An Investigation into the Challenges Faced by Medical Students in Acquiring English Technical Vocabulary at the University of Gharyan

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المستخلص

تحرى هذا البحث التحديات التي يوجها طلاب كليات الطب في تعلم المصطلحات الطبية وقد تم اعتماد منهج البحث الكمي وشارك في الدراسة 61 طالبًا من طلاب السنة الأولى بكلية الطب بجامعة غريان.

وتم جمع البيانات باستخدام استبيان منظم وقد كشفت النتائج أن طلاب كليات الطب يواجهون عدة تحديات في تعلم مفردات الطب، بما في ذلك النطق، والإملاء، والمعنى، والاستخدام كما أشارت النتائج إلى أن الطلاب يواجهون صعوبة في تذكر بعض المصطلحات الطبية، وهو ما قد يُعزى إلى الحمل المعرفي الزائد. ويوصي الباحثون بإعادة تقييم برامج اللغة الإنجليزية الطبية الحالية في كليات الطب في ليبيا. وقد تساهم أساليب مثل تعليم المفردات في سياقاتها، وتوضيح الفئات النحوية للكلمات، وإبراز الفروق بين المترادفات من خلال الأمثلة، وتدريب الطلاب على النطق الصحيح للكلمات في تحسين هذه البرامج.

Abstract

This research investigated the challenges medical university students encounter in learning technical vocabulary. A quantitative research approach was adopted. 61 first-year medical students at the University of Gharyan participated in the study. A structured questionnaire was used to gather the data. The findings revealed that medical university students encounter several challenges in medical vocabulary learning, including pronunciation, spelling, meaning

and use. The results also indicated that medical university students struggle to recall some medical terms, which could be attributed to cognitive overload. The researchers suggest revaluating the current English medical programs at the Faculties of Medicine in Libya. Teaching vocabulary in context, highlighting the grammatical categories of words, drawing distinctions between synonyms through examples, and training students on using medical words through interactive activities could enhance the current English medical programs.

Keywords: ESP**.** EMP, Medical English, Technical vocabulary, Vocabulary knowledge

1.0 Introduction

In recent decades, English has become the lingua franca of the world. There are about 400 million native speakers of English and 1.4 billion who use it as a second or third language (Crystal, 2005). It is now the main tool of communication in several areas, including medicine, natural sciences and social sciences (Hutchinson & Waters, 1987). The dependence on English as the language of communication in academic institutions has increased enormously in the past decades (Mauranen, 2010).

The dominance of English over other languages was noted by Graddol (1997), who stated, "There is a growing concern about endangered languages but very little debate about the management of large languages, of which English is the largest" (p. 63). This phenomenon led some scholars to compare it to Latin, which played a similar role in the past (Scheuer, 2010). According to Baethge (2008), English is now the international language of medicine. Although Arabic is still the only official language in Libya today, English has been increasingly used in several sectors, including industry, health and education. For instance, scientific disciplines such as medicine, engineering, and pharmacy are now taught in English. The predominance of English as the language of instruction in these disciplines led to the emergence of English for specific purposes ESP as a new approach to English teaching. It aims to equip learners with the English skills they need in their particular domains. According to Paltridge & Starfield, (2013), "A key feature of an ESP course is that the content and aims of the course are oriented to the specific needs of the learners, then, focus on the language, skills, and genres appropriate to the specific activities the learners need to carry out in English." (p.2).

A major subfield of ESP is English for medical purposes EMP which is concerned with teaching and learning the English skills and vocabulary used in medical settings. English is the dominant language in the medical domain in several countries, including Libya, serving as a

primary medium for education, research, and professional communication. Therefore, students majoring in medical domains are expected to have good mastery of English and extensive knowledge of the specialised terms used in medicine. However, it has been observed that some students lack the minimum English proficiency levels needed to study a major in which English is the medium of instruction. This issue is occasionally experienced by students who join the faculty of medicine due to the plethora of English medical terms in the curriculum. Most of these terms might pose challenges owing to their complex structures and Latin or Greek origins.

1.1 Statement of the problem

Medical education at Libyan universities is based on the British curriculum (Benamer & Bakoush, 2009). Hence, medical university students need a good command of the English language in general and technical vocabulary in particular to complete their medical studies successfully. One of the issues that poses challenges for medical university students is the plethora of technical words which require considerable effort to learn. As English as a foreign language (EFL) teachers, we have observed that technical vocabulary in the medical field presents some obstacles for first-year students. These obstacles include difficulties in using technical vocabulary with their collocations appropriately e.g. "the patient will "*do surgery*" instead of "*take surgery*" and confusion in using affixes such as "*disfunction*" instead of "*dysfunction*". Moreover, the spelling of medical terms poses another challenge due to the extensive use of prefixes and suffixes. Besides, students might fail to use vowel letters correctly e.g "*diabetis*" instead of "*diabetes.* Such terms have idiosyncratic properties which are not congruent with the conventions of common English words.

The English language is studied as a general subject at schools in Libya. Recent studies reported that EFL Libyan school teachers continue to use traditional methods of teaching, which fail to achieve the communicative learning outcomes outlined in the curriculum (Orafi, 2008; Shihiba, 2011; Shibany, 2018). As a result, students at the faculty of medicine usually have low English proficiency levels, making them unprepared to cope with the intricate nature of medical English vocabulary.

1.2 Research aims

This study explores the challenges of learning and using medical English vocabulary among first-year medical students at the University of Gharyan. To the researchers' knowledge, this is the first study to investigate the problems of learning medical English terms in relation to

different aspects of word knowledge in the Libyan context. It attempts to achieve the following aims:

- Investigate the types of vocabulary challenges medical students face at the University of Gharyan.
- Identify what aspects of vocabulary knowledge cause learning difficulties.
- Suggest some tips for improving medical English courses at the Faculties of Medicine in Libya.

1.3 Research questions

This study seeks to answer the following research questions:

- What challenges do students at the faculty of medicine face in learning technical medical vocabulary?
- How can English programs at the faculties of medicine be improved to deliver better learning outcomes?

The next section reviews the literature related to technical vocabulary in the medical field. It provides an account of the features of medical terms, the types of vocabulary knowledge aspects, and the significance of technical vocabulary in studying medicine.

2. Literature review

2.1 The nature of technical vocabulary

Vocabulary can be defined as “words we must know to communicate effectively; words in speaking (expressive vocabulary) and words in listening (receptive vocabulary)” (Neuman & Dwyer, 2009, p. 385).

“ESP vocabulary can be referred to in several ways: special purpose vocabulary, specialized vocabulary, technical, or sub-technical vocabulary” and it “characterizes ESP vocabulary as the vocabulary of a particular subject area at university or vocabulary specific to a professional discipline” (Coxhead 2015 cited in Vrběcká 2019, p.50). Nation (2001) defined specialised vocabulary as “words that are “recognizably specific to a particular topic, field or discipline” (2001, p. 198).

Technical vocabulary is used ubiquitously in medical settings. This type of vocabulary cannot be easily translated due to its complexity and the indirect senses it carries. As Nation (2008, p.

10) puts it, “We do not know a lot about technical vocabularies, but they probably range in size from around 1,000 words to 5,000 words depending on the subject area.”

Vocabulary learning entails acquiring various aspects of knowledge. Nation (2001), a leading authority in second language vocabulary learning, developed a comprehensive taxonomy of vocabulary knowledge aspects.

Category	Aspect	R / P	Question
Form	Spoken	R	What does the word sound like?
		P	How is the word pronounced?
	Written	R	What does the word look like?
		P	How is the word written and spelled?
	Word parts	R	What parts are recognizable in this word?
		P	What word parts are needed to express this meaning?
Meaning	Form and meaning	R	What meaning does this word form signal?
		P	What word form can be used to express this meaning?
	Concept and referents	R	What is included in the concept?
		P	What items can the concept refer to?
	Associations	R	What other words does this make us think of?
		P	What other words could we use instead of this one?
Use	Grammatical functions	R	In what patterns does the word occur?
		P	In what patterns must we use this word?
	Collocations	R	What words or types of words occur with this one?
		P	What words or types of words must we use with this one?
	Constraints on use	R	Where, when, and how often would we expect to meet this word?
		P	Where, when, and how often can we use this word?

Table 1: Aspects of vocabulary knowledge (Nation, 2001) (P=Productive/R=Receptive)

As shown in Table 1 above, the knowledge aspects are categorised into form, meaning, and use. Learning a technical word involves knowing the same knowledge aspects of general vocabulary (Dudley-Evans & St John, 1998). Vocabulary knowledge is not only limited to understanding meaning, but also learning how words are formed and used. In other words, other knowledge aspects such as spelling, pronunciation, collocation, and register play a key role in using words appropriately.

The form of vocabulary involves how words are pronounced and how they are constructed. Meaning encompasses what senses a word carries and what other words with similar meanings

are associated with it. The use category entails the types of contexts a word can be used. Additionally, it is concerned with the words that co-occur to produce correct patterns. The multiplicity of knowledge aspects of vocabulary shown in the table above might present challenges for students. For instance, the pronunciation of some medical terms is not straightforward due to their Latin and Greek origins. Moreover, medical vocabulary is composed of letters that have fewer letter–sound relationships than general words (Sabbah, 2015; Ichiyama, 2018). Moreover, understanding the meaning alone might not be sufficient to enable students to use medical vocabulary properly. As Sinadinović (2013) argues, medical vocabulary tends to be more difficult to use in real communication. Osman (2020) researched the vocabulary learning barriers faced by medical students at the Faculty of Medicine, University of Khartoum. The results showed that several students made mistakes in using correct collocations with some medical words. Moreover, the students found medical abbreviations and the spelling of some words challenging to learn.

The multiplicity of vocabulary aspects necessitates developing effective strategies to facilitate their retention and use. McCarthy (as cited in Gu, 2003) stated, "the purpose of vocabulary learning should include both remembering words and the ability to use them automatically in a wide range of language contexts when the need arises." Thomson & Mehring (2016) suggest using spaced repetition can enhance students' abilities to retrieve words more automatically. Furthermore, it has been reported that exposing students to large amounts of information might lead them to experience retention complications (Rohrer & Pashler, 2007). To deal with the multiple meanings of vocabulary, Pennock (1979) argues that one can resort to context clues, which can give hints for the meaning of an unfamiliar word.

2.2 Importance of technical vocabulary

On emphasising the importance of vocabulary, Wilkins (1972) stated "Without grammar very little can be conveyed, without vocabulary, nothing can be conveyed" (p. 111). In agreement with Wilkins, Viel (1988) pointed out, "Vocabulary acquisition is and has always been one of the core activities in foreign language learning, whether it is for general purposes or professional ones - very simply because no communication is possible without words."

Learning medical vocabulary is considered a basic requirement for acquiring subject-related knowledge in the field of medicine. Previous research revealed a strong link between vocabulary size and academic achievement (Laufer, 1997). Similarly, Gablasova (2014) argues that vocabulary mastery and subject knowledge are strongly interrelated. Likewise, Schmitt

and Schmitt (2020) emphasise the role of technical vocabulary in understanding particular domains, since many of the key concepts are represented by this vocabulary. Additionally, familiarity with specialised vocabulary helps learners become active members of communities of special majors where they take an active role in sharing and building knowledge (Woodward-Kron 2008).

2.3 Features of medical vocabulary

Medical English refers to the English used by medical students and professionals. The importance of this area led to the introduction of English for medical purposes (EMP) a special ESP branch that focuses on developing language skills in medical settings. According to Maher (1986), EMP refers to "the teaching of English to doctors, nurses and other personnel in the medical professions" (p. 112). EMP as a field aims to equip medical learners with the English skills they need, covers medical topics that are relevant to medicine, and provides training on the language skills needed in the medical profession, such as writing a medical paper or delivering a talk at a medical conference (Maher, 1986).

Medical English is distinguished by several characteristics, including the presence of Latin and Greek roots and affixes, the complex structure of its vocabulary and the use of metaphors and eponyms. According to Goumovskaya (2007), 98% of all English medical terms have Latin or Greek roots. Besides, affixation is a common feature in medical terms. Greek and Latin prefixes and suffixes are extensively used to create medical terms (Shuhratovna, 2024). As shown in Table 2, Greek terms are predominant for conditions, diseases, and symptoms (e.g., -itis, -algia). On the other hand, Latin terms are more common for anatomical descriptions, procedures, and positions (e.g., post-, -form).

The abundance of prefixes and suffixes in medical English can pose challenges for students. They require tremendous effort to distinguish their meanings and memorise their forms, which share many similarities, e.g. *hypoglycaemia*: low blood sugar and *hyperglycaemia*: high blood sugar. Furthermore, students may apply prefixes and suffixes inappropriately due to over-generalisation (Kennedy & Bolitho, 1984). To illustrate, the prefix *brady-*, which means (slow) as in *bradycardia* (slow heart rate), might be incorrectly applied to other terms such as *bradybreathia* instead of *bradypnea*, which means (slow breathing).

Further, medical language consists of unfamiliar and strange words, for example, some words contain triple (o) together as in "*hystero-salpingo-oophorectomy"* and others start in double (o) as in "*oophorectomy"* (Abdullah, 2013).

Origin	Type	Affix	Meaning	Example	Explanation
Greek	**Prefix**	**Hypo-**	Below, under, deficient	*Hypoglycemia*	Low blood sugar (*hypo-* = low, *glycemia* = sugar in blood).
		Tachy-	Fast	*Tachycardia*	Abnormally fast heart rate (*tachy-* = fast, *cardia* = heart).
	Suffix	**-it is**	Inflammation	*Arthritis*	Inflammation of the joints (*arthr-* = joint, *-itis* = inflammation).
		-algia	Pain	*Neuralgia*	Pain along a nerve (*neur-* = nerve, *-algia* = pain).
Latin	**Prefix**	**Post-**	After	*Postoperative*	After surgery (*post-* = after, *operative* = surgery-related).
		Ante-	Before	*Antepartum*	Before childbirth (*ante-* = before, *partum* = birth).
	Suffix	**-ectomy**	Surgical removal	*Appendectomy*	Removal of the appendix (*append-* = appendix, *-ectomy* = removal).
		-form	Shape, resembling	*Cruciform*	Shaped like a cross (*cruci-* = cross, *-form* = shape).

Table 2: Examples of Greek and Latin affixes

Another common feature of medical English is the use of metaphors. War words are commonly used in medicine to label doctors as "fighters" and disease as an "enemy" (Ferguson, 2012). Furthermore, the body is viewed as a "machine" by assigning mechanical functions to its organs (e.g. heart – pump; brain-computer; digestive organs – plumbing system) (Ferguson, 2012, p. 245).

A further prominent characteristic of medical English is the use of eponyms. An eponym is defined by Crystal (2003, p. 163) as "the name of a person after whom something (such as an invention or a place) is named". Common examples include *Down syndrome*, *Parkinson's disease*, and *Alzheimer's disease*. Cappuzzo (2008) classifies eponyms into five categories:

1. proper names of people who have studied a particular disease or condition (e.g., Down's syndrome);
2. common names of professions (e.g. coal miner's knee) or classes of individuals (e.g. housemaid's knee or golfer's elbow);
3. names of literary characters (e.g., Oedipus complex);
4. toponyms (e.g., Murray Valley encephalitis);
5. proper names of patients who have suffered from a particular disease or condition (e.g., Christmas disease). (p. 2).

Eponyms offer a simple and concise way to describe discoveries by associating them with the names of the people who made them. In addition, eponyms are used to acknowledge those people so that their names are always remembered (Cappuzzo, 2008).

Having highlighted some characteristics of medical English vocabulary, the next section of this paper presents some studies on medical English in the Libyan context.

2.4 Related studies

Previous research on medical English in the Libyan context is limited. A study by Al-Areibi (2019), which examined the current state of the medical education system in Libya, revealed that English language weakness among medical students negatively impacted curriculum delivery and assessment. Al-Areibi (2019) argues that students' levels of English should be assessed from the admission stage, and effective English training programs should be implemented to address their English language gaps. Additionally, Abuklaish (2004), cited in Abuklaish (2014), reported that most students at a science institution in Libya, where English was the medium of instruction, encountered serious problems in communicating freely and dealing with general and technical vocabulary.

In another study, Ahmed et al. (2015) explored the attitudes of medical students towards the use of English as a medium of instruction at Sabha University. Their study showed that the majority of the students surveyed prefer that core subjects be taught in both Arabic and English, as this can facilitate the understanding of the material and enable them to improve their English language skills simultaneously. Similar results were reported by Tamtam (2024) , who found that medical students at Al-Jabal Al-Garbi and Nasser Universities showed strong preferences for Arabic-English bilingualism. Furthermore, teachers of both universities strongly advocated using Arabic and English in the classroom.

Faraj (2015) investigated the English proficiency of medical university students at Almarj School of Medicine at the University of Benghazi. His study showed some discrepancies between students' needs and the content of the curriculum. Moreover, both students and teachers pointed out that vocabulary was one of the difficult areas that required further development. The findings of Faraj (2015) are in line with those of Annajeh (2023), who reported that fourth-year health sciences college students at the University of Gharyan struggled in translating medical terms into Arabic and failed to analyse their morphological structures. Annajeh (2023) suggested directing more attention towards teaching affixes and roots to address this issue.

Given their Latin and Greek origins, medical vocabulary appears to present barriers for Arab learners whose first language has a different system from English, Latin and Greek. As Khan (2016) argues, medical vocabulary learning challenges might be attributed to their complex sound system, spelling, grammar, structure, or meaning.

In contrast, a study by Almushwat & Elkout (2024), which examined the attitudes of medical students during their clinical phase at Tripoli University, revealed that the majority of these students had no concerns regarding using English as a medium of instruction.

As it appears from the studies above, there is a lack of consensus regarding the status of medical English in Libya. Therefore, more research is needed to investigate this area further. In the next section, the research methodology of this study is described.

3. Methodology

3.1 Research context and participants

The study was conducted at the Faculty of Medicine at the University of Gharyan during the Autumn semester of 2024. At the Faculty of Medicine, English is the medium of instruction for all medical courses. In their first year, students take a course in medical English in which they learn essential medical terminology. In addition, the curriculum covers the four language skills: reading, listening, speaking, and writing.

61 first-year students at the faculty of medicine participated in the study. The following table shows the classification of the study participants by gender:

Table 3: Classification of study participants by gender

	Number	Percentage (%)
Males	12	19.67 %
Females	49	80.33 %
Total	61	100 %

Since one of the researchers was the English tutor of the English course at the faculty of medicine, convenience sampling was employed to reach the participants. Convenience sampling involves "choosing the nearest individuals to serve as respondents and continuing that process until the required sample size has been obtained of those who happen to be available and accessible at the time" (Cohen et al., 2018, p. 218). Dornyei, (2007) points out that this sampling technique is commonly used in second-language research. In addition to their proximity, the participants also have to possess certain key characteristics that match the research objectives (Dornyei, 2007).

3.2 Data collection

A structured questionnaire was designed to gather the data. According to Brown (2001), "Questionnaires are any written instruments that present respondents with a series of questions or statements to which they are to react either by writing out their answers or selecting from among existing answers" (p. 6). The questionnaire consisted of eleven closed-ended items to identify the difficulties associated with aspects of word form, meaning and use. The taxonomy of vocabulary knowledge that was developed by Nation (2001) was used as a theoretical framework to guide the investigation. The framework was used to design a questionnaire that covered a comprehensive list of challenges students might face in learning medical vocabulary.

The main reason for choosing the questionnaire as the data collection instrument was due to its ability to quickly gather a large amount of data from a large number of participants (Dornyei, 2007; Munn & Drever, 1990). Moreover, a questionnaire is a convenient way to gather honest answers. That is, unlike interviews, participants can provide data without disclosing their identities.

In constructing the questionnaire, the strategies suggested by Dornyei and Csizer (2012) were adopted. First, the items were made concise. Second, the language used was made simple.

Then, the questionnaire was translated into Arabic by an experienced translator to avoid any misunderstanding. Finally, the negative statements and double-barreled questions were avoided to enhance the clarity of the items.

To verify the reliability of the questionnaire, the statistical measurement was followed using the Cronbach's alpha coefficient method. The questionnaire is considered to have weak reliability if the Cronbach's alpha coefficient value is less than 60%, acceptable if this value ranges from 60% to 70%, and good if the Cronbach's alpha coefficient value ranges from 70% to 80%. When the value is greater than or equal to 80%, this indicates that the questionnaire has excellent reliability, and the closer the measure is to 100%, the better the test results are considered.

The following table shows the values of Cronbach's alpha coefficients of each section in the questionnaire.

	Variable	Number of Items	Reliability Coefficient % Alpha Cronbach
1	Challenges Related to the Form of the Medical Word	4	74.6 %
2	Challenges Related to the Meaning of the Medical Word	4	73.8 %
3	Challenges Related to the Use of the Medical Word	3	78.4 %
	Overall	11	75.4 %

Table 4: Reliability Coefficient Values of the Study

3.3 Data Analysis

The SPSS software was used to analyse the quantitative data of the questionnaire. The responses were calculated and converted into percentages on bar charts to show how many participants selected each statement.

4. Findings

The findings of this research were classified into three categories, namely, word form challenges, word meaning challenges, and word use challenges.

4.1 Word form challenges

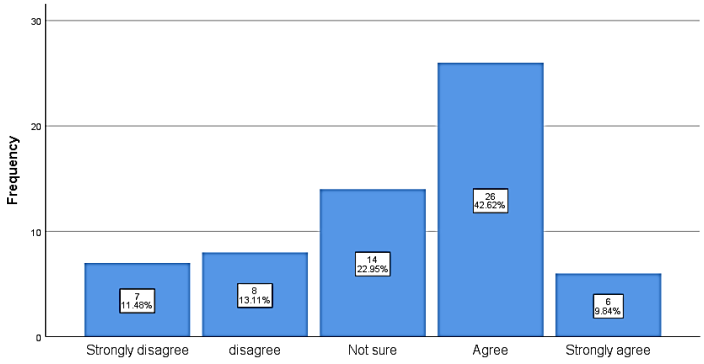

Figure 1: Understanding the abbreviations of medical terms is difficult

More than 50% of the participants either agreed or strongly agreed that medical abbreviations present challenges when learning medical vocabulary. 22% of them indicated they were not certain, while 24% disagreed or strongly disagreed that abbreviations are challenging to learn.

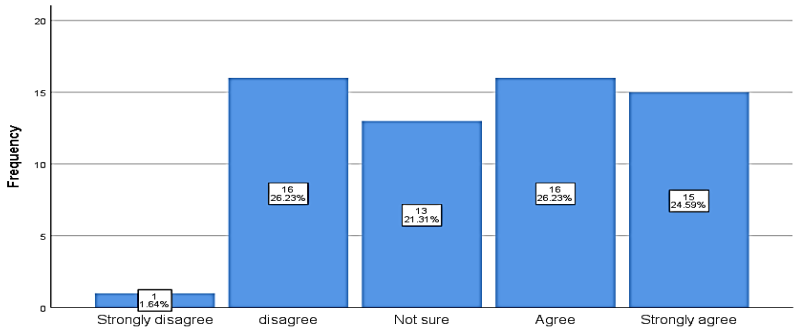

Figure 2: I encounter challenges in pronouncing new medical terms

50% of the participants either agreed or strongly agreed that pronouncing new medical terms is difficult. In contrast, 27% of the participants either disagreed or strongly disagreed that they faced problems in pronouncing medical terms correctly, while 21% of them were uncertain.

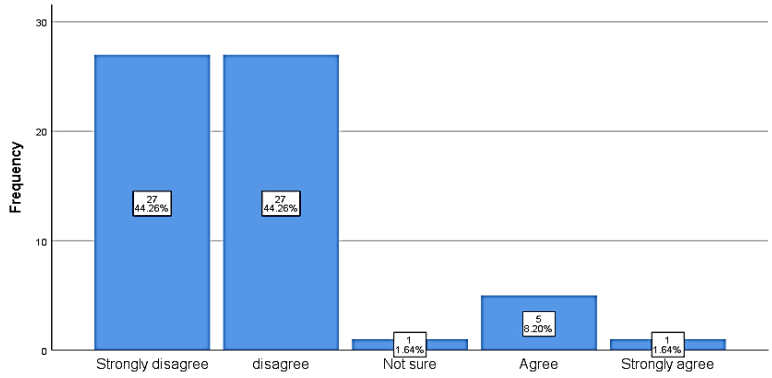

Figure 3: Prefixes and suffixes present some challenges to me

Regarding affixes, the majority of participants, 88%, either strongly disagreed or disagreed that they encounter problems in understanding prefixes and suffixes. In contrast, only 6% of them either agreed or strongly agreed that affixes present obstacles to learning medical vocabulary.

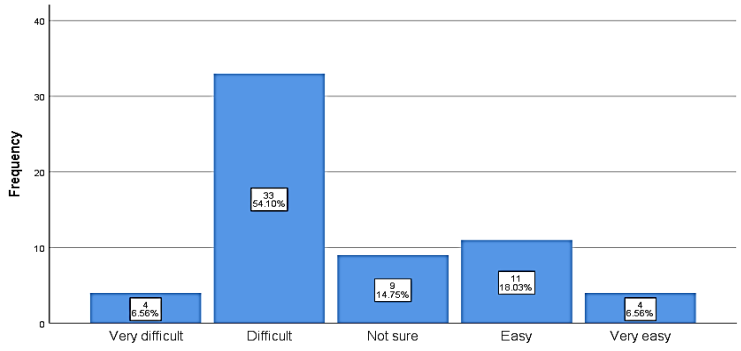

Figure 4: Recognising the differences between words similar in pronunciation and spelling

As shown in Figure 4 above, 60% of the participants stated that words with similar pronunciation and spelling were hard to distinguish and caused confusion. Only 24% of them regarded these types of words as easy or very easy to learn, while 14% were uncertain in this regard.

4.2 Meaning challenges

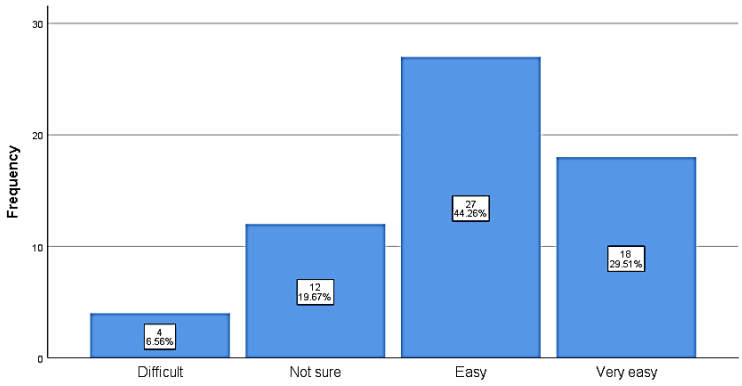

Figure 5: Understanding the meaning of new words through context

The participants were asked to indicate whether guessing the meaning of medical vocabulary through context was an easy or difficult task. 73% of the participants reported that guessing the meaning of medical terms from the context is either easy or very easy, while only 6% of them said it was hard.

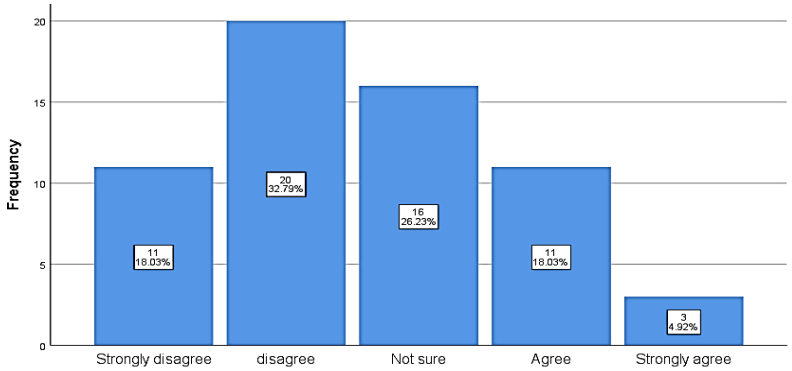

Figure 6: Distinguishing words with similar meanings poses difficulties

50% of the participants, as shown in Figure 6 above, either strongly disagreed or disagreed that synonyms present challenges for them. While 26% of the participants were uncertain regarding whether synonyms present challenges or not, 22% of them either agreed or disagreed that words with similar meanings were difficult to learn.

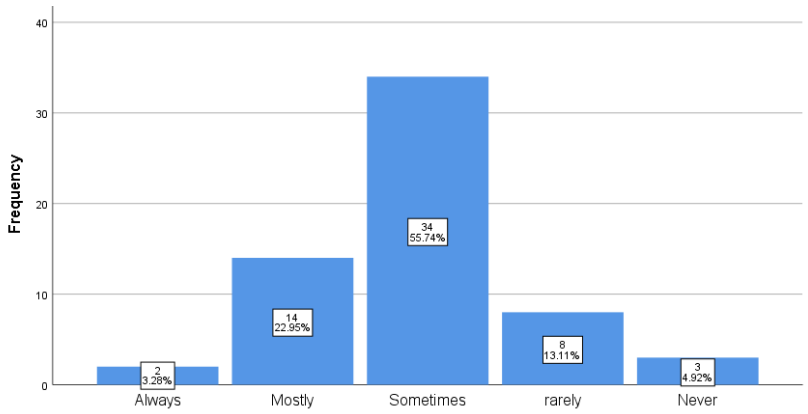

Figure 7: I find it hard to recall some of the medical words I have learned

As shown in Figure 7 above, the majority of the participants, 77%, reported either sometimes or mostly encountering difficulties in recalling the meaning of medical terms. Only 17% of them stated that they either rarely or never experienced obstacles in remembering medical terms.

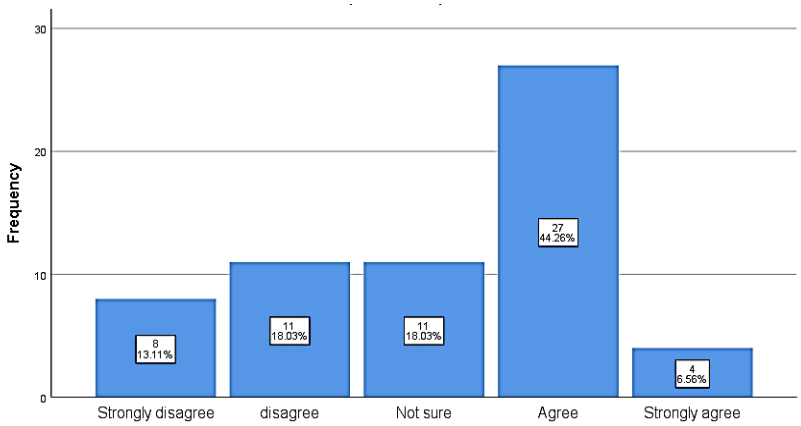

Figure 8: I find it challenging to make a distinction between words which have more than one related meaning

As for polysemous words, 50% of the participants either agree or strongly agree these words are challenging to learn. In contrast, 31% either disagreed or strongly disagreed that polysemy causes challenges, whereas 18% were uncertain whether such words presented any obstacles.

4.3 Vocabulary use challenges

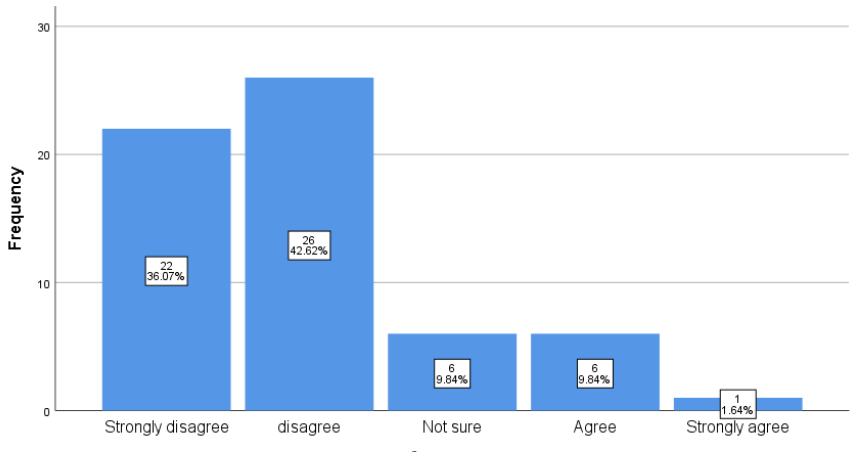

Figure 9: Using new words in sentences presents difficulties for me

The majority of the participants, 70%, either agreed or strongly disagreed that using medical vocabulary in sentences was difficult, while 9% were unsure. A small percentage, 11%, disagreed that using words in sentences is problematic.

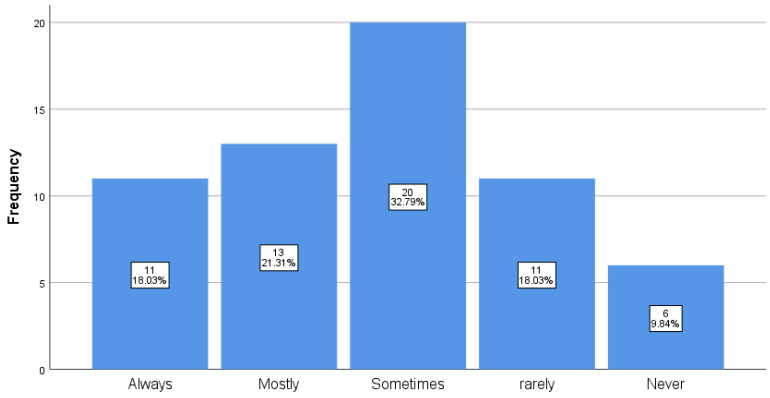

Figure 10: I get confused between word classes

53% of the participants mentioned that they either sometimes or usually use the wrong word classes of medical terms, whereas 27% of them either rarely or never use the right grammatical category of a medical word appropriately.

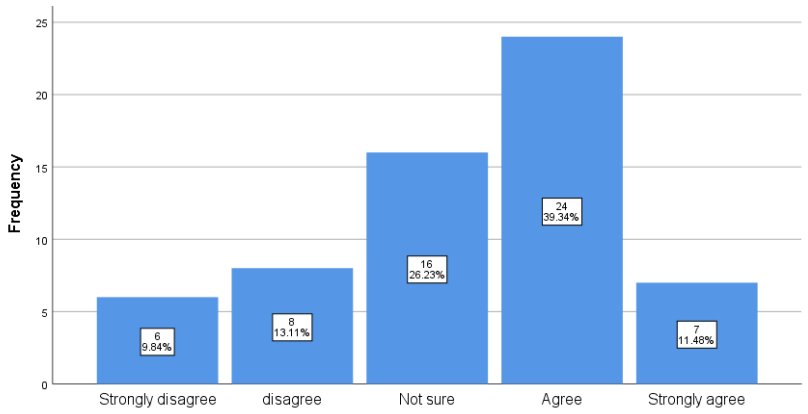

Figure 11: Collocations of medical terms present challenges

The participants were asked about how challenging the use of the right collocations with medical terms is. 50% of them either agreed or strongly agreed that using correct collocations was an uneasy task. 26% of the participants expressed uncertainty, while 22% of them either disagreed or strongly disagreed that collocations of medical words were hard to use.

5. Discussion

The results of the study were discussed in relation to the research questions, which aimed to investigate the vocabulary learning challenges among medical students and how EFL programs for medical students can be improved.

5.1 Vocabulary learning challenges

The findings showed that several aspects of vocabulary knowledge present obstacles for medical university students.

Word form aspects, such as spelling and pronunciation, were considered obstacles by several participants. Abbreviations were reported to be difficult to learn by some participants due to the multiple meanings they might carry. In other words, the same abbreviation might carry different meanings depending on the context in which they are used. For instance, PT can refer to physical therapy or prothrombin time.

Furthermore, the pronunciation of medical words was also emphasised as a challenge by several participants. These results are in line with the findings of Khan (2016), who pointed out that the sound and spelling system of vocabulary poses obstacles for medical Saudi professionals. Pronunciation for EFL Arab students is a common language learning hurdle due

to the huge gap between Arabic and English. For instance, Arabic has only one letter for each sound, while in English, a certain sound is sometimes represented by more than one letter (Sabbah, 2015). Words that sound alike but have different meanings or spellings, such as “vein”, “vain”, “ileum” and “ilium”, might confuse learners and lead to serious communication errors or misdiagnosis.

One interesting finding in this research was that the majority of participants reported not facing difficulties in understanding prefixes and suffixes in medical vocabulary. However, these results contradict those of Kennedy & Bolitho (1984), who found that some students apply prefixes and suffixes inappropriately. It could be argued that the participants’ responses may not fully reflect their actual beliefs and practices.

Learning the meaning of medical vocabulary was also indicated as a challenge by some participants. For example, polysemous words tend to present problems, as some words have both a common meaning in everyday English and a technical meaning. For instance, the word “discharge” in general English means to release, but in medicine, it can mean a bodily fluid or being released from a hospital. The context can provide students with sufficient information to identify the purpose of using a particular word (Prince, 1996). Hence, students can detect the meaning of some words using contextual clues.

Another meaning-related challenge is the plethora of synonyms in medical vocabulary. The linguistic phenomenon of synonymy can enrich language vocabulary and stylistic variations. Nonetheless, absolute synonyms are scarce, and there are usually differences in connotations, intensity or usage between synonyms. A good example is the words: “disease”, “illness”, and “disorder”. These words all relate to health problems but are used in different contexts. For instance, “*disease”* implies a pathological condition, while “*illness”* is more subjective and emotional. “*disorder”* often refers to mental or chronic conditions. Hence, even medical terms which appear to be synonymous can vary in terms of their formality, usage, context, precision, or connotation. One should be cautious towards using synonyms since their inappropriate use can often lead to misunderstanding and wrong interpretation

Moreover, the participants reported difficulties in recalling the words they had learned. One reason behind this difficulty is that medical students are forced to learn many new words in a limited time. Similar results were reported by Rohrer & Pashler (2007), who revealed that

introducing students to a large amount of new information within a short time might negatively impact their retention abilities.

As for word use, word classes and collocations were reported as problems. This could be attributed to the participants' unfamiliarity with how medical words are used properly. Besides, in the Libyan context, doctors and medical students usually use English medical terms with Arabic to communicate. In other words, they use Arabic structures and English vocabulary simultaneously. As a result, they believe that using English words alone is sufficient to convey the meaning. These results are congruent with those reported by Osman (2020), which indicated that Sudanese medical students encounter similar problems in using medical vocabulary collocations. Learning words out of context and relying on memorising definitions might lead to this problem. In other words, students might primarily focus on word meaning and neglect the different grammatical categories of words. Besides, interference with the learners' first language can lead to using the wrong collocations. For instance, some Arab students might say "*strong fever*" instead of "*high fever*" due to the negative transfer from Arabic.

5.2 Suggestions for improving English programs at the faculties of medicine

The results of the study indicated that various aspects of word knowledge present challenges to medical students at the University of Gharyan. This section suggests some tips for overcoming some of these challenges.

- Students should receive sufficient training on pronouncing medical vocabulary, which appears more complex than general vocabulary. If possible, a language lab could be utilised to expose students to various dialogues in the medical context and practice them to improve their fluency and pronunciation.
- The cognitive load of the students should be reduced by teaching a limited vocabulary per session. Additionally, teachers can implement consolidation activities to enhance students' vocabulary retention as those suggested by Thomson & Mehring (2016), which involve spaced repetitions of vocabulary.
- Another important tip is encouraging students to use medical words in sentences when speaking or writing. One way that could serve this purpose is implementing role-play activities where students could take different roles as doctors or patients, as in real scenarios and utilise medical terms a convey a particular message.

- Suffixes are significant constituents of medical vocabulary. Hence, students should be trained to decipher the meaning of vocabulary by breaking down words into prefixes, roots, and suffixes. Familiarising students with the meaning of affixes is an essential step towards mastering medical vocabulary.

6. Conclusion

This paper attempted to investigate the challenges encountered by medical students at the University of Gharyan in learning English medical vocabulary. The difficulties investigated were related to vocabulary meaning, form and use.

Pronunciation and words with similar spellings were among the most encountered challenges related to the form of medical vocabulary. In terms of meaning, the results of the study indicated that polysemy and synonymy present obstacles for students. In addition, several students reported resorting to context clues to interpret the meaning of new words. Another interesting finding was that many students reported encountering challenges in recalling medical vocabulary, which might be due to cognitive overload. With regard to vocabulary use, few students believed that using medical words in sentences was not problematic. However, several participants considered using the right word class and appropriate collocation with a medical word challenging.

The results of this study should encourage policymakers at Libyan universities to revaluate the current EMP programs to address these vocabulary learning challenges. Providing modern language labs and developing the curriculum are essential steps towards reform. Additionally, training EFL teachers on teaching medical vocabulary through interactive activities, such as role-playing, debates and presentations, could help students improve their medical vocabulary knowledge not only in terms of form and meaning but also in terms of use.

The current study focused on the problems faced by first-year medical students at the University of Gharyan in learning English medical vocabulary. It utilised a quantitative research approach to gather the data. Other researchers could utilise a mixed methods study involving quantitative and qualitative data collection and analysis to add valuable insights into the area of EMP by probing deeper into students' perceptions and experiences of medical vocabulary learning. Furthermore, the word retrieval challenge reported by the participants in this study can encourage other researchers to investigate this area further. For instance, research on the effectiveness of vocabulary consolidation strategies can examine what types of

vocabulary learning strategies are more effective in enhancing medical students' vocabulary retention skills.

References

Abdullah, G. M. (2013). Strategies and approaches for teaching and learning of medical terminology. *International Journal of English and Education Vole*, *2*.

Abuklaish, A. (2014). *Investigating the language needs of undergraduate science students in Libya* (Doctoral dissertation, University of Southampton).

Ahmed, K. M., Peeran, S. W., & Ahmed, M. A. Q. (2015). Attitudes of Libyan dental and medical students toward the use of English language as a medium of instruction. *Dentistry and Medical Research*, *3*(2), 53-58.

Al-Areibi, A. (2019). Medical education in Libya: Challenges, hopes, and recommendations. *Libyan International Medical University Journal*, *4*(01), 3-9.

Almushwat, R., & Elkout, H. (2024). Language Barriers in Studying Medicine in English: Concerns and Attitudes of Clinical Phase Medical Students at the University of Tripoli. *AlQalam Journal of Medical and Applied Sciences*, 1022-1030.

Alshibany, E. (2018). *Libyan teachers' beliefs about teaching English as a foreign language at preparatory and secondary schools: Teaching methodology, curriculum and professional development* (Doctoral dissertation, University of Huddersfield).

Annajeh, A, Abdusalam (2023). *Challenges facing 4th Year Health Sciences College Students in Gharyan University in Learning/Translating English Medical Terms into Arabic. Gharyan University Journal*, *28*,462-484

Baethge, C. (2008). The languages of medicine. *Deutsches Arzteblatt international*, *105*(3), 37.

Benamer, H. T., & Bakoush, O. (2009). Medical education in Libya: the challenges. *Medical teacher*, *31*(6), 493-496.

Brown, J.D. (2001). *Using Surveys in Language Programs.* Cambridge, UK: Cambridge University Press.

Cappuzzo, B. (2008). Eponyms or descriptive equivalent terms? The question of scientific accuracy in medical discourse. *Esercizi, Miscellanea del Dipartimento di Scienze Filologiche e Linguistiche, 2*, 25-35.

Chouchane, A. (2016). Pronunciation difficulties for Arab learners of English. *Global English-Oriented Research Journal (GEORJ), 2*(2), 205-2015.

Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education*. Routledge.

Crystal, D. (2003). *English as a global language*. Cambridge university press.

Dornyei, Z. (2007). *Research methods in applied linguistics*. Oxford University Press.

Dörnyei, Z., & Csizér, K. (2012). How to design and analyze surveys in second language acquisition research. *Research methods in second language acquisition: A practical guide*, *1*, 74-94.

Dudley-Evans, T., & St John, M. J. (1998). *Developments in English for specific purposes*. Cambridge university press.

Faraj, B. M. A. (2015). English for medical education in EFL context. *Journal of Teaching English for Specific and Academic Purposes*, *3*(1), 121-148.

Ferguson, G. (2012). English for medical purposes. The handbook of English for specific purposes, 243-261.

Gablasova, D. (2014). Learning and retaining specialized vocabulary from textbook reading: Comparison of learning outcomes through L1 and L2. *The Modern Language Journal*, *98*(4), 976-991.

Goumovskaya, G. (2007). English for medical studies. Angliiskii iazyk, 24.

Graddol, D. (1997). *The future of English?: A guide to forecasting the popularity of the English language in the 21st century*. British Council.

Gu, P. Y. (2003). Vocabulary learning in a second language: Person, task,context and strategies.TESL-EJ,7(2), 1-25.

Hutchinson, T., & Waters, A. (1987). *English for specific purposes*. Cambridge university press.

Ichiyama, Y. (2018). *An item bank development to include test items assessing orthographic and phonological processing skills at the faculty of nursing* (Doctoral dissertation, Durham University).

Kennedy, C., & Bolitho, R. (1984). English for specific purposes:

Khan, I. A. (2016). Difficulties in mastering and using English for specific purpose (medical vocabulary): A linguistic analysis of working Saudi hospital professionals. *International Journal of Education*, *8*(1), 78-93.

Laufer, B. (1997). The lexical plight in second language reading: Words you don't know, words you think you know, and words you can't guess. *Second language vocabulary acquisition: A rationale for pedagogy*, *1*, 20-34.

Maher, J. (1986). English for medical purposes. *Language teaching*, *19*(2), 112-145.

Mauranen, A. (2010). Features of English as a lingua franca in academia. *Helsinki English Studies*, *6*(6), 6-28.

Munn, P., & Drever, E. (1990). *Using Questionnaires in Small-Scale Research. A Teachers' Guide*. Scottish Council for Research in Education, 15 St. John Street, Edinburgh, EH8 8JR, Scotland, United Kingdom.

Nation, I. S. (2008). *Teaching ESL/EFL reading and writing*. Routledge.

Nation, I. S., & Nation, I. S. P. (2001). *Learning vocabulary in another language* . Cambridge: Cambridge University Press.

Neuman, S. B., & Dwyer, J. (2009). Missing in action: Vocabulary instruction in pre-K. *The reading teacher*, *62*(5), 384-392.

Orafi, S. M. S. (2008). *Investigating teachers' practices and beliefs in relation to curriculum innovation in English language teaching in Libya* (Doctoral dissertation, University of Leeds).

Osman, K. (2020). Overcoming the Impediments that Encounter Medical Students' Understanding for Terminologies and Vocabularies.

Paltridge, B. & Starfield , S. (2013). The handbook of English for specific purposes.

Rose, H., McKinley, J., & Baffoe-Djan, J. B. (2019). *Data collection research methods in applied linguistics*. Bloomsbury Academic.

Pennock, C. (1979). Reading comprehension at four linguistics levels. New Jersey: International Reading Association, Inc

Rohrer, D., & Pashler, H. (2007). Increasing retention without increasing study time. *Current directions in psychological science*, *16*(4), 183-186.

Sabbah, S. (2015). Negative transfer: Arabic language interference to learning English. *Arab world English journal (AWEJ) Special issue on Translation*, (4).

Scheuer, S. (2010). Making English a New Latin. *Research in Language*, *8*, 203-215.

Schmitt, N., & Schmitt, D. (2020). *Vocabulary in language teaching*. Cambridge university press.

SHIHIBA, S. (2011). *An investigation of Libyan EFL teachers' conceptions of the communicative learner-centred approach in relation to their implementation of an English language curriculum innovation in secondary schools* (Doctoral dissertation, Durham University).

Shuhratovna, M. G. (2024). Linguistic Characteristics of Medical Terminology and Methods for the Formation of New Medical Terms. *Excellencia: International Multi-disciplinary Journal of Education (2994-9521)*, *2*(5), 215-219.

Sinadinović, Danka. (2013). The importance of strategies in learning and acquiring medical English Vocabulary. JAHR, 4(7), 273-91

Tamtam, A. (2014). *University students and teaching staff attitudes toward language of instruction in Libyan science and engineering education* (Doctoral dissertation, Dublin City University).

Thomson, R. & Mehring, J. (2016). Better vocabulary study strategies for long-term learning. *Kwansei Gakuin University Humanities Review*, *20*, 133-141.

Viel, J. C. (2002). The vocabulary of English for scientific and technological occupational purposes. *InEnglish for Specific Purposes World, Web-basedJournal*.

Vrběcká, D. (2019). English for Medical Purposes: Activating Teaching Methods and their Influence on Vocabulary Acquisition.

Wilkins, D. A. (1972). *Linguistics in language teaching*. London: Edward Arnold.

Woodward-Kron, R. (2008). More than just jargon–the nature and role of specialist language in learning disciplinary knowledge. *Journal of English for Academic Purposes*, *7*(4), 234-249.