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An investigation into health science students' English language needs

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Tessema Gilo[1]
Addis Ababa University
Nuru Mohammed[2]
Addis Ababa University

Abstract

In Ethiopia, where English is taught as a foreign language, health science and medical students just take common communicative English courses in their first year, most likely general English. As a result, meeting the specialized language and communication needs of health science or medical students in Ethiopia may be difficult. This has been considered as the main factor for poor English language proficiency in health science educational and professional settings. Thus, this study investigates the English language needs of health science students in higher education institutions so that English language courses can be designed accordingly. Hence, 131 students from the Health Science College in the academic year 2021/2022 were chosen using a stratified sampling technique. Six subject area instructors from Samara University and six health professionals from Dubti General Hospital were also selected via purposive sampling. A sequential explanatory mixed-methods research design was used. A questionnaire, interview, and observations were employed for data collection. The quantitative data was analysed quantitatively by using descriptive statistics, mean and percentage via spss 25 version computer software, whereas the qualitative data analysis was made based on procedures to descriptive and themes and interpreted qualitatively. According to the study, in the health science field of study, more technical terms that deviate from general English are used, and students want to learn these technical terms in their target situations. This study determined the priority of each English language skill as they are used in the health science field of study and future professional contexts. As a result, when developing English language course materials, course designers, and practitioners should take these activities and learners' needs into account.

Keywords *health science, higher education, necessity, needs analysis, learning needs, wants*

1. Introduction

Many professional fields use English as an international language. Particularly, in professional areas like health and technology, the English language is used in most parts of the world. For example, in Ethiopia, in universities, hospitals, and the health sector, the medium of instruction is English. The demands of the English language in the health sector are

[1] Tessema Gilo is a Ph.D. student at Addis Ababa University. His research area covers English for specific purposes in higher education, needs analysis, curriculum development, and syllabus design in higher education. Corresponding author's: gilotessema@gmail.com
[2] Dr. Nuru Mohammed is currently working at Addis Ababa University. Her/His research area covers English language classroom discourse, needs analysis and other academic challenges about English language concerns. nurumt@gmail.com

different from other sectors. In most Ethiopian professional areas, Amharic is used as a medium of communication for the federal sector, and regional languages are used as a medium of communication for regional areas, but English is used for the health sector and universities.

However, in all Ethiopian universities, two English language skills courses, locally called "communicative English Language Skills I" and "communicative English Language Skills II," are given in the first year as common courses. Actually, in most of the world, even where English is used as a second or first language, English language courses are delivered in universities to address students' English language needs in the target situation. As Basturkmen (2010) indicates, most European universities deliver English for specific purposes. Since its inception (about 1960), English for medical purpose (EMP) has grown significantly as a distinct branch of English for specific purpose (ESP), both in terms of volume and sophistication of teaching material and courses offered in the UK, the US, and abroad and the creation of EMP literature (Maher, 1986).

In Ethiopia, where English is taught as a foreign language, health science, and medical students take only common courses, most likely general English, in their first year. Hence, it might be difficult to satisfy health science or medical students' specific language and communication needs according to the language demands of their field of study and their profession in Ethiopia. Though it is difficult to deliver ESP courses in each college or department in Ethiopia, the demands of the language in the health science field of study and future profession need to be considered. Kim (2008) states that a foreign language is mainly needed to have a certain level of English proficiency at work, which is an indicator of good performance. Dudley-Evan and St. John (1998) also stated that all English language learners have specific purposes for learning English.

Long (2005) points out that, just as no medical treatment would be given before a careful diagnosis of the patient, no language teaching program should be designed without a careful needs analysis. Paltridge and Starfield (2013) state that needs analysis is conducted to set up the "what" and "how" of the course, and it is the first stage in ESP course development. To address institutional issues, instructors must transform the general English curriculum into a more particular purpose(Farah, 2018). However, in the case of English language courses in use in Ethiopia's universities, they might be designed without considering the students' needs, as they are used for all students in all fields of study.

Fortanet-Gomez and Raisanen (2008) state that students coming into higher education are assumed to have prior knowledge of the language. They emphasized that now most of the English taught at universities in Europe is English for specific purposes (ESP). Basturkmen (2010) points out that the needs analysis process can answer questions of when, where, and why language learners need their target language. Hutchinson and Waters (1987) suggest that any language course should be designed based on learner needs. Setting up an Undergraduate Medical English course program that takes into account the learner's aims and social demands, as well as organizing speaking and writing module hours and teaching material (Li, 2015). It is strongly advised that the learners' language requirements be examined (Abiy, 1990).

Redesigned ESP courses should relate to the English required in academic and professional settings (Chatsungnoen, 2015).

In general, the common point among the above researchers and scholars is that in higher education institutions, English language courses should be designed to address learners' fields of study and professional needs. To deal with passive students' participation, design their course material in dealing with no exact curriculum(Ramadhani & Poedjiastutie, 2020). The current researchers can understand that it is difficulty to design ESP course for each fields of study in the Ethiopian context because of the economic condition and the harmonization of the curriculum. However, since highly technical medical English are used in health science fields of study and professional settings, they need especial attention.

1.1. Statement of the problem

Health care is a situation in which the success of the activities in every procedure is greatly influenced by the exchange of information(Orr, 1998). Healthcare professionals need good communication skills, reflective and practical skills, and an understanding of the ethical and social dimensions of healthcare practice (Basturkmen, 2010). McCorry and Mason (2011) point out that students preparing for careers in health care must be strong communicators; they must not only master the science and clinical skills necessary to provide quality patient care. Paltridge and Starfield (2013) indicate that language plays a significant role in most professions but is more significant in medicine than any other field because it is where effective communication is widely recognized as important to clinical outcomes. Students learn English not only to improve their language skills but also to get specialized skills that will allow them to perform the language in their major subject area of study(Masyhud, 2018). English is certainly necessary for medical students to learn and advance in their jobs (Wahyuni, 2021). A thorough needs assessment is likely to offer the firm foundation required for effective language instruction course design and delivery (Serafini, Lake& Long, 2015).

Basturkmen (2006) points out that ESP has functioned to help language learners cope with the features of language or to develop the competencies needed to function in a discipline, profession, or workplace. "Need analysis is the key essence of ESP" (Rahman, 2015, p. 24). An ESP program is thus based on an assessment of the goals, demands, and functions for which English is required (Hans & Hans, 2015).

However, in light of students' English language needs as mentioned by the above scholars and researchers and the researcher's experience, the communicative English courses in use cannot meet the needs of the health science students as they do not enable the learners to function in their professional settings or even in their academic fields of study. The researcher first noticed this problem when teaching communicative English skills to Samara University's College of Health Science students (public health officers, midwives, and nursing departments). The health science students performed better in English than other students, yet they did not attend the English lesson unless the instructor recorded their presence. As a teacher, the researcher attempted to question some students informally about why they

did not attend English class, despite the fact that they performed well in English. They said that the contents of the course material were what they had mastered in their high school lesson, and they could gain nothing new. The current researchers confirmed that no English language courses have been designed to address medical or health science students' English language needs in higher education institutions in Ethiopia.

The researcher sought to identify worldwide and local studies on the issue. Some Ph.D. studies were performed abroad, whereas just a few MA studies were conducted locally.

Abdullah's (2005) study on the need of first-year students at the faculty of medicine at the University of Aden in Yemen, for example, focused on sociolinguistic needs. Alfehaid (2011) investigated the importance of language skills for the development of the present English for Specific Purposes (ESP) course at health sciences students' colleges in Saudi Arabia on the basis of a needs analysis and a course evaluation. . Farhat (2012) investigated the role of English as a foreign language in doctor identity development and the process of becoming a doctor in a Syria University (Tishreen University). Abuklaish (2014) discovered the benefit of the English language for undergraduate science students in Libya. Chatsungnoen (2015) studied the English language needs of students and relevant stakeholders for an English for Specific Purposes (ESP) program for students studying food science and technology at Thailand's Agriculture University.

However, except a few MA theses, the researcher has not come across any Ph.D.-level local studies conducted in Ethiopia. For example, Abiy (1990) conducted research to assess the communication demands of high schools, and he advocated that his study be only a portion of the task of developing a course. Tufaro (2008) conducted study to analyze the English language demands of Shashamane Health Science College's third-year students. His primary objective was to identify more critical language abilities for third-year students to be successful in their academic settings, future professions, and private and social life.

Thus, none of these studies adequately represented the core of the current investigation. The current study, on the other hand, looks at the English language needs of health science students in academic and future professional activities in order to build relevant course content.

1.2. Research questions

This study sought to answer five fundamental questions:

1) What are the English language skills often needed to carryout activities in the health science students' academic study?
2) What are the English language skills often needed to carryout activities in the health science students' future profession?
3) What English language and skills do health science students need for their academic fields of study?
4) What English language and skills do health science students need for their future profession?
5) Which English language skills should be prioritized?

2. Methodology

2.1. Research design

The study employed a sequential explanatory mixed methods design to achieve the intended objectives. Plano Clark and Creswell (2015) point out that the best-mixed method design is a sequential explanatory design in which quantitative results are obtained in the first phase to provide a general picture of the research problem, and then these findings are refined or elaborated through an in-depth qualitative exploration in the second phase. Researchers can adopt a pragmatic paradigm if they want to choose the research method they think is best for their study (Dornyei, 2007). According to Creswell (2014), the pragmatic paradigm allows researchers to feel free to choose procedures or methods that can meet their needs in collecting various types of data to answer their research questions.

2.2. The participants

The study was conducted at Samara University, located in Afar National Regional State, Ethiopia, 590 km from the capital Addis Ababa. From a target population of 199, 131 students in the College of Health Sciences were chosen and participated in this study. Specifically, from 133 second year students, 88 participants were selected, whereas from 66 fourth year students, 43 participants were selected. The determination of sample size participants was made according to a scientific sample size calculation by Kothari (2004) to participate in the quantitative data. Kothari (2004) states that stratified sampling techniques are generally applied to obtain a representative sample if the population from which a sample is to be drawn does not constitute a homogenous group. The researcher used this sampling method because there was homogeneity within the department and heterogeneity among the departments. Systematic random sampling was applied to obtain respondents from each section and was included in filling out the questionnaire.

Dornyei (2007) suggests that an initial sample size of 6-10 might be appropriate for qualitative research. As a result, 18 students (6 from each department) from the College of Health Sciences were selected for the interview using a simple random sampling procedure. However, due to information saturation, the researchers only interviewed 12 students. Qualitative inquiry is not concerned with how representative the respondent sample is or how experience is distributed in the population, but the main aim of sampling is to find individuals who can give ample insights into the phenomenon under study to maximize what can be learned (Dornyei, 2007).

The instructors who taught the major subject area courses during the study were purposefully selected. Three course instructors and three healthcare professionals were also observed. The observations were carried out in two settings: a classroom lecture on key health-related courses and hospital medical wards where education and treatment were provided. A total of 12 classroom observations were conducted in three departments. Each had four observations.

2.3. Data collection and processing

The questionnaire sought students' opinions to assess their target needs and learning needs. The data obtained from the questionnaire gave a general

picture of the research problems, which were later refined or elaborated through an in-depth qualitative exploration. The questions were on the Likert scale, which required respondents to rate frequencies on a scale ranging from never needed to always needed, numbered (1-5), and on the Likert scale, which required respondents to rate their agreement or disagreement on a scale ranging from strongly disagree to strongly agree, numbered (1-5). The questionnaire was adapted from commonly used needs analysis models (e.g., Basturkmen, 2010; Dudley-Evans & St. John, 1998; Hutchinson & Waters, 1987) and earlier empirical studies (e.g., Abdullah, 2005; Alfehaid, 2011; Abuklaish, 2014, Chatsungnoen , 2015; Farhat, 2012; Fortanet-Gomeze & Raisanen , 2008; Long, 2005; Richards,2001). Furthermore, the questionnaire was tested for validity in a pilot study.

Observation was the first qualitative data collection instrument used in this study. The rationale for using it was to directly observe what, how, and why the English language was used in health science subject area courses as well as students' future professions depending on the general picture of the results obtained by quantitative data and results.

The interview was another qualitative data-gathering instrument used in this study. It was also used to confirm the data collected through observation. The type of interview used was a semi-structured interview.

2.4. Data collection procedures

For ethical issues, the researcher discussed this with the concerned university's administrators and university staff and asked for their willingness. The university's academic president expressed his willingness to assist the researcher with the data collected from their college.

The researcher also went to Dubt General Hospital with a letter written by the university. Then, he discussed the concern with the chief executive director of the hospital. The director expressed his willingness and wrote a letter of consent to the chief clinical director. The clinical director informed the impatient director. The inpatient director also told other case managers to cooperate in conducting the study. Then, the researchers gathered the following information with permission after obtaining ethical approval and receiving informed verbal consent from the participants.

First, the questionnaire was administered. The student participants were given some instructions regarding the purpose of the study, and they were requested to respond to all the questions genuinely. They were also told that they could ask any question they wanted about any ambiguity. All 131 students completed and returned the questionnaire.

After analyzing the quantitative data, the qualitative data were shaped based on the results. From the qualitative data, observations were conducted first. The observations preceded the interview for two main reasons. Firstly, the researcher thought that if the interviews were conducted first, the instructors might modify themselves after getting the clues from the interview. The second was that the researcher wanted to add probing questions to the semi-structured interview for new behaviors observed.

2.5. Data analysis

Students' responses to questionnaires were analyzed by SPSS 25 computer software to determine the individual responses for each of the items in the questionnaire. Using the SPSS 25 computer software, data were analyzed using descriptive statistics (mean and percentage). The findings from the quantitative data were discussed with the findings from the qualitative data concerning the research questions. The qualitative data were analyzed using the following procedure: First, the audio-recorded interviews and the observations were transcribed. Then, the transcripts were coded and grouped thematically. Analyses were made based on the thematic category. The sample quotes were also selected and presented in the qualitative findings sections.

In general, to maintain anonymity, the findings were analyzed without identifying any of the participants. Their names were changed to codes; for example, instructor one (Inst 1), instructor two (Inst 2), student one (S1), student two (S2), and so on; for clinical practitioners who taught internship students in hospital wards, doctor one (Dr. 1), doctor two (Dr. 2), and so on; and for hospital health professionals: Hp1, Hp2, Hp3, and so on. In this study, we made a concerted effort to clearly define the research questions and conduct a methodical assessment of the literature in accordance with the study's objective to assure data dependability. Similarly, to assure the study's probable transferability, the researchers attempted to provide information regarding the study's participants as well as the research setting.

3. Findings

This section includes the findings and relevant discussion. The presentation was created in response to the research questions. The quantitative results were given first in tables, followed by the qualitative results, which were then analyzed utilizing sample extracts from the data. As a result, the section that follows explains why each of the English language skills is needed when performing activities in the target situation of health science, as well as what English language and skills health science students need for their academic career and future profession.

3.1. Quantitative findings

3.1.1. Students' Perception of English Language Skills Needed in Doing Activities in the Academic Field of Study

In part one of the questionnaires, respondents were asked to rate the frequency of each type of English language skill needed to do activities in their academic field of study.

3.1.1.1. Reading Skills in the Academic Field of Study

Items Q1A-Q1H were designed to find out the types of reading activities frequently needed in the health sciences field of study. Hence, health science students were assigned to indicate how often they needed reading activities in their field of study. Table 1 below shows their responses.

Table 1
Health science students' perception regarding the frequency of reading activities' needs

NO.	Activities	Frequencies in %					mean	SD
		NN	RN	SN	ON	AN		
Q1A	Reading textbooks	0	13.3	60.0	17.8	8.9	3	.795
Q1B	Reading course handout	0	6.7	8.9	35.6	48.9	4.27	.89
Q1C	Reading instructions for Assignments	0	6.7	13.3	24.4	55.6	4.29	.9
Q1D	Reading study notes	0	6.7	20.0	35.6	37.8	4.04	.93
Q1E	Reading instructions for labs	2.2	4.4	17.8	28.9	46.7	4.13	1.01
Q1F	Reading test and exam questions	2.2	6.7	0	20.0	71.1	4.51	.97
Q1G	Reading newspapers and	2.2	17.8	11.1	24.4	44.4	3.91	1.22
Q1H	Reading manual guide	2..2	11.1	13.3	35.6	37.8	3.96	1.09
	Total						4.01	

Note: NN=Never Needed, RN= Rarely Needed, SN= Sometimes Needed, ON= Often Needed, AN= Always Needed, SD= Standard deviation

As shown in the table above, the majority of health science students seemed to believe that they frequently needed reading test and exam questions, reading instruction for assignments, reading course hand out, and reading instruction for labs respectively. As the responses to item Q1F above indicate, 71.1% always needed reading test and exam questions and 20% of them often needed them with a mean of 4.51. The next reading they frequently needed in English was item Q1C 48.9% and 35.65% of them were always needed and often needed consequently with the mean of 4.29. Items Q1B and Q1E are also frequently needed with a mean of 4.27 and 4.13 respectively.

Hence, it can be concluded that the types of reading that were often needed in the health science field of study were reading tests and exam questions, reading instructions for assignments, reading course handouts, and reading instructions for labs, respectively.

3.1.1.2. Writing Skills in Health Science Academic Field of Study

In items Q1J-Q1Q in the following table, students were asked to rate the types of writing for which health science students always needed to do activities in English in their field of study. This could assist the researcher in identifying the writing-related activities that are always required for the health science field of study.

Table 2

Health science students' opinions regarding the frequency of writing skills needed in their field of study.

No.	Activities	Frequencies in %					Mean	SD
		NN	RN	SN	ON	AN		
Q1J	writing notes from lecture notes	0	6.7	13.3	20.0	60.0	4.33	.95
Q1K	writing a note from the course books	0	2.3	29.5	25.0	43.2	4.09	.91
Q1L	Writing project reports/term papers	0	4.4	11.1	24.4	60.0	4.40	.86
Q1M	Writing lab/field reports	0	15.6	17.8	20.0	46.7	3.98	1.12
Q1N	Writing summaries	4.4	8.9	35.6	28.9	22.2	3.56	1.08
Q1O	Writing personal letters	33.3	31.1	11.1	2.2	22.2	2.49	1.53
Q1P	writing business letters or job application letters	11.1	31.1	26.7	13.3	17.8	2.96	1.28
Q1Q	Writing paragraphs or essays on a variety of issues	2.2	11.1	33.3	37.8	15.6	3.53	.97
Q1R	Writing research papers	0	8.9	13.3	22.2	55.6	4.24	1.00

Note: NN=Never Needed, RN= Rarely Needed, SN= Sometimes Needed, ON= Often Needed, AN= Always Needed, SD= Standard deviation

In Table 2 above, the respondents were asked to indicate information concerning the type of activities they always needed, they often needed, they sometimes needed, and they rarely needed or never needed in English in doing activities throughout their educational study in the health science field. Accordingly, an equal number of respondents 60% of them indicated that they always needed to write project reports/term papers and write notes from lecture notes while 24% and 20% of them often needed and no students rated under never needed. On item Q1R, 56.6% indicated that they always needed to write a research paper and 22.2% indicated they often needed, 13.3% sometimes needed, 8.9% rarely needed and no student indicated never needed. The next always-needed writing activity was writing a note from the course book which is rated by 43.2% as always needed, 25.0% often needed, 29.5 sometimes needed, 2.3% as rarely needed, and no students rated for never needed. On the other hand, writing personal letters, writing business letters or job applications, and writing summaries were rarely or never needed.

As a result of the information in the table above, writing skills in English were always required in the health science field to write project reports, term papers, lecture notes, and research papers. Personal letters, business letters, job applications, and summaries, on the other hand, were not frequently required by students.

3.1.1.3. Speaking Skills in Health Science Academic Field of Study

In items Q1T-Q1Z in the following table, students were asked to rate the speaking activities that they need in their learning of the health science field of study to improve their English language speaking skills. This could help a researcher identify the speaking skills that are necessary for health science fields of study.

Table 3
Health science students' beliefs regarding the frequency of speaking skills needed in health science field of study

Activities	Frequencies in %						
	NN	RN	SN	ON	AN	Mean	SD
Q1T)Asking and answering a question in class	0	8.9	48.9	24.4	17.8	3.51	.9
Q1U)Participating in class discussion	0	6.7	42.2	28.9	22.2	3.67	.91
Q1V)Giving a presentation	0	6.7	13.3	22.2	57.8	4.31	.93
Q1W)Introducing yourself and others in different situations	0	26.7	33.3	20.0	20.0	3.33	1.09
Q1X)Stating opinions or ideas on a variety of topics in the class	0	31.1	15.6	33.3	20.0	3.42	1.14
Q1Y) Requesting to obtain different information	4.4	22.2	42.2	17.8	13.3	3.13	1.06
Q1Z)Making a telephone call	64.4	4.4	11.1	15.6	4.4	1.91	1.35

Note: NN=Never Needed, RN= Rarely Needed, SN= Sometimes Needed, ON= Often Needed, AN= Always Needed, SD= Standard deviation

Table 3 above reveals that the speaking skills activities frequently needed in English in the health science field when giving a presentation (mean= 4.1), Participating in Class discussion (mean= 3.67), and Asking and answering questions in class(mean= 3.5), whereas stating opinions or ideas in a variety of topics(mean=3.42),introducing oneself and others in different situations (mean=3.33) and making a request to obtain different information(mean= 3.13) were sometimes needed, but did not need making a telephone call in English(mean=1.35). Thus, from these data, it can be concluded that the speaking skills in English needed in the health science field were always needed to give presentations, participate in class discussions, and ask and answer questions in class.

3.1.1.4. Listening Skills Needed in Health Science Academic Field of Study

In items Q1Z2–Q1Z5 in the following table, the students were asked to rate the listening activities that health science students needed in their

learning of the health science field of study in English. This could help the researcher identify the activities related to listening skills that are very necessary for the health sciences field of study.

Table 4
Health science students' views regarding the frequency of listening skills' activities needed in health science field of study

No.	**Items**	**Frequencies in %**					**mean**	**SD**
		NN	RN	SN	ON	AN		
Q1Z2	Listening to lecture	4.4	4.4	4.4	13.5	73.3	4.47	1.08
Q1Z3	Listening to class discussion	4.4	31.1	24	0.4	40.1	4	0.95
Q1Z4	Listening to the radio, TV programs, or films about health sciences	2.3	8.9	15.6	17.8	55.6	4.16	1.13
Q1Z5	Listening to instructions and explanations in labs	0	6.7	8.9	22.2	62.2	4.4	0.92

Note: NN=Never Needed, RN= Rarely Needed, SN= Sometimes Needed, ON= Often Needed, AN= Always Needed, SD= Standard deviation

Table 4 reveals the health science students' opinions regarding the type of listening activities they needed in their learning of their fields of study. The finding indicated that the majority of students (86.6%) of them indicated that listening to lectures in English was frequently needed. The next most needed listening activity was listening to instructions and explanations in labs which were rated by 84.4% of the respondents. Listening to the radio, TV programs, or films about health sciences was the third listening activity that learners often needed to listen to in English as rated by 73.4% of the respondent. The mean value of each item (Mean= 4 and above) can also show that all of the listening activities mentioned were frequently needed though their degree was different. Accordingly, depending on the degree of recurrence, listening to lectures, listening to instructions and explanations in labs, listening to radio or TV programs or films about health sciences, and listening to the class discussion are listening activities frequently needed in English listening skills in the health science field of study.

3.1.2. Health Science Students' Preferences of English Language Needs in Their Future Profession

Part two of the questionnaire was used to elicit responses regarding health science students' required knowledge (necessities) in four English language skills (reading, writing, speaking, and listening) needed in their future professional careers. Thus, respondents were asked to rate how often

they needed each of the English language skills to do activities in their future profession.

3.1.2.1. Reading Skills in Health Science Students' Future Profession

Items Q2A-Q2E were designed to find out the types of reading activities frequently needed in the health science field of study. Hence, health science students were made to indicate how often they needed reading activities in their future profession. Table 5 below shows their responses.

Table 5
Health science students' perceptions regarding English language reading skills needed in doing activities in their future profession

No.	**Activities**	**Frequencies in %**					
		NN	RN	SN	ON	AN	Total
Q2A	Reading instructions(drug use leaflets, physician decision) in English	0	8.9	8.9	11.1	71.1	100.
Q2B	Reading medical books, articles, magazines, etc.	2.2	6.7	8.9	22.2	60.0	100
Q2C	Reading graphs, charts, and tables	0	8.9	11.1	35.6	44.4	100
Q2D	Translating English medical or health information to their language	4.4	8.9	17.8	26.7	57.8	100
Q2E	Reading prescribed drugs and all activities after the surgery are written	6.7	8.9	0	17.8	66.7	100

Note: ND=Never Needed, RN= Rarely Needed, SN= Sometimes Needed, ON= Often Needed, AN= Always Needed, SD= Standard deviation

The results showed that the most needed reading activities in English were reading instruction (drug use leaflets, Physician decision) because as indicated in item Q2A above, 71.1% of the students rated always needed, 11.1% rated it as often needed, 8.9% rated sometimes needed and 8.9% rated rarely needed but no respondents rated never needed. The next always needed reading activities were reading prescribed drugs and all activities after the surgery are written as 66% of the respondents replied always needed and 17.8% of them replied often needed. The third important reading activity was reading medical books, articles, magazines, etc. as the majority of students (60%) of them replied always needed, 22.2% replied often needed, 8.9% replied sometimes needed, and a few numbers of students 6.7% and 2.2% replied rarely needed and never needed respectively.

From the result presented in Table 5, all the reading activities mentioned were needed for a student's future profession, but they can be ranked from most important to least important based on their frequency of need. Reading instructions (drug use leaflets, physician decisions, reading prescribed drugs, and all activities after the surgery), reading medical books, articles, magazines, etc., translating English medical or health information to their language and reading graphs, charts, and tables are needed.

3.1.2.2. Writing Skills in Health Science Students' Future Profession

Items Q2G-Q2J were designed to find out the types of writing activities needed in the health science field of study. Hence, health science students were made to indicate how often they needed writing activities in their future profession. Table 6 below shows their responses.

Table 6
Health science students' perception regarding the frequency of writing skills needed in their future profession

No.	**Activities**	**Frequencies in %**					
		NN	RN	SN	ON	AN	Total
Q2G	Writing referral letters in English	0	6.7	11.1	13.3	68.9	100
Q2H	Writing project proposals or research in English	0	2.2	22.3	13.3	62.2	100
Q2I	Writing reports(case reports, patient care, and follow-up reports) in English	0	6.7	11.1	17.8	64.4	100
Q2J	Writing forms (prescriptions, vital signs, admission, discharge summaries, etc.)	2.2	4.4	11.2	17.8	64.4	100

Note: NN=Never Needed, RN= Rarely Needed, SD= Sometimes Needed, ON= Often Needed, AN= Always Needed

Table 6 shows the writing activities health science students needed in doing professional activities in their future profession. The results indicate that all activities were needed as the majority of the respondents (>62% of them) rated always needed in each item. To see each separately, 68.9 % indicated writing referral letters in English was always needed and 13.3% indicated often needed. Writing reports (case reports, patient care, and follow-up reports) in English and Writing forms (prescriptions, vital signs, admission, discharge summaries, etc.) equal number of respondents 64.4% and 17.8% indicated that always needed and often needed respectively. For writing project proposals or research in English 62.2% and 13.3% replied always needed and often needed respectively.

Therefore, it can be concluded that writing skills in English are always needed in the health profession to write referral letters, reports (case reports, patient care reports, and follow-up reports), forms (prescriptions, vital signs, admission summaries, discharge summaries, etc.), and project proposals or research.

3.1.2.3. Speaking Skills in Health Science Students' Future Profession

Items Q2L-Q2q were designed to find out the types of speaking activities frequently needed in the health sciences field of study. Hence, health science students were made to indicate how often they needed speaking activities in their future profession. Table 7 below shows their responses.

Table 7
Health science students' perception regarding the frequency of speaking activities needed in their future profession

No.	**Activities**	**Frequencies in %**					
		NN	RN	SN	ON	AN	Total
Q2L	Attending medical meetings/conference	0	8.9	13.3	31.1	46.7	100
Q2M	Communicating with colleagues in English	2.2	17.8	48.9	22.2	8.9	100
Q2N	Communicating with patients in English	35.6	31.1	15.6	11.1	6.7	100
Q2O	Communicating with patients' caretakers	35.6	35.6	15.6	2.2	11.1	100
Q2P	Speaking about medical-related topics in English	0	6.7	28.9	35.6	28.9	100
Q2Q	making presentations at seminars and conferences	0	4.4	15.6	13.3	66.7	100

Note: NN=Never Needed, RN= Rarely Needed, SN= Sometimes Needed, ON= Often Needed, AN= Always Needed, SD= Standard deviation

Table 7 indicates that the respondents mainly needed speaking skills in English to make presentations at seminars and conferences as 66.7% of them replied they always needed, 13.3% of them said they often needed, 15.6% rated they sometimes needed and 4.4% respondents indicated they rarely needed, but no one replied on never needed. Attending medical meetings/conferences was the next frequently needed speaking type in the health profession as rated by 46.7% always needed, 31.1% often needed, but no one indicated never needed. Speaking about medical-related topics in English was the third most frequently needed speaking type in English as rated by 64.5 % of the respondents answered as frequently needed, 28.9 % of them replied as sometimes needed, 6.7% said rarely needed, and no one said never needed. Communicating with a colleague in English is sometimes needed as it was rated by nearly half (48.9%) of the respondents.

However, Communicating with patients in English and Communicating with patients' caretakers are rarely or never needed as an equal number of respondents 35% of them replied never needed, and 31.1 and 35.6% of the students said rarely needed respectively. These speaking activities may not be used in hospitals or clinics as almost all of the patients or patient attendants were non-English speakers.

In general, from the information in this table, it can be discovered that the speaking skills activities that are often or frequently used in English in the health profession are making presentations at seminars and conferences, attending medical meetings and conferences, speaking about medically related topics, and communicating with colleagues, in that order of importance.

3.1.2.4. Listening Skills in Health Science Students' Future Profession

Items Q2A-Q2E were designed to find out the types of listening activities frequently needed in the health sciences field of study. As a result, health science students were asked to indicate how frequently they would require listening activities in their future profession. Table 8 below shows their responses.

Table 8
Health science students' perception regarding the activities of listening skills frequently needed in their future professional careers

No.	**Items**	**Frequencies**					
		NN	RN	SN	ON	AN	Total
Q2S	Listening at meetings, seminars, or conferences	0	6.3	11.1	11.1	71.1	100
Q2T	Listening to patients	40.0	15.6	6.7	6.7	31.1	100
Q2U	Listening to foreigners	11.1	28.9	22.2	17.8	20.0	100
Q2V	Listening to colleagues	4.4	8.9	46.7	22.2	17.8.	100
Q2W	Listening to presentation	2.2	0	4.4	26.7	66.7	100

Note: NN=Never Needed, RN= Rarely Needed, SN= Sometimes Needed, ON= Often Needed, AN= Always Needed, SD= Standard deviation

Table 8 reveals that listening at meetings, seminars, or conferences is often needed in health science students' future profession as 71.1% of the respondents replied always needed and 11.1% said often needed. It also shows that listening to presentations is the second most regularly needed listening in English as 66.7% of the respondent replied always needed, 26.7% replied often needed, and listening to a colleague is sometimes needed as nearly half of the respondents (46.7% of them) rated sometimes needed. It also indicates that listening to patients was rarely or never needed as 15.6% said rarely needed and 40.0% replied never needed. Listening to foreigners in English was also rarely needed as rated by 22.2% indicated sometimes needed, 28.9 % said rarely needed and 11.1% answered never needed.

In general, from the information in the table, it can be concluded that listening at meetings, seminars, or conferences and listening to a presentation in English are regularly needed skills, whereas listening to a colleague is sometimes needed, but listening to a patient is never or rarely needed. Listening to the patient and listening to foreigners are the least needed listening skills in English.

3.1.3. Health Science Students' English Language Learning Preferences (Wants)

Part three of the questionnaire was aimed to identify health science students' wants, so they were asked to rate what they wished to learn or the English language they preferred to learn. Table 9 illustrates their ratings.

Table 9
Health science Students' perceptions of their English language learning preferences (wants)

Descriptive Statistics

Items	N	Mean	Std. Deviation
Q3A. I like English for medical purposes more than general English	131	3.89	1.210
Q3B. Technical vocabulary (Vocabulary is taken from health science/ the medical field is important for my academic study	131	4.51	.727
Q3C. I prefer if the activities in health science students' English language skills course materials are relevant to the health science field	131	4.24	.981
Q3D. I want to learn English to help me in my academic study	131	4.49	.757
Q3E. I want to learn English to be successful in my health profession	131	4.44	.813
Q3F. I want to learn English to enjoy English culture	131	2.47	1.358
Q3G. I want to learn English just to obtain my degree	131	2.69	.996
Q3H. I want to learn English because I enjoy learning it	131	3.02	1.234
Q3I.I like topics, activities, and content concerning health science to be included in English language skills courses	131	4.16	1.043
Q3J. I like health science vocabulary to be included in the English language skills courses	131	4.27	1.053
Q3K. I like the general vocabulary to be included in the English language skills courses materials	131	3.47	.919
Valid N (listwise)	131		

The descriptive statics in Table 9 shows students' preference for learning the English language. The items of Q3B, Q3D, Q3E, and Q3J in the table above within the mean value (M= 4.5, 4.49, 4.44, and 4.27) respectively indicate that the respondents strongly agreed to these items. These revealed that they highly preferred technical vocabulary (Vocabulary taken from the health science/ medical field), learning English to help them in their academic study, learning English to be successful in their health profession, and wishing health science vocabulary to be included in the English language skills courses. The result also shows that they preferred topics, activities, and contents concerning health science to be included in the English language skills course materials (mean= 4.16), and they preferred English for medical purposes to general English (mean= 3.89).

However, as items Q3H, Q3G, and Q3F in the above table indicate, Students did not decide whether they learned English for personal interest

(M=3.02) and they learned to obtain their degree, but they did not learn English to join English culture (M=2.47).

3.2. Qualitative findings

3.2.1. Observation

This section presents the results of the health science major subject area class and hospital observation.

3.2.1.1. Health Science Classrooms Observations

Generally, Data presents extracts focusing on the language used in health science classrooms.

There were medical words, phrases, or abbreviations on their PowerPoint slides. The instructors used Amharic-English (code mixing) while teaching throughout all the observations in public health officer, nursing, and midwifery classes. A complete English sentence was not heard. Three of the instructors used Amharic to explain any medical words, phrases, or sentences from the PowerPoint. Surprisingly, they added Amharic suffixes to English words. That is, they used words that were half English and half Amharic. For example, Hi1 said "decision *achin"* to say our decision and "care *achin" to* say our care. *–achin* is an Amharic word that means "ours" in English. The suffix *"achin"* was added to mean "ours." Again, they say "*painu*" to say the pain. The suffix "U" was added to mean the English definite article “the”.

Extract 1

> *‘Lelaw’* fourth visit at 36 ‘new’. *‘Iziga’ wanegna’* screening for hypertension, antepartum hemorrhage *‘ina’* multiple gestation ‘new’. Multiple gestation focused ‘*new’* based ‘*new’*?
> Focused *‘new ayidele’*? The other is…, so these are the fourth visit at 36 weeks … hypertensive, any antepartum hemorrhage…eee. Bleeding ‘*kalat’* you have to check multiple gestations, presentation. *‘Lemindinew* presentation *lay* focus *yeminaregew sibali’* cephalic presentation *kalihone,* breach ‘minamin kehone adegna’ new to treat *‘huletegna’* decision *nachin lemawek. ‘Gilts new ayidele?’* Breach presentation ‘kehone iske *mechеresha mindi new*? Ces *‘new ayidele’*? By the way 36 weeks lay preach presentation ayimetam bizu gize’ 37, 38 *new lower yemiyaregew wayim* extra *manualization lay yemitayew*…,

In this extract, the teacher was teaching antenatal care to health officer students. Though the instructor was using Amharic in explaining the lesson, he was not discussing highly technical medical terms that are different from normal English words, such as hypertension, antepartum hemorrhage, multiple gestation antenatal care, cephalic presentation, breach presentation, ces, term, and post-term. It was observed that most of the words were medical words, and the instructor used code-mixing in presenting the lesson to the

students. Note that on the slide of his power point were all English words and phrases, almost all of which were technical medical words.

3.2.1.2. Hospital Observation

The researcher observed internship students in hospital wards to investigate the English language that health science students are expected to know in their future professional careers.

Firstly, it was observed that the instructor intervened at any point and asked what, how, why, and when questions to confirm whether the students exactly knew what they had done. It was observed that the challenging situation for internship students was interviewing the patient in Amharic and writing the history, chief complaint, history of present illness, vital signs, physical examination, pathophysiology, differential diagnosis, investigations, and management of the case in English to present to the clinical instructor in English. The researcher noticed that these activities needed accurate knowledge of tenses, especially past perfect, past, present perfect, and simple present in their active and passive forms, as well as pertinent background knowledge of medical or health-related English. The following sample extract indicates some of the situations.

Extract 7: Sample of medical ward teaching observation

> *S1: Demographic history*
> *This is 31 age young man comes to hospital l. The patient was sick. He has the pain the right lower quadrant. …Right lower quadrant* ee..aa…..ee…m *around right left quadrant area.*
> *Dr.1 and students: laughed hahaha…..*
> *S1: He has anorexia, nausea, vomiting and … of three day duration otherwise no history of any known chronic illness….*
> *Dr.1: Before that your HPI is abdominal pain of five five-day duration. Can you comment him on history? Have you got the patient? …*

In the above example, the student did not present the bedside report as expected, so the instructor stopped him and asked other group members to comment. As the researcher noticed, it was a poor presentation. It was observed that the history of the present illness (HPI) was wrongly presented. The student wrote separately in an isolated sentence, but HPI is written in essay form in chronological order of the case, starting from the patient's health before he had been seen to the present. Here, it was difficult to identify whether the student presented in such a way because of a lack of clinical knowledge or because of poor English language skills. However, it could be noticed that necessary English language skills, such as interviewing skills, paragraph or essay writing skills, tenses, and medical words were very important to write an HPI.

3.2.2. Interview

Semi-structured interviews were conducted with students and major subject area instructors to obtain detailed information regarding the English

language needed for the target situation and the English language they wished to learn. The respondents expressed that they need to learn English mainly for academic and professional purposes. They need to be good listeners and speakers, but they indicated that they didn't get what they wanted. For example, S1 said:

> *Okay expectation regarding the thing you have mentioned, my expectation was, I was thinking that I would have become a good listener as well as a good speaker, but in my opinion I didn't get with anything… (S1)*
> *As health science student English courses we took did not help us directly because the normal English word and the medical English word they are literally different...eeeee….r… (S2)*

From these responses, one can understand that the students were not happy with the English they had learned because it was not related to their field. S2 stated that normal English words and medical English words were different. As she stated, she needed to learn medical English. Regarding health science students' preferences for learning English (wants), the interview indicates that the student participants want to learn many things from the English language. They want to know the pronunciation, and they want to have good conversations. Even some of the interviewees blamed their instructor, saying he was wasting their time by teaching them unnecessary language. For instance, S1 said, "We want to listen to good conversation and interesting ways of teaching, but he didn't use them." "It was tracking unnecessary English that was not understandable by students." The student considered it as the fault of the instructors for using unnecessary language, but it was the course materials, which were prepared by the Ministry of Education.

Major subject area course instructors were interviewed to obtain information about the English language needs for their students as well as the overall benefits of the language for health sciences students.

The sampled instructor replied that it was very important because English is the medium of instruction for all courses. For example, he said, "It is very important as it is the medium of instruction for all the courses," Inst 1. They were also asked what kind of English they perceive their students need to pursue academic study and professional careers. They replied in both general English and medical English, but mostly medical English.

4. Discussion

As indicated in the findings section, all of the data collected through questionnaires, observations, and interviews were carefully analyzed, and the results were presented and carefully discussed. Investigating health science students' English language needs through a need analysis for the target situation, significant findings were obtained. This study investigated the English language and skills needed to do activities in both academic and professional settings to include in future English language courses. Besides, health science students' English language learning preferences, which help to include suitable content in the course materials, were found out. In this

section, therefore, the results are elaborated in line with answering the research questions based on the findings.

The first findings revealed that students always need reading skills for activities such as reading tests and exam questions, reading instructions for assignments, reading course handouts, and reading instructions for labs, respectively, in their field of study, whereas the next results showed reading instructions (drug use leaflets, physician decisions), reading prescribed drugs, all activities after the surgery that are written, translating English medical or health information to their language, and reading graphs, charts, and tables are skills they will need in their future profession. The result of the observations also indicated highly technical medical English terms are used in both academic and future profession of health science students. These findings seem consistent with Karimnia & Khodashenas (2018). They investigated that reading articles and textbooks, reading medical articles in technical journals, reading medical and technical manuals, reading medical text on the net, reading instruction of medical instruments, reading course pamphlets, reading instruction of drugs and reading medical notes were the most important and frequently used English sub-skills. Lodhi et al. (2018) also found that English was used in different medical academic activities such as following lecture instructions, reading articles and journals, comprehending graphs and charts in academic study, and reading medical literature and understanding the manuals of the medical equipment in professional settings. Gylys and Wedding (2009) claim that the language of Medicine is a specialized vocabulary used by health care practitioners.

The study found that English writing skills were always required by health science students when writing project reports or term papers, taking notes from lectures, writing research papers, taking notes from the course book, and writing lab or field reports. Table 6 shows that for their future health professional careers, English writing skills were always needed to write referral letters, reports (case reports, patient care reports, and follow-up reports), forms (prescriptions, vital signs, admission summaries, discharge summaries, etc.), and project proposals or research. This findings are to some extent inconsistent with Karimnia & Khodashenas (2018). They found that writing articles were the most important and frequently used English sub-skills.

The finding of data obtained from the participants implied that speaking skills were always needed in the health science field in giving presentations, participating in class discussions, and asking and answering questions in class, but they were also always needed in the students' future health professions: making presentations at seminars and conferences, attending medical meetings and conferences, speaking about medically related topics, and communicating with colleagues, in that order of importance, but rarely or never communicating with patients and their caretakers. The finding of these study agree with Antic and Milosavljevic (2016) who found that in medical profession, the nature of the job is very often participating in the international conference, seminars and congresses and this force them to emphasize the need for better knowledge of the conference language, for the ability of participating in academic medical discussion with colleagues abroad for a successful professional exchange without the language barrier. Popa (2013) also found that students' tasks and activities in class includes ordinary

communication in EMP like evaluation and opinion formation, expressing points of view and discussing on particular patient- nurse issue to more complex simulations and role play that implemented to different medical situation. Hashim et al. (2014) also discovered that acquiring and developing English speaking skills to become effective communicators in tertiary education and the work place is very important. The last speaking skills, communicating with patients and patient caretakers were very important in the health profession, according to the health professional interview and hospital observation, but the respondent perceived that they were not needed because communications were made in Amharic rather than English. However, this finding is a little bit deviate from Antic & Milosavljevic (2016) who discovered health professionals need oral skills more closely related to making communication with foreign colleagues and medical staff on strictly medical topics. This difference existed may be due to lack of foreign colleagues in the staff and often use Amharic with the patients, and others in oral communications in Ethiopia.

As the findings indicated, learner thought that in the academic field of health sciences, listening skills were needed to listen to lectures, to instructions and explanations in labs, to radio or TV programs or films about health sciences, and class discussions in their order of degree of recurrence, whereas the findings in Table 8 revealed health science students believe that in their future health professions, listening at meetings, seminars, or conferences and listening to presentations in English are regularly needed skills while listening to a colleague is sometimes needed but listening to a patient is never or rarely needed. Listening to patients and foreigners was the least necessary listening skill in English because it was done in Amharic. The result of the observations and interviews further revealed that empathic listening skills were needed in the health care system, but it was done in Amharic, not English. Karimnia & Khodashenas (2018) also found that listening to the medical lectures and listening to the presentation in conferences were the most important and frequently used English sub-skills.

Regarding the students' wants, the findings revealed that the health science students preferred learning English for their academic studies and their future professional careers. This finding is consistent with the findings of (Chemir & Kitila, 2022). They discovered that present English language courses do not motivate first-year students to enhance their academic language proficiency to continue their studies. Similarly, Ibrahim (2020, p. 83) discovered that "most of the students need English for their medical study. Gaffas (2019) also observed that the students valued the ESP course, particularly for improving their grasp of technical jargon. However, in Ethiopian higher education, health science or medical students studied Standard English classes just like any other student.

The results of interviews and observations revealed the priority of English language skills needed in the target situation. Reading skills, writing skills, listening skills, and speaking skills are consequently needed in the health science field of study, whereas writing skills, reading skills, speaking skills, and listening skills are needed in health professional activities according to the frequency of need, from most needed to least needed. This is comparable to Karimnia and Khodashenas (2018), who discovered that students prioritize

reading competence in terms of frequency of usage, significance, and proficiency. Abuklaish, (2014) also discovered that scientific students prefer a flexible ESP curriculum that includes practice in both receptive and productive abilities, but with a larger emphasis on reading and writing, best delivered by a bilingual instructor. However, Wahyuni, (2021) revealed that medical students require greater listening and speaking abilities than reading and writing. Antic and Milosavljevic (2016) also found that the skill of speaking is considered to be the most important by all participants, and reading skill was the second, whereas writing skill was the third and listening skill was the least important.

5. Conclusions

This study identified the English language skills that health science students require to participate in activities related to their academic field of study as well as their future profession. Most of the health science students seem to always need health-related English but rarely need general English. The findings also indicated that health science students' English language skills needed for their academic studies and future professional careers should be integrated into the course materials. It can be suggested that ESP courses that incorporate these types of teaching and learning activities, which the students need and prefer to learn from the English courses, be designed. It can also be suggested, based on the findings, that the course materials should focus more on reading skills and writing skills.

6. Future Research in the Area

Remember that each Ethiopian higher education college has its own set of conditions and student demographics; therefore, research should be conducted to determine the English language needs of each institution. By addressing these issues, researchers can help health science students improve their English language learning experiences and professional achievement.

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