

Yemeni medicine students' competence in medical English collocations

Abdullah Al-Eryani¹, Abdulwadood Annuzaili² & Sadiah Alwesabi³

¹*Thamar University, Sana'a, Yemen*

²*Sana'a University, Sana'a, Yemen*

³*21 September University for Medical and Applied Sciences, Sana'a, Yemen*

Abstract

This article focuses on Yemeni medicine students' competence in medical English collocations and the potential challenges impeding their competence in medical English collocations. A mixed quantitative and qualitative approach was adopted by means of two tools: a collocational receptive-productive competence test and a closed-ended questionnaire. The results reveal Yemeni medicine students' incompetence in medical English collocations, with an overall 30.38% of correct answers in the receptive test and 34.5% in the productive test. EMP teachers' insufficient awareness of medical collocations, EMP syllabuses disregard of medical collocations, adoption of traditional methods in teaching EMP, and students' unawareness of the importance of medical collocations are listed as the main challenges hindering students' competence in medical English collocations.

Key words: collocational competence; medical English; Yemeni medicine-students.

1. Introduction

English, the lingua franca of international communication, plays an important role in many fields, including medical sciences (Karimnia, 2018). Its global prominence across a wide range of intellectual, academic, and scholarly affairs has led to the development of various forms of English, including English for Specific Purposes (ESP). ESP is a trait of English language teaching that is substantial in determining the needs and requirements of English language learners. It is used in universities to serve academic purposes (Najafi & Talebinezhad, 2018), for which any academic field should improve its related vocabulary, such as legal and medical registers (Fareh & Hamadi, 2019). ESP courses are typically infused with specialized vocabulary that makes any field specific and enables students to communicate effectively in that field.

English for Medical Purposes (EMP) is a subfield of ESP that focuses on teaching medical language to medicine students. The importance of teaching EMP is that all the greatest medical discoveries are published in English (Sinadinović, 2013). Bozdechova (2006: 9) states "[k]nowledge of English as a contact language in our common world medicine has become just as necessary as knowledge of medicine itself if we wish to work in that field with a good feeling of a lifelong calling." Although the importance of medical language has increased significantly, "there is no recognized discipline called medical linguistics" (Džuganová, 2019: 130).

According to Najafi and Talebinezhad (2018), vocabulary plays a central role in language teaching and learning, and students cannot communicate without vocabulary. Moreover, Fareh and Hamadi (2019) maintain that learners need to master language to achieve proficiency in language, and lexical competence is essential for learning the vocabulary of a language. The purpose of learning vocabulary is to use it effectively in a given context. Besides, knowing the meaning of a word implies knowing its denotative and connotative meanings and collocations. As such, a language learner needs to realize how a word is used in context with other words, preceding or following, and this is what collocational competence entails.

In reference to the importance of collocational competence as a crucial constituent of second language mastery, El-Dakhs (2015) highlights that language fluency requires knowledge of collocations. It involves the successful comprehension and production of collocations in language use. El-Dakhs (2015: 60) adds "collocational competence largely contributes to vocabulary knowledge and hence to language proficiency." In particular, collocational competence includes two dimensions of knowledge: receptive and productive. Receptive competence is the ability to know and understand the meaning of a word, whereas productive competence is the ability to recall and use a word in the required context successfully. However, most students of English as a Foreign Language (EFL) demonstrate poor knowledge of collocations, which arises from the difficulty of understanding and producing such combinations (Jeensuk & Sukying, 2021).

Research on collocational competence has shown that this issue continues to hinder L2 students and speakers from communicating effectively in many academic and professional settings. In the context of this study, it has been observed that although all postgraduate medicine institutions have already introduced many EMP courses, teaching medical English collocations is still insufficient, if not neglected. This status quo makes Yemeni medicine students encounter notable challenges in their medical English, particularly in relation to comprehending and producing medical collocations. Therefore, this study is devoted to investigating Yemeni medicine students' competence in medical English collocations. It also seeks to explore the challenges con-

fronting Yemeni medicine students in understanding and using medical English collocations.

2. Literature review

Teaching and testing collocational competence has been the concern of many researchers and educators. Ward (2007) claimed that collocations are more specialized and sub-disciplinary specific than the individual words themselves; therefore, it is necessary to draw students' attention to the collocations used in their discipline (Hyland & Tse, 2009). Nesselhauf (2005) and Bardovi-Harlig and Bastos (2011) argued that even advanced L2 speakers with many years of prior instruction, both formal and immersion-based, still experience difficulties when recognizing and producing collocations. For Macis et al. (2021), students' comprehension of English collocations does not necessarily reflect creative proficiency with colloquial expressions, nor does their collocational competence advance as their vocabulary knowledge does. However, according to Siyanova-Chanturia and Spina (2015), the ability to recognize and produce frequent collocations increases along with L2 learners' language proficiency level and overall vocabulary knowledge. On the other hand, collocational competence has been connected to the overall level of L2 proficiency (Gitsaki, 1999; Groom, 2009; Laufer & Waldman, 2011; Nizonkiza, 2015), suggesting that collocational errors might gradually decrease but never disappear even at the most advanced stages.

Many studies have attempted to identify the reasons for this long-lasting challenge. For example, some researchers (Wolter & Gyllstad, 2013; Wolter & Yamashita, 2015; Yamashita & Jiang, 2010) drew parallels between L1 and L2 similarities and/or differences and their impact on collocational knowledge. In this regard, Irujo (1986) identified two types of collocations: those that are somewhat similar to L1 and are easily comprehended, yet equally easily confused, and those that are identical and are, therefore, the easiest to produce. Besides, Nesselhauf (2005) concluded that congruent collocations are less challenging for non-native English speakers and contain fewer errors. However, for Hasselgren (1994) and Smith (2005), a collocation's similarity with its L1 equivalent can actually be misleading and might cause negative L1 transfer.

One of the most frequently mentioned and probably the most elusive factor impacting collocational competence has been intuition (Makinina, 2018). In this regard, Macis and Schmitt (2017) argued that identification and production of collocation components are likely based on intuition, because the links between formulaic sequences of collocation components are not easily explained or memorized, and the meaning of collocations is not always clear. As such, when learners do not remember an exact collocation in L2,

they might resort to the strategy of approximation, conditioned by L1 programmed thinking (Makinina, 2018). They either directly translate collocations word-for-word from L1 to L2, which is not effective because collocations do not consist of separate words but rather of chunks (Han, 2004), or they provide an approximate translation in which one or several components correlate with L2 while the rest belong to L1 (Smith, 2005).

Some other researches focus on the quality of L2 input and output. In this regard, Durrant and Schmitt (2010), Macis and Schmitt (2017), Pellicer-Sánchez (2017), and Szudarski and Carter (2016) found positive results in collocational progress for learners who spend time reading and being frequently exposed to collocations. Similarly, Pavičić Takač and Miščin (2013) indicated that being continuously exposed to medical English and actively using it results in an increase in the level of the learner's knowledge of collocations. Webb et al. (2013) also proposed that more encounters with the target words did result in better learning of collocations. Moreover, Bardovi-Harling and Bastos (2011) observed a positive influence when there is an intensive interaction, both input and output, with native speakers of English in different communicative situations outside the regular learning environment. However, Adolphs and Durow (2004) and Bardovi-Harling and Bastos (2011) found that for international students living in host families, mere exposure to language might not be enough for progress, especially when learners spend time in groups of other international students who speak their primary language.

Although authentic L2 input and output are important, it has been suggested that L2 immersion without systematic instructional support might actually be detrimental for adult learners because they are not able to acquire formulaic sequences simply by listening and imitating L1 speakers (Kuo, 2009; Wray, 2008). It has been also claimed that the older learners are, the more attention needs to be paid to learning and teaching collocations explicitly in a range of authentic contexts (de Wit, 2007; Ghasemi, 2003; Lakshmanan, 2006; Wray, 2008). Besides, there has been a predominant agreement that formulaic sequences, such as idioms and collocations, should be prioritized over learning single word units since they are more difficult to master (Lewis, 2000; Peters, 2014).

Finally, in relation to collocation frequency of occurrence, it has been commonly admitted that higher-frequency collocations are generally perceived and produced more efficiently and with fewer errors by the L2 speakers (Durrant & Doherty, 2010; Granger & Bestgen, 2014; Siyanova-Chanturia & Spina, 2015; Wolter & Gyllstad, 2013).

3. Purpose of the study

The vital pedagogic goal of the various EMP courses is to introduce students to motivating experiences and a greater amount of exposure to the different norms and voices of interpersonal talk in medical contexts in the target language. Besides, understanding medical English collocations is a core issue for the students of medicine to comprehend medical texts sufficiently and to use medical language adequately. Review of the literature above has shown that collocational competence is a crucial constituent of second language mastery. Given that collocational competence is a challenging task for L2 learners that never disappear even at the most advanced stages, a large proportion of research, however, focused on either collocational competence broad-wise or the reasons of this long-lasting challenge. In a definite way, this paper provides a twofold perspective to investigating medical collocations competence and the potential challenges of collocational competence. The outcomes are expected to unfold further countenances of collocational competence and to help educing functional pedagogic recommendations and theoretical implications for future research.

4. Research questions

Based on the two dimensions of collocational competence, the present study seeks to answer the following questions:

1. To what extent are Yemeni medicine students able to recognize medical English collocations?
2. To what extent are Yemeni medicine students able to produce medical English collocations?
3. What are the challenges that Yemeni medicine students are confronted with in relation to understanding and using medical English collocations?

5. Methodology

This study aims to examine Yemeni medicine students' competence in medical English collocations at the receptive and productive levels. It also endeavors to figure out the possible challenges impeding students' collocational competence. In order to achieve these objectives, a quantitative and qualitative approach was followed. The quantitative method was used in the numerical calculations and statistical processes carried out on the frequencies of responses provided by the participants. The qualitative method, on

the other hand, was adopted in the analysis and discussion of the results obtained from the participants.

5.1. Research tools

5.1.1. Competence test

The first tool was a competence test used to investigate Yemeni medicine students' competence in medical English collocations. The collocations given in the test were selected from the most common collocations found in EMP textbooks used for teaching English to medical students. Collocations of different types were used in the test, such as verb-noun, adjective-noun and verb-preposition collocations. This test was designed in the form of two subtests: a receptive test and a productive test, based on the two dimensions of collocational competence.

At the receptive level, a test consisting of three parts was designed. Part one included 15 multiple-choice items in which the participants were asked to select the most appropriate verb-noun collocating option. Part two comprised 20 error-detection items of mixed collocations. The task in this part was to underline the erroneous collocations and correct them. Part three contained 15 adjective-noun matching items. In this part, the participants were given a list of fifteen adjectives and another list of fifteen nouns to make correct collocations.

The second subtest focused on the participants' productive competence in medical English collocations via three types of tasks. Task one involved the translation of 20 medical collocations: ten verb-noun collocations from English into Arabic and ten noun-noun collocations from Arabic into English. However, in pursuit of the test focus, spelling and grammar mistakes were disregarded in this task. Task two included 15 completion items in which the participants were asked to fill in the blank space with the word that best completes the collocation. A list of 15 words was given at the beginning of the task from which the collocations can be completed. Task three comprised 15 fill-in-the-gap items, where the participants had to select the appropriate preposition from a given list to complete the collocation.

5.1.2. Closed-ended questionnaire

The second tool was a closed-ended questionnaire consisting of 12 statements using a five-point Likert scale of responses: strongly agree, agree, neutral, disagree, and strongly disagree. This tool was used to collect data pertaining to the challenges confronting Yemeni medicine students' collocational competence in medical English from EMP teachers' points of view. The respondents were asked to provide their views on different

issues related to the current practice of teaching and learning medical English collocations, such as teaching methods, course content, and teachers and students' attitudes towards medical English collocations.

5.2. Participants

This study recruited two groups of participants. The first group consisted of 150 Yemeni medicine students who participated in the competence test. The participants of this group were selected purposefully, upon their willingness to take part in the study, from the Faculties of Medicine at three Yemeni universities in Sana'a, namely, Sana'a University, 21 September University for Medical and Applied Sciences, and the University of Technology and Sciences. These participants were enrolled in their second year of study and had already taken a number of EMP courses. The second group included ten Yemeni EMP teachers selected from the universities mentioned above. The participants of this group were also selected non-randomly based on their volunteer participation. They took part in the close-ended questionnaire on the challenges confronting Yemeni medicine students' collocational competence in medical English.

5.3. Data analysis

The competence test included two parts, each consisting of 50 items. In each part, the participants were awarded one scoring point for each correct answer. This scoring system resulted in a total score of 100 points for the entire test. Scores of the receptive tasks were counted in terms of choosing the correct options, underlining and correcting erroneous collocations, and matching collocating words successfully. In the productive tasks, scores were counted based on the accurate completion of the missing part of collocations. As for the Arabic and English translations of medical collocations, scores were counted according to their acceptance in the target language regardless of grammatical and spelling errors. A statistical and numerical configuration of the collected data was used to analyze the participants' receptive and productive collocational competence, with the goal of understanding the overall patterns of responses and identifying any noteworthy outcomes. This procedure was carried out by calculating the frequency and percentage of the correct answers and tabulating the gathered data to provide a systematic depiction of Yemeni medicine students' collocational competence in medical English. In relation to the data collected from the questionnaire, the analysis was carried out based on the frequencies of the responses given by EMP teachers on the five-point Likert scale: strongly agree, agree, neutral, disagree and strongly disagree.

6. Results and discussion

6.1. Receptive competence in medical English collocations

With regard to the three tasks of the receptive-based subtest, the data collected from the participants yielded the results demonstrated in Table 1.

Table 1: Overall frequency of correct answers at the receptive level

No.	Task	Type of collocation	Correct answers		
			Figure	Percentage	
				OG	WG
A	multiple choice	verb - noun	931	41.4	12.4
B	error detection and correction	Mixed	403	13.5	5.3
C	matching items	adjective - noun	945	42	12.6
Total			2279	30.38	

The results in Table 1 show that the overall percentage of correct answers given by the participants in the three tasks of the receptive competence subtest was notably low (30.38%). More specifically, the participants appeared mainly incompetent in detecting erroneous medical English collocations. Out of all the answers provided by the participants in this task, only 13.5% of them were correct. Moreover, the percentage of within-group (WG) correct answers of this task accounted for 5.3% only, indicating that the majority of the participants had difficulties in recognizing erroneous collocations and, then, could not correct them. In some cases, the participants were able to notice and underline the errors, but they did not provide correct answers. On the other hand, some participants recognized the erroneous collocations but provided wrong answers. Further, none of the participants was able to recognize the errors in *detect pathogens*, *discontinue treatment*, *physiotherapists design* and *cognitive decline*.

The participants' inadequate performance in this task might be attributed to the following reasons. On the one hand, it seems that they had never read or heard about the majority of the collocations given in the test because they had not had enough exposure to a wide variety of English medical texts. This finding harmonizes with Pavičić Takač and Miščin's (2013) finding that continuous exposure to and active use of medical English increased students' knowledge of collocations. On the other hand, erroneous combination of collocating words can be attributed to the participants' general incompe-

tency in English and their limited medical vocabulary, which led them resort to the use of easy and common words. For example, the verbs *make*, *take* and *get* were used by some participants in creating unusual collocations such as:

- (1) *surgeon makes*
- (2) *take insulin*
- (3) *get asthma*

Besides, only 4% of the participants recognized the accurate association between *develop* and *asthma*. This outcome is inconsistent with Bardovi-Harlig and Bastos (2011) and Nesselhauf (2005) who proposed that even advanced L2 speakers still experience difficulties when recognizing and producing collocations. Moreover, the uncommon collocations resulted from using the verb *have*, as in *have tablets* and *have dizziness*, are the likely outcomes of overgeneralization or negative influence of L1. In the same pattern, the majority of the participants collocated the verb *reduce* with the noun *pain*, for which only 16.6% of the participants recognized the appropriate collocation between *relieve* and *pain* and the correct association of *reduce* with other words. This finding echoes with Duan and Qin (2012) who found that most of the collocation errors made by Chinese EFL students were mainly attributed to L1 negative transfer and overgeneralization. Similarly, Sipayung and Saragih (2023) concluded that poor first language transfer is to blame for the collocational errors made by EFL learners.

Further, the results in Table 1 reveal that multiple-choice task posed the second greatest difficulty in the receptive competence test. The percentages of correct answers in this task are relatively low, 41.4% for out-of-group (OG) and 12.4% for WG, disclosing that 58.6% of the participants were unable to identify the suitable verb-noun combination of medical collocations. It was also observed that none of the multiple-choice items in the test overpassed 66% of correct answers. The most difficult collocation to recognize was *pop blisters* with only 20% of correct answers, while the easiest one was *remove bandage* with 65.3% of correct answers. The difficulty of selecting relevant collocating words can be attributed to the participants' insufficient awareness of the appropriate connections between specific constituents of medical collocations. Additionally, L1 negative transfer was detected in the erroneous association made between verbs and nouns, such as:

- (4) *give effect*
- (5) *describe drug*
- (6) *make a surgical dialysis*
- (7) *remove blisters*

This could be attributed to the participants' previous knowledge of the Arabic meaning of such verbs and the ways they normally collocate with nouns

in native medical contexts. That is, in Arabic the verbs *describe* and *make*, for instance, are usually associated with *drug* and *surgical dialysis*, respectively, which made the participants resort to suggesting alternative mental interpretations for the target medical collocations. This outcome is compatible with the findings of some earlier studies that indicated instances of negative transfer in students' recourse to find L1 synonyms or nearest equivalents in cases of incongruence between English and their L1 (Fareh and Hamadi, 2019; Kuo, 2009; Zughoul and Abdul-Fattah, 2003).

The participants' inadequate performance might also be attributed to the use of approximation in recognizing collocations with uncommon use. When they appeared unfamiliar with some collocations or were unable to identify the correct co-occurrence, they inclined to estimate word combinations inaccurately, as in:

(8) a. *attract virus*

(8) b. *distract virus*

The majority of the participants (78%) were not able to recognize the natural co-occurrence between the verb *contract* and the noun *virus* in medical English. The same misleading process is also observed in suggesting the improper collocation *relapse a hip* by many participants. This finding is compatible with Barnbrook et al. (2013) and Metin and Karaoğlan (2011) who noted that it is easier for ESL speakers to recognize and produce collocations with common use versus collocations with rare use. Besides, Pavičić Takač and Miščin (2013) concluded that among the problems exhibited by Croatians studying medical English was the use of approximation in identifying and producing medical collocations.

Another incidence of inadequate performance was identified in matching adjective-noun collocations. The percentages of correct answers in this task of the receptive test are 42% for OG and 12.6% for WG, which are still low. These results unveil the participants' inability to recognize the proper connection between adjective-noun medical English collocations. The only collocations that overpassed 100 correct matching were *vital signs* and *pale skin* with 77.3% and 70.6% of correct answers, respectively. In contrast, the most erroneously matched collocation was *general disorder* (instead of *general health*), which scored only 6% of correct answers. Another illogical matching was found in suggesting the collocation *runny voice* (instead of *runny nose*). Such erroneous matching could be attributed to the less variable forms of these types of collocations, which present more of a challenge for Yemeni medicine students, regardless of their knowledge of medical English. This outcome agrees with Boers et al. (2014), Eyckmans (2009), Gyllstad (2007) and Pellicer-Sánchez (2017) who claimed that verb + noun and adjective +

noun collocations were more difficult for second language learners because of their less variable forms and less transparent meaning.

6.2. Students' productive competence in medical English collocations

In relation to producing medical English collocations, the answers given by the participants in the three tasks of the productive-based subtest generated the results in Table 2.

Table 2: Overall frequency of correct answers at the productive level

No.	Task		Type of collocation	Correct answers		
				Figure	Percentage	
					OG	WG
D	Translation	English-Arabic	verb-noun, noun-noun	625	41.7	8.3
		Arabic-English	verb-noun, noun-noun	211	14.1	2.8
Total				836	27.9	11.1
E	Completion		Mixed	942	41.9	12.5
F	Fill-in		verb-preposition	808	35.9	10.7
Overall Total				2586	34.5	

Across all the three tasks of the productive-based subtest, the results given in Table 2 reveal the participants' lack of competency in relation to producing medical collocations, for the overall percentage of OG and WG correct answers in the whole subtest is only 34.5%. In particular, the frequency of the correct answers in the English-Arabic translation sub-task is quite low (41.7%). In this regard, it was observed that less frequent collocations appeared to be more translation-resistant than more frequent collocations. For example, *commit suicide* was inadequately translated into Arabic as:

- (9) a. *yagum bil-intihar* 'do suicide'
- (9) b. *yartakibu al-intihar* 'make suicide'
- (9) c. *yahawel al-intihar* 'try suicide'

Moreover, the collocation *suppress cough* scored only 22.7% of correct translations. The majority of the participants used inaccurate target verbs in translating this collocation, such as:

- (10) a. *yamna assu'al* 'prevent cough'
- (10) b. *yuthabet assu'al* 'frustrate cough'
- (10) c. *yuaqif assu'al* 'stop cough'

In contrast, collocations of common use, such as *transmit AIDS* and *resist infection*, were translated more successfully with respective scores 70.7% and 70% of correct answers. These outcomes agree with the findings of some earlier studies (Granger & Bestgen, 2014; Siyanova-Chanturia & Spina, 2015; Szudarski & Conklin, 2014; Wolter & Gyllstad, 2013) that collocations with low frequency of occurrence were particularly problematic for ESL learners.

Concerning the Arabic-English translation of collocations, the results show that this task was more difficult than the English-Arabic translation and the most difficult task of the productive test. This pattern was obviously reflected in the participants' very low ratio of correct answers to this task (14.1%). The most difficult medical collocations to translate into English were *ta'am bidun qeemah ghithayiah* 'junk food', *el-tihab al-hanjara* 'sore throat', *shadd adhali* 'muscle cramping,' *hashashat al-'edham* 'bone fragility' and *ayb khalqi* 'birth defect', which scored 3.3%, 3.3%, 6.7%, 8.7% and 9.3% of correct answers, respectively. It was noticed that Latin terms were used occasionally in performing the Arabic-English translation of medical collocations. For example, the word *laryngitis* 'inflammation of the larynx' was used in translating *el-tihab al-hanjara* 'sore throat' and *osteoporosis* 'a condition of brittle and fragile bones' was used in translating *hashashat al-'edham* 'bone fragility'. This indicates that in case the participants failed in recalling the exact English collocation, they resorted to medical Latin terminology. Contrariwise, medical Arabic collocations which have English equivalents, such as 'junk food' and 'muscle cramping', were respectively translated literally as:

- (11) *ta'am bidoon qeemah ghithayiah* 'food with no value/invaluable food'
- (12) *shadd adhali* 'muscle strain'

To put it together, the findings of the translation tasks are relatively consistent with Pavičić Takač and Miščin's (2013) finding that the translation of collocations from English into Croatian and vice versa was the most difficult task in the test.

The results obtained from the completion task emphasize the participants' insufficient competency in producing medical collocations. The quite low frequency of correct answers (41.9%) in this task indicates that the participants were not able, quite largely, to complete the missing parts of medical collocations by using words provided in a word box. The most difficult medical collocations to complete were 'persistent cough' and 'splitting headache' with respective scores 14% and 15.3% of correct answers. On the other hand, the least difficult collocations to complete were 'loss of appetite' and 'medical history,' scoring 65.3% and 64% of correct answers, respectively. It seems that the participants were not thoughtful enough in producing medical collocations correctly since no item in this task recorded higher than 65.3% of correct answers. Furthermore, they appeared to show no reliance

on logic or previous knowledge of medical English, but to perform randomly as correct answers were attainable from other parts of the whole test. Overall, the outcomes of this task correspond to Gyllstad (2007) and Siyanova and Schmitt (2008) who proposed that recognizing or identifying a collocation from a set of different options and making a decision about whether this collocation is common and appropriate in English is a challenging chore of collocational performance.

The low percentage of correct answers in the fill-in task (35.9%) reveals that a large portion of the participants could not use the supplemented list of prepositions to complete verb-preposition collocations successfully. Among the collocations that scored low correct answers in this task were 'consented to the surgery' (11.3%), 'check for signs' (16%) and 'cough up mucus' (18%). Besides, wrong answers were found in the production of some unacceptable combinations, such as 'get up illness' or 'rushed up hospital' rather than 'get over illness' and 'rushed to hospital.' On the other side, the only verb-preposition collocation that got a high score of correct answers (67.3%) was 'admit to hospital,' which seems to be known to most of the participants for its regular use in medical texts describing a common process in daily life. Given that a preposition may have more than one meaning and can be used in different contexts, it appears that English verb-preposition medical collocations represent a confusing juxtaposition for Yemeni medicine students. This outcome accords with Fareh and Hamadi's (2019) finding that verb-preposition collocations constitute a real problem not only for students of medical specializations but also for students learning English as a foreign or second language.

6.3. The challenges hindering students' competence in medical English collocations

With regard to the challenges confronting Yemeni medicine students' competence in medical English collocations, the data collected from EMP teachers' questionnaire were analyzed in terms of four interrelated categories: EMP teachers' attitudes; teaching methods; medicine students' attitudes; linguistic and cultural differences between English and Arabic.

In relation to EMP teachers' attitudes towards medical English collocations, the results for item 1 (Table 3) show that half of the respondents, 10% 'strongly agree' and 40% 'agree,' conceded that EMP teachers do not have enough knowledge of medical English collocations. In addition, 30% of responses went for 'neutral', suggesting EMP teachers' uncertainty about this issue. These results indicate the negative consequences on students' competence in medical English collocations that ensued from EMP teachers' unawareness of medical collocations. In this regard, Howarth (1998) argued that

although collocations are recognized as part of the communicative competence in the learner, the little or no attention given to them in Norwegian course material might be attributed to the teachers' limited knowledge of the phenomenon. Moreover, it can be observed that the majority of the respondents, 30% 'strongly agree' and 40%, 'agree,' acknowledged in item 2 that even though EMP teachers have knowledge of medical English collocations, they still do not give enough attention to them in class. Such a status quo might have different accounts. It could be that EMP teachers are not fully aware of the significance of medical collocations or the way to teach them effectively. On the other hand, it might be that medical collocations are not profoundly integrated into the materials taught to medicine students or EMP teachers prioritize teaching other aspects of the curriculum over medical collocations. Another reason could be that EMP teachers find medical collocations difficult to teach, and, then, show no interest in them. In this regard, Lewis (2000) recommended that collocations are not words that, in some sense, can be put together, they co-occur naturally, and the first task of the language teacher is to ensure that they are not unnecessarily separated in the classroom.

Table 3: EMP teachers' attitudes towards medical English collocations

No.	Item	Strongly Agree		Agree		Neutral		Disagree		Strongly disagree	
		F	%	F	%	F	%	F	%	F	%
1	EMP teachers do not have enough knowledge of medical English collocations.	1	10	4	40	3	30	1	10	1	10
2	Enough attention is not given to medical English collocations by EMP teachers.	3	30	4	40	1	10	2	20	0	0
3	EMP teachers believe that medical English collocations will not add any advantage to medicine students.	1	10	2	20	1	10	4	40	2	20

In spite of the shortcomings above, EMP teachers' realization of the significance of medical collocations was approved quite largely in item 3. The results disclose that more than half of the respondents (40% 'disagree' and 20% 'strongly disagree') were against the view that medical collocations are not advantageous to medicine students. This view emphasizes the potential lack of pedagogical implications, which should be taken into account in light of the teachers' awareness of the importance of medical collocations. In this regard, Conzett (2000) suggested that rather than being overly concerned with identifying collocations, what is most important for teachers is to shift their and their students' focus from individual words to chunks of language to help in improving students' fluency and accuracy. Further, Oktavianti et al. (2022) advocated that teachers should examine multiple implications of lexical elements with various collocates using an interlanguage technique to help pupils become aware of the differences.

Table 4: EMP curriculum and teaching methods

No.	Item	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
		F	%	F	%	F	%	F	%	F	%
4	Medical English collocations are commonly included in EMP syllabuses.	1	10	1	10	2	20	4	40	2	20
5	Traditional methods of teaching EMP do not help students learn medical collocations properly.	1	10	4	40	2	20	3	30	0	0
6	Medical English collocations are usually taught in an implicit way.	0	0	3	30	4	40	3	30	0	0
7	Medical English collocations are not included in the periodical exams.	1	10	1	10	2	20	4	40	2	20

When EMP curriculum is concerned, the results in Table 4 display that a minority of the respondents, 10% 'agree' and 10% 'strongly agree,' were of the view that medical English collocations are a common topic in EMP syllabuses. This signifies the trivial position allotted for medical English collocations in EMP courses, which most probably affects students' competence. Vahabian et al. (2018) attributed students' low level of medical collocational knowledge to the fact that EMP courses do not help in improving the students' collocational knowledge because they concentrate on medical terms more than on medical collocations. In relation to the use of traditional methods in teaching EMP, the responses to item 5 show that half of the respondents, 10% 'strongly agree' and 40% 'agree,' acknowledged that such methods do not help students to learn medical collocations properly. Given that teaching traditional methods focus more on grammar and vocabulary, they are likely to be ineffective in providing students with the necessary sources for practicing medical collocations in communicative contexts. Fareh and Hamadi (2019) accredited students' inadequate level of collocational competence to the deficiency in the practices through methodology used and applied to teach English for healthcare students.

However, the results obtained from item 6 disclose the respondents' uncertain perception of the way medical English collocations are taught. Providing that medical collocations are instructed implicitly, the responses were distributed between 40% for 'neutral' and 30% for 'agree' and 'disagree' each. Such uncertainty reflects the unstructured teaching practices followed by EMP teachers, which might contribute to the challenges that students encounter in understanding and using medical collocations. Myers and Chang (2009) and Xu et al. (2012) found an association between collocations and the manner of teaching, where the explicit teaching method leads to more effective collocational performance than the implicit methods. Similarly, Vasiljevic (2008) recommended that explicit teaching of collocations can help students not only acquire new words but also develop their productive knowledge of previously met words, significantly reducing the frequency of output errors in students' performance. In relation to testing students on their awareness of medical English collocations, 60% of the respondents in item 7, 40% 'disagree' and 20% 'strongly disagree,' denied the exclusion of medical collocations in periodical exams. Taking into account the results above, this finding reveals a sort of mismatch between teaching practices and assessment methods followed in teaching medical English collocations.

Table 5: Students' attitudes towards medical English collocations

No.	Item	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
		F	%	F	%	F	%	F	%	F	%
8	Medicine students believe that medical English collocations are invaluable.	1	10	0	0	2	20	5	50	2	20
9	Students' unawareness of the importance of medical English collocations has negative effects on their learning.	2	20	5	50	2	20	1	10	0	0
10	Students' linguistic incompetency in English affects their learning of medical English collocations negatively.	2	20	6	60	2	20	0	0	0	0

Concerning medicine students' attitudes towards medical English collocations, the results in Table 5 (item 8) demonstrate that a substantial portion of EMP teachers' responses (70%), 50% 'disagree' and 20% 'strongly disagree,' denied students' unawareness of the importance of medical collocations. In the same vein, the results obtained from item 9 show that a large number of respondents (70%), 20% 'strongly agree' and 50% 'agree,' approved the negative effects of students' unawareness of the importance of medical collocations. That is, in case students are unacquainted with the significance of medical collocations, this might have negative consequences for their competence in medical English collocations. According to Howarth (1998), learners who are unaware of the importance of collocations might come to believe that knowing a language depends on their ability to syntactically combine vocabulary items and to memorize idioms. Thus, students' realization of the value of medical collocations can be regarded as a motivating factor to learn and acquire them more functionally. Teaching students to recognize collocations in the language input they receive and to establish a system for recording them are some of the best learning strategies that teachers can equip learners with to enhance their collocational competence (Conzett, 2000).

In relation to students' linguistic competency, the results in item 10 show that the majority of the respondents (80%), 20% 'strongly agree' and 60% 'agree,' attributed the difficulty of learning medical collocations to students'

in-general linguistic incompetency in English. This indicates that students' linguistic competency is a pre-requisite to excelling in medical English in general and in medical English collocations in particular. However, Bardovi-Harlig and Bastos (2011) and Nesselhauf (2005) suggested that even advanced L2 speakers with many years of prior instruction still experience difficulties when recognizing and producing collocations. Ding et al. (2022) also asserted that lexical proficiency and collocational understanding are not always correlated. Furthermore, Alotaibi (2014) found that both advanced and intermediate EFL learners had little knowledge of lexical collocations.

Table 6: Linguistic and cultural differences between English and Arabic

No.	Item	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
		F	%	F	%	F	%	F	%	F	%
11	Linguistic differences between English and Arabic make learning medical English collocations more difficult.	0	0	5	50	3	30	1	10	1	10
12	Cultural differences between English and Arabic make learning medical English collocations more difficult.	0	0	4	40	3	30	2	20	1	10

Regarding linguistic differences between Arabic and English, the results in Table 6 disclose that the largest portion of responses in item 11 (50% for 'agree') went for acknowledging that such differences might impede students' learning of medical English collocations. On the other hand, cultural variation between Arabic and English in item 12 was predominantly admitted by 40% of the respondents as a challenge of learning medical English collocations. This means that medical English culture-specific terminology might make learning medical English collocations difficult for Yemeni medicine students. Collocations carrying fixed and stereotyped embedded meanings, that are deeply rooted in the cultural background of the English lin-

guistic community, are among the many factors that affect students' ability to use English lexical collocations (Bartsch, 2004).

7. Conclusion

This study dealt with the competence in medical English collocations among Yemeni medicine students. With overall 30.38% of correct answers in the receptive test and 34.5% of correct answers in the productive test, the outcomes exposed that Yemeni medicine students are markedly incompetent in medical English collocations. In other words, the results indicated that medical English collocations are indeed a challenging issue for Yemeni medicine students. Although recognition usually develops earlier than production, the participants' slightly enhanced performance in the productive test can be attributed to the fact that productive tasks, such as writing for assignments or exams, are in practice more than receptive tasks, which are minimized to the optional reading of medical texts. The findings also revealed that collocational competence is likely to be governed by task nature rather than by the class of the collocating words. For example, recognizing verb-noun collocations in the multiple-choices task was less difficult than producing verb-noun collocations in the translation task.

The erroneous recognition and production of medical English collocations exhibited by the participants are likely caused by different factors. These factors include L1 negative transfer, the use of approximation or over-generalization, the scarce occurrence of specific medical collocations, insufficient exposure to medical English texts, students' incompetency in English and their limited medical vocabulary, and less variable forms of particular types of collocations.

As regards the challenges impeding students' competence in medical English collocations, they were ascribed to EMP teachers' insufficient awareness of medical English collocations and their disinterest in medical English collocations. EMP syllabuses indifference to medical English collocations and the adoption of traditional methods in teaching EMP were also featured as obstructing issues. Furthermore, students' unawareness of the importance of medical English collocations, students' linguistic incompetency in English, and the linguistic and cultural difference between English and Arabic were underscored as potential hindrances to achieving collocational competence.

8. Implications

Considering the importance of medical collocations and their difficulty for non-native users, the following pedagogic implications are suggested to help in enhancing students' competence in medical English collocations.

1. It is necessary to raise EMP teachers and students' awareness about the importance of medical collocations in performing effective communication discussions within the medical field.
2. Medical collocations should be given sufficient attention and inclusion in EMP curricula and textbooks.
3. Students should be exposed to a wide range of authentic medical contexts to enhance their understanding of the dynamic nature of medical collocations in real medical interactions. This will also help students apprehend the appropriate patterns of collocating medical terms.
4. A communicative teaching approach might be implemented to assist students in recognizing and producing medical collocations more practically and effectively.
5. Students should be aware of the distinct linguistic and cultural patterns of word collocation in Arabic and English. This will aid developing their competence in medical collocations of the target language.

References

- Adolphs, Svenja, Valerie Durow (2004). Social-cultural integration and the development of formulaic sequences. Schmitt, Norbert, ed. *Formulaic Sequences: Acquisition, Processing and Use*. Amsterdam/Philadelphia: John Benjamins, 107-126. <https://doi.org/10.1075/llt.9.07ado>
- Alotaibi, Abdullah (2014). The comprehension of English lexical collocations by Kuwaiti EFL learners. *International Journal of English Language and Linguistics Research* 2(3): 1-12. <https://doi.org/10.37745/ijellr.13>
- Bardovi-Harlig, Kathleen, Maria T. Bastos (2011). Proficiency, length of stay, and intensity of interaction, and the acquisition of conventional expressions in L2 pragmatics. *Intercultural Pragmatics* 8(3): 347-384. <https://doi.org/10.1515/iprg.2011.017>
- Barnbrook, Geoffrey, Oliver Mason, Ramesh Krishnamurthy (2013). *Collocation: Applications and Implications*. New York: Palgrave Macmillan.
- Bartsch, Sabine (2004). *Structural and Functional Properties of Collocations in English: A Corpus Study of Lexical and Pragmatic Constraints on Lexical Co-occurrence*. Tübingen: Gunter Narr Verlag.
- Boers, Frank, Murielle Demecheleer, Averil Coxhead, Stuart Webb (2014). Gauging the effects of exercise on verb-noun collocations. *Language Teaching Research* 18(1): 54-74. <https://doi.org/10.1177/1362168813505389>
- Bozdechova, Ivana (2006). Terminological collocations in Czech medical texts. *Hermeneus* 8: 67-84.

- Conzett, Jane (2000). Integrating collocation into a reading and writing course. Lewis, Michael, ed. *Teaching Collocations: Further Developments in the Lexical Approach*. Hove, England: Language Teaching Publications, 70–87.
- de Wit, Veronica Diane (2007). *Fossilization: A Case Study of an Adult Learner*. Master's Thesis, University of South Africa, Pretoria.
<http://hdl.handle.net/10500/3038>
- Ding, Chen, Barry Lee Reynolds, Xuan Van Ha (2022). Learners' perceptions of a collocation instruction and practice component in a Chinese EFL context. *Language Learning Journal* 52: 37–48.
<https://doi.org/10.1080/09571736.2022.2098366>
- Duan, Manfu, Xiaohui Qin (2012). Collocation in English teaching and learning. *Theory and Practice in Language Studies* 2(9): 1890–1894.
<https://doi.org/10.4304/tpls.2.9.1890-1894>
- Durrant, Philip, Alice Doherty (2010). Are high-frequency collocations psychologically real? Investigating the thesis of collocational priming. *Corpus Linguistics and Linguistic Theory* 6(2): 125–155. <https://doi.org/10.1515/clt.2010.006>
- Džuganová, Božena (2019). Medical language – A unique linguistic phenomenon. *Jahr - European Journal of Bioethics* 10(1): 129–145.
<https://doi.org/10.21860/j.10.1.7>
- El-Dakhs, Dina (2015). The lexical collocational competence of Arab undergraduate EFL learners. *International journal of English linguistics* 5(5): 68–82.
<https://doi.org/10.5539/ijel.v5n5p60>
- Eyckmans, June (2009). Toward an assessment of learners' receptive and productive syntagmatic knowledge. Barfield, Andy, Gyllstad Henrik, eds. *Researching Collocations in another Language: Multiple Interpretations*. New York, NY: Palgrave Macmillan, 139–152. https://doi.org/10.1057/9780230245327_11
- Fareh, Shehdeh, Inaam Hamadi (2019). How well can healthcare students use medical collocations at both the recognition and production levels? *International Journal of Arabic-English Studies* 19(1): 7–32.
<https://doi.org/10.33806/ijaes2000.19.1.1>
- Ghasemi, Zhaleh (2003). *Fossilization and the Role of Attention in Adults Second Language Learning*. Master's Thesis, Carlton University, Ottawa, Ontario.
<https://doi.org/10.22215/etd/2004-09878>
- Gitsaki, Christina (1999). *Second Language Lexical Acquisition: A study of the Development of Collocational Knowledge*. San Francisco: International Scholars publications.
- Granger, Sylviane, Yves Bestgen (2014). The use of collocations by intermediate vs. advanced non-native writers: A bigram-based study. *International Review of Applied Linguistics in Language Teaching* 52(3): 229–252.
<https://doi.org/10.1515/iral-2014-0011>
- Groom, Nicholas (2009). Effects of second language immersion on second language collocational development. Barfield, Andy, Gyllstad Henrik, eds. *Researching Collocations in another Language: Multiple Interpretations*. New York, NY: Palgrave Macmillan, 21–33. https://doi.org/10.1057/9780230245327_2
- Kuo, Clin (2009). An analysis of the use of collocations by intermediate EFL college students in Taiwan. *ARECLS* 6: 141–155.
- Gyllstad, Henrik (2007). *Testing English Collocations: Developing Receptive Tests for Use with Advanced Swedish Learners*. Doctoral Dissertation, Lund University, Lund,

- Sweden.
<http://lup.lub.lu.se/luur/download?fun=dowanloadFiles&recordOld=599011&fileOld=2172422>
- Han, ZhaoHong (2004). *Fossilization in Adult Second Language Acquisition*. Tonawanda, NY: Multilingual Matters.
- Hasselgren, Angela (1994). Lexical teddy bears and advanced learners: A study into the ways Norwegian students cope with English vocabulary. *International Journal of Applied Linguistics* 4(2): 237–258. <https://doi.org/10.1111/j.1473-4192.1994.tb00065.x>
- Howarth, Peter Andrew (1998). *Phraseology in English Academic Writing: Some Implications for Language Learning and Dictionary Making*. Tübingen: Niemeyer.
- Hyland, Ken, Polly Tse (2009). Academic lexis and disciplinary practice: Corpus evidence for specificity. *International Journal of English Studies* 9(2): 111–130.
- Irujo, Suzanne (1986). Don't put your leg in your mouth: Transfer in the acquisition of idioms in a second language. *TESOL Quarterly* 20(2): 287–304.
- Jeensuk, Soraya, Apisak Sukying (2021). Receptive and productive knowledge of English collocations among Thai EFL high school learners. *Journal of Humanities and Social Sciences* 19(1): 159–180.
- Karimnia, Amin (2018). Medical students' English language learning: Needs and perceptions. *Sustainable Multilingualism* 13(1): 164–190.
<https://doi.org/10.2478/sm-2018-0016>
- Lakshmanan, Usha (2006). Child second language acquisition and the fossilization puzzle. Han, Zhaohong, Terence Odlin, eds. *Studies of Fossilization in Second Language Acquisition*. Tonawanda, NY: Multilingual Matters, 100–133.
- Laufer, Batia, Tina Waldman (2011). Verb-noun collocations in second language writing: A corpus analysis of learners' English. *Language Learning* 61(2): 647–672. <https://doi.org/10.1111/j.1467-9922.2010.00621.x>
- Lewis, Michael (Ed). (2000). *Teaching Collocation: Further Developments in the Lexical Approach*. London: Heinle, Cengage Learning.
- Macis, Marijana, Norbert Schmitt (2017). Not just 'small potatoes': Knowledge of the idiomatic meanings of collocations. *Language Teaching Research* 21(3): 321–340.
<https://doi.org/10.1177/1362168816645957>
- Macis, Marijana, Suhad Sonbul, Rezan Alharbi (2021). The effect of spacing on incidental and deliberate learning of L2 collocations. *System* 103(3): 102649
<https://doi.org/10.1016/j.system.2021.102649>
- Makinina, Olga (2018). *Factors Impacting Collocation Recognition and Controlled Production by ESL Speakers*. Doctoral Dissertation, Carleton University, Ottawa, Ontario. <https://doi.org/10.22215/etd/2018-12936>
- Metin, Senem Kumova, Bahar Karaođlan (2011). Measuring collocation tendency of words. *Journal of Quantitative Linguistics* 18(2): 174–187.
<https://doi.org/10.1080/09296174.2011.556005>
- Myers, James, Shu-Fen Chang (2009). A multiple-strategy-based approach to word and collocation acquisition. *International Review of Applied Linguistics in Language Teaching* 47(2): 179–207.
- Najafi, Maryam, Mohammad Reza Talebinezhad (2018). The impact of teaching EFL medical vocabulary through collocations on vocabulary retention of EFL medical students. *Advances in Language and Literary Studies* 9(5): 24–27.
<https://doi.org/10.7575/aialc.all.v.9n.5p.24>

- Nesselhauf, Najda (2005). *Collocations in a Learner Corpus*. Amsterdam: John Benjamins. <https://doi.org/10.1075/scl.14>
- Nizonkiza, Deogratisa (2012). Quantifying controlled productive knowledge of collocations across proficiency and word frequency levels. *Studies in Second Language Learning and Teaching* 2(1): 67–92. <https://doi.org/10.14746/ssllt.2012.2.1.4>
- Oktavianti, Ikmi Nur, Arilia Triyoga, Icuk Prayogi (2022). Corpus for language teaching: students' perceptions and difficulties. *PROJECT (Professional Journal of English Education)* 5(2): 441–455. <https://doi.org/10.22460/project.v5i2>
- Pellicer-Sánchez, Ana (2017). Learning L2 collocations incidentally from reading. *Language Teaching Research* 21(3): 381–402. <https://doi.org/10.1177/1362168815618428>
- Peters, Elke (2014). The effects of repetition and time of post-test administration on EFL learners' form recall of single words and collocations. *Language Teaching Research* 18(1): 75–94. <https://doi.org/10.1177/1362168813505384>
- Sipayung, Rohdearni Wati, Erikson Saragih (2023). Contextualizing EFL learners' proficiency in using English collocations. *JEELS* 10(1): 1–25. DOI: 10.30762/jeels.v10i1.700
- Sinadinović, Danka (2013). The importance of strategies in learning and acquiring medical English vocabulary. *Jahr-European Journal of Bioethics* 4(1): 273–291.
- Siyanova, Anna, Norbert Schmitt (2008). L2 learner production and processing of collocation: A multi-study perspective. *The Canadian Modern Language Review* 64(3): 429–458. <https://doi.org/10.3138/cmlr.64.3.429>
- Siyanova-Chanturia, Anna, Stefania Spina (2015). Investigation of native speaker and second language learner intuition of collocation frequency. *Language Learning* 65(3): 533–562. <https://doi.org/10.1111/lang.12125>
- Smith, Claire (2005). *The Lexical Approach: Collocation in High School English Language Learners*. Doctoral dissertation. George Fox University, https://cedar.www.edu./sterling_collection/1
- Szudarski, Pawel, Kathy Conklin (2014). Short- and long-term effects of rote rehearsal on ESL learners' processing of L2 collocations. *TESOL Quarterly* 48(4): 833–842. <https://doi.org/10.1002/tesq.201>
- Pavičić Takač, Višnja, Evelina Miščin (2013). Exploring the collocational competence of non-native users of medical English. *Jahr - European Journal of Bioethics* 4(7): 235–256.
- Vahabian, Mehrangiz, Seyedeh Z. Asgharim, Farzaneh Esna-Ashari, Hamzeh M. Laghab (2018). Collocational competence level medical English among Iranian medical students. *Jahr - European Journal of Bioethics* 9(17): 9–24.
- Vasiljevic, Zorana (2008). Developing collocational competence of second language learners. *The East Asian Learner* 4(1): 46–50.
- Ward, Jeremy (2007). Collocation and technicality in EAP engineering. *Journal of English for Academic Purposes* 6(1): 18–35.
- Webb, Sturat, Jonathan Newton, Anna Chang (2013). Incidental learning of collocation. *Language Learning* 63(1): 91–120. <https://doi.org/10.1111/j.1467-9922.2012.00729.x>
- Wolter, Brent, Henrik Gyllstad (2013). Frequency of input and L2 collocational processing: A comparison of congruent and incongruent collocations. *Studies in Second Language Acquisition* 35: 451–482.

- <https://doi.org/10.1017/S0272263113000107>
Wolter, Brent, Junko Yamashita (2015). Processing collocations in a second language: A case of first language activation? *Applied Psycholinguistics* 36: 1193–1221.
<https://doi.org/10.1017/S0142716414000113>
Wray, Alison (2008). *Formulaic Language: Pushing the Boundaries*. Oxford: Oxford University Press.
Xu, Runjiang, Zan Mao, Yan Liu (2012). Lexical approach and its application in college English classes. *Theory and Practice in Language Studies* 2(10): 2090–2095.
<https://doi.org/10.4304/tpls.2.10.2090-2095>
Yamashita, Junko, Nan Jiang (2010). L1 influence on the acquisition of L2 collocations: Japanese ESL Users and EFL learners acquiring English collocations. *TESOL Quarterly* 44(4): 647–668. <https://doi.org/10.5054/tq.2010.235998>
Zughoul, Muhammad Raji, Hussein Abdul-Fattah (2003). Translational collocational strategies of Arabic speaking learners of English: A study in lexical semantics. *Babel* 49(1): 59–81. <https://doi.org/10.1075/babel.49.1.05zug>

Authors' Addresses:

Abdullah Al-Eryani (Corresponding author)
Faculty of Education, Tamar University
Bait Bous, Sana'a, Yemen
E-mail: abderian2002@gmail.com

Abdulwadood Annuzaili
Faculty of languages, Sana'a University
Nearby Al-Nasser University, Sana'a, Yemen
E-mail: dr.wadood.annuzaili@su.edu.ye

Sadiyah Alwesabi
Taiz St., Sana'a, Yemen
E-mail: sadiyah.alwesabi.222@gmail.com

Received: July 4, 2024

Accepted for publication: October 3, 2024