question the students high grade. For question 3 the mean marks is 4.89 from total mark 5 with standard deviation 0.49 and standard error of mean 0.0049. the value t-test is 48.755 with p-value 0.000 this implies in this question the students high grade.

For question 4 the mean marks is 2.78 from total mark 7 with standard deviation 1.389 and standard error of mean 0.13896. the value t-test is -5.181 with p-value 0.000 this implies in this question the students low grade. For question 5 the mean marks is 1.79 from total mark 5 with standard deviation 1.3289 and standard error of mean 0.1328. the value t-test is -5.346 with p-value 0.000 this implies in this question the students low grade. For question 6 the mean marks is 1.5 from total mark 5 with standard deviation 1.389 and standard error of mean 0.13896. the value t-test is -10.667 with p-value 0.000 this implies in this question the students low grade.

The Test discussion

The test was carried out with medical students, level three, at Faculty of Medicine, University of Khartoum. This test composed of six questions which depend on students' medical vocabulary knowledge according to their previous medical syllabus experienced after they

had been taken them in the first, second and third year, to identify some difficulties that face medical students in understanding medical English vocabulary.

To pass first year examinations and proceed to second year.

The candidate must successfully pass examinations in the following courses.

a) Biology - Chemistry

b)Anatomy - Biochemistry - Physiology- Community Medicine -Patient Care and First aid and English Language

Year 2: To pass the second year and proceed to the third year the candidate must pass examinations in the following courses.

a) Anatomy-Biochemistry-Physiology -English Language

b) and sit an examination in the following continuing course:

-Community Medicine.

Failing in the 3 subjects or in a supplementary examination, the candidate will repeat the year.

Year 3: To pass the third-year examinations and proceed to fourth year the candidate must successfully pass an examination in the following courses.

a) Neuroscience - Microbiology- Immunology- Pharmacology- Infectious and Endemic - Basic Clinical Skills disease- Behavioral Sciences

b) And sit for examination in the following continuing courses

Community Medicine-Pathology

Failing in five or examination.

The vocabulary test designed according to medical students knowledge about above courses.

Question one

Question one concerns about the definitions of pain quality, the results show that in significance with mean difference (0.51) which means that medical students faced difficulties to understanding and recognizing the meaning of pain quality that means medical students need to study more in specialist medical English vocabulary about pains quality.

The International Association for the Study of Pain widely used pain definitions as (Bogduk, N. and Merskey, H.(1994). stated that "Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage." In medical diagnosis, pain is regarded as a symptom of an underlying condition. It is a major symptom in many medical conditions, and can interfere with a person's quality of life and general functioning."

On the one hand, medical students should have a wide scope knowledge of pain qualification and their definitions to help patients feel better, eradicate and recovery from diseases. Also Joshi and Ogunnaike,G. and Orgunnaike, (2005. P: 21- 37). Say that "*Pain was regarded since 5th as a vital sign to help raise awareness of the presence of pain and all healthcare professionals should routinely measure aperson's pain and then act on the information obtained. Pain assessment is imperative to ensure that patients receive safe and effective pain management that is tailored to their needs. Pain assessment is fundamental in assessing the diagnosis of the cause of the pain and it should not be assumed that this is self evident*. The outcome of inadequate of knowledge of pain qualification and its subsequent management can be give serious physiological and psychological consequences e.g. increase postoperative morbidity, delyed recovery and return to normal daily living, and reduced patient satisfaction have all been reported (Joshi, 2005). In addition to Macrae, W. (2001. P: 87–98) mention that ((*poor postoperative pain management may lead to persistent pain after surgery*)). Finally knowing of pain qualification enables to identifying accurate therapeutic interventions and evaluation of treatment efficacy that helps to relieve suffering and avoid misconceptions. The description of painful experiences varies considerably. Consequently, a range of adjectives that describe pain has arisen. However, the study of their meaning is relatively recent. But individuals still find difficult to use these abundance of words that describe pain, the main reason is that words such as gnawing, throbbing, shooting have few objective reference points, compared with the use of words like red or green, which although adjectives have definite reference to something we clearly understand.

Question Two

This question includes different meaning of some medical terms that describes the body organs' diseases. In question two medical students well done and they have obtained good marks with mean defference (3.76), there fore they are studied at first, second and third years some relatively current courses such as physiology, patient care, commumity medicine, Anatomy, immunology, infectious and Endemic diseases, Basic clinical skills and Pathology. Inaddition medical students have bieng studied only specialist medical English at the end of semester four, it was about 30 hourse divided to two hourses per week. Medical vocabulary including not just words but also their meaning, orthography, pronunciation, context and conjugation, is in the very essence of the process of learning a new medical language. Here are three key reasons why increasing and evolving medical vocabulary is well worth the

effort, medical vocabulary is the key to communication (Wilkins, D. 1972), also medical vocabulary allows to develop other English skills (Nation, P. 1994), and Nation, P. (1990) stated that the more words you know, the more you will learn.

Question Three

In this question medical students are tested on their general medical knowledge of some definitions of diseases. This question based on different meaning of words that included similities between words in homonumes which divided into homophone and homograph especially in suffixes and prefixes. The main defferent between the most of words is words roots. The mean difference was (2.39). The responses of medical students are accepted because they studies many different courses related to above issue.

Question four (Medical vocabulary"Collocation")

Question four composes of combination words in general medical knowledge. Medical students' marks were fauilar in this question, the mean difference was (-0.72) therefore, they have poor knowledge of medical collocations vocabulary which are build up from noun or phrases and consist of two or more of medical terms that are give meaningful of medical collocation for example consulting roome, general practitioner, general practice, healthcare, internal medicine, and surgical center.

A collocation is two or more words that often go together. English language of medical students will be more natural and more easily nuderstood, also they will have alterative and rich ways of medical vocabulary expressing. A collocations refers to how words go together or form fixed relationships. Becoming aware of collocation is a part of vocabulary learning. All languages have alarge number of collcating words. A good medical dictionaries will help medical students to formulation medical English collocations.

Collocations of medical vocabulary learning

Practice using new collocations in context as soon as possible after learning them. Learn collocations in group. Easy to find information on collocations in any good learner's dictionary. And you can also find specialized dictionaries of collocations. (collocatihttp://www.onestopenglish.com).

Question five (Grammar)

In this question medical students' mean difference was (-0.71), this question designed for checking their grammar points, their responses were very bad because they didn't know sentence’s structure and how to use certain correct verb in. Grammar is an important factor to

learn a new language. Most of people think it is the most difficult part of learning a new language. However, grammar constitutes the rules and framework, changing the form of words and joining them into sentences. If there are no rules it creates problems in communication – writing – and understanding English language.

(Kim. B.2001. P: 46-48):. says that*' 'Grammar is the set of rules of any given language that enable us to construct any sentence in that language which we recognize to be well- formed. The grammar of English would enable us to construct a correct sentence. The rules of English essentially deal with the principles of stringing words together to form larger units of construction such as phrases, clauses and sentences. This aspect of grammar which is concerned with word order is called syntax. A clause is unit of syntactic construction. There are many different types of clause fulfilling a range of functions within sentences, it is possible to identify the features which typify a clause. Most central to a clause is it verb element. Verb phrase are multi – faced in the way they provide information about tense, aspect, voice, and so on. The verb phase is normally preceded by a subject element and followed by any elements needed to make the clause grammatically complete".*

In question five medical students show poor grammatical levels, that mean they must be improve and check their grammar.

See http://www.englishleap.com/exercises. Here are some tipsto help students to improve their grammar

Understand the building blocks of grammar

As a first step, it is important to know the different building blocks of grammar like nouns,pronouns,articles,adjectives, verbs,adverbs,prepositions, conjunctions and interjections. The internet is full of resources about these and it is usually a good idea to understand them well.

Pay attention to sentence structures

When you read an article, it is important to pay attention to how sentences are constructed. This practice helps ingrain different sentence structures and will help your spoken and written English.

Grammar exercises will help you

Try doing different grammar exercises and find out your weaknesses. These exercises are freely available on the internet. It is only after you are able to correctly assess your weaknesses that you will be able to rectify them.

Join a course

Many students find that an English improvement course is the quickest way to improve English grammar. If joining a classroom program is difficult, then an online course is a great option.(English leap .com grammar)

In addition to mentioned above medical students can improve their English grammar by use grammar books to read about English grammar and test your grammar, learn different tenses and doing online exercises.

Question 6 Writing

The mean difference of question six was (-1), this resultshows that medical students face many different problems in medical English writing which divides into words formation, spelling**,** medical abbreviations**,** medical terms**,** collocations**,** and punctuation marks**.** English language has special conventions for writing (namely, using alphabet standardised system of spelling and a set of punctuation marks). The vocabulary and the grammatical structure are used for speaking and writing are essentially the same even though writing is often more polished than speech. Natilene, B. (2007. P:164) defines "Academic writing style" as*"In other words this type of writing tends to be quite formal in tone. Also it doesn't have emotional colouring and any kinds of someone's own position in situations. In short this means that your essay or something else should avoid colloquial words and expressions".*

Mel, L.(2002), stated that*"English language problem may manifest itself in some aspects of writing as following:.Poor vocabulary, Frequent capitalization, punctuation and grammar errors. Many misspelled words, Inappropriate use of colloquial language. Difficulty with sentence structured and word order. Trouble reading back what is written. Difficulty with word sounds, spelling, and meaning. Difficulty generation ideas or elaborating on them. Difficulty developing and organizing ideas. Awkward phrasing and unconventional grammar. Poor planned papers and reports".*

To improve good writing relies on medical students 'abilities steadily over time through obtaining books on technical writing and practice what you have learned, use medical dictionaries and any technical literature, use present tense and keep sentences simple, develop reading and business knowledge of second language, and finally keep a notebook of your mistakes from your writing and tips you learn.(wikihow.com).

5. Conclusion

English for academic purposes, in this one of the most demanding areas to help medical students for understanding medical English vocabulary. There are many difficulties face medical students in this areas and they are need effective teaching strategies for enhancing and supporting their knowledge of medical English vocabulary. To overcome these difficulties should make directly instructions for medical English syllabus designers and subject teachers because they are responsible to monitor medical students directly, to enable them to use medical terminology in real life professional situations. The best way to help medical students to develop learning strategies of medical terminology is by taking advantage of the specific online lecture and improve grammar elements, use medical dictionaries to promote medical vocabulary uses, read medical book, and self research on medical issues.

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