Journal of English Language and Education
ISSN 2597- 6850 (Online), 2502-4132 (Print)
Journal Homepage: https://jele.or.id/index.php/jele/index

OPEN ACCESS Article

Morphological Analysis of Medical Terminology in Conference Abstracts for ESP Reference

https://doi.org/10.31004/jele.v11i3.2314

*Sherly Arwinda, Muhammad Rizky Rochmawan[ab]
[1]Universitas Telogorejo Semarang, Indonesia
[2]Universitas IVET Semarang, Indonesia
Corresponding Author: sherly@universitastelogorejo.ac.id

A B S T R A C T

Mastery of medical terminology is a crucial competency in international scientific communication, especially in abstract writing that demands high information density. However, many health academics still face challenges in utilizing the productivity of affixation to build precise medical terms. This study aims to identify the morphological structure of medical terms, compare their frequency of occurrence, and formulate pedagogical references for teaching English for Specific Purposes (ESP). This descriptive qualitative study uses content analysis method on a data corpus consisting of abstracts of International Conference on Health Practice and Research (ICHPR) in 2024 and 2025. Medical terms are dissected based on word-building theory to identify patterns of prefixes, roots, and suffixes. The analysis involves multi-step coding process where terms are validated against medical lexicons to ensure accuracy in identifying the derivatives. The findings show the dominance of the terms Hypertension (39 times) and Tuberculosis (15 times) as a consistent research focus. A shift in terminology trends from mental health issues (such as Schizophrenia) in 2024 to chronic physical issues (such as Pulmonary and Myofascial) in 2025 was also identified. The productivity patterns of derivational suffixes (such as -al, -ary, -ic) and pathological affixes (such as -itis, -osis) were proven to be the main instruments in the condensation of clinical meaning. Pedagogically, these results provide a reference list of priority vocabulary based on a real corpus that English lecturers can use to increase the morphological awareness of health students in facing global publications.

Keywords: *Morphology, English for Specific Purposes, Abstract, Medical Terminology, Pedagogical*

Article History:
Received 31st March 2026
Accepted 02nd May 2026
Published 03rd May 2026

INTRODUCTION

Morphology is a branch of linguistics that studies the internal structure of words and the processes of their formation. This involves the analysis of morphemes, which are the smallest units possessing meaning or grammatical function, as well as how combinations of morphemes form words (Rismaya et al., 2022; Sulastri et al., 2020). Morphology is defined as the mental system involved in word formation or the branch of linguistics that studies the internal structure of words and how they are formed (Aronoff, 2011, as cited in (Kusumawardhani, 2018). The study of word formation began to attract widespread attention in modern linguistics following Chomsky's publication in 1970 (Joaquin, 1991, as cited in Kusumawardhani, 2018). In practice, morphology is concerned with word construction in which morphemes—the smallest meaningful units—are attached to root words to change their meaning or grammatical function (Kolenchery, 2015; Kusumawardhani, 2018). One crucial aspect is derivational morphology, where the addition of affixes to a root word creates a new lexical unit with a different category or meaning. In word formation, there are free morphemes that can stand alone and bound morphemes such as prefixes and suffixes which must be attached to other morphemes to form a complete meaning. Specifically, this research focuses on the process of affixation, namely the addition of affixes to word roots or base morphemes to change meaning, word class, or grammatical function (Liu et al., 2023). Affixation includes prefixes, suffixes, infixes, and circumfixes, which play a crucial role in enriching vocabulary

and creating new nuances of meaning within a language (Zhang, 2022). This process is fundamental to understanding lexical evolution and semantic derivation across linguistic systems (Aldkiel, 2020).

In health literature, affixation is not merely a grammatical matter but a tool for communication efficiency that allows complex concepts to be condensed into concise and precise technical terms. The main characteristic of medical language lies in its morphological structure based on word roots, prefixes, and suffixes from Greek and Latin (Bahadoran et al., 2020). These elements function as "building blocks" that enable the formation of precise terminology for anatomical entities, physiological processes, or pathological conditions. For example, the term "polyneuritis" morphologically consists of the prefix poly- (many), the root neur (nerve), and the suffix -itis (inflammation).

Medical terminology is monosemic, where a single term refers to only one definite concept to minimize ambiguity (Chuang et al., 2020). Technically, this formation involves: Word Root: The core of the term referring to a body part (e.g., cardi- for heart). Prefix: The initial element indicating direction, amount, time, or location (e.g., hyper- for excessive). Suffix: The final element indicating a condition, disease, or procedure (e.g., -itis for inflammation or -osis for an abnormal condition). A deep understanding of this structure is key for practitioners to accurately perform decoding (understanding meaning) and encoding (composing words) (Labrak et al., 2024). Furthermore, automated morphological decomposition is fundamental in the development of biomedical natural language processing systems for efficient information retrieval within extensive medical corpora (Kocabiyikoglu, 2022; Claveau, 2020).

These morphological principles become highly relevant in the writing of academic health texts, particularly in international conference abstracts. An abstract is a genre of scientific writing with specific structural rules that functions as a miniature of the research. The term "abstract" itself reflects a linguistic process, derived from the Latin prefix "ab-" (away) and the verb "trahere" (to pull), which means to extract key information. Abstracts demand high information density and precise terminology to convey the background, objectives, methodology, findings, and conclusions within a limited word count (Pakpahan et al., 2021).

Furthermore, in global communication networks, consistency and language standardization become crucial to minimize message distortion (Ribeiro et al., 2019). The use of accurate medical terminology is a non-negotiable standard to avoid ambiguity among researchers across countries (Bahadoran et al., 2020). Therefore, authors tend to use medical terms laden with affixation to maintain information density without sacrificing universal clarity for diverse audiences. The reliance on Greek and Latin roots, which are specifically dominant in medical terminology, offers a universal framework for understanding that transcends individual language boundaries (Claveau, 2020). Empirical findings also show that morphological awareness has a significant relationship with phonological skills, vocabulary, and word reading, with variations in the strength of the relationship depending on the type of morphological awareness involved. Moreover, the study of morphophonological rules governing these affixes provides deep insights into the pronunciation and orthography of complex medical terms, ensuring accurate oral and written communication within the scientific community. This confirms that morphology serves as a linguistic foundation supporting the effectiveness of abstracts as a primary medium for the international dissemination of health research (Claveau, 2020).

Previous research provides an important foundation regarding terminology mastery. (Cheong et al., 2024) revealed that health literacy among health science students is influenced by gender and duration of education. This is reinforced by Nguyen, (2025) showing that terminology mastery in nursing students is highly dependent on variations in linguistic learning strategies. Subsequently, McAllister et al., (2025), proved that a linguistic approach through m-Learning significantly improves students' understanding of morphological rules. Then, Stallinga et al. (2015) mentioned that students can learn medical word to support the aim of communication with reducing the ambiguity.

However, real challenges remain, especially regarding the reliance on machine translation. Ghasemi & Hashemian (2016) states that machine systems still have limitations in handling morphological structures and lexical meanings contextually. Consequently, the phenomenon of lexicosemantic errors occurs, where authors perform surface translation without deep analysis of word roots and affix functions (Suryani et al., 2022). These findings align with converging evidence showing that strong mastery of academic vocabulary and morphological instruction contributes significantly to the understanding of word meaning, particularly for multilingual learners (Crosson et al., 2025). Nevertheless, Crosson et al. (2025) also emphasizes that interventions explicitly emphasizing bound morpheme-based word analysis such as Latin roots as primary meaning carriers are still relatively limited, even though this approach is proven effective in helping learners infer the meaning of new terms generatively. Limited understanding of these morphological structures, particularly in the context of specialized terminology, has the potential to cause meaning distortions that significantly impact healthcare costs and hospital data integrity (Firdayana et al., 2023).

Despite the importance of morphology, previous research has tended to focus on affixation as basic vocabulary acquisition in textbooks or error analysis at the university level. Morphological analysis in the context of international conference abstracts remains underexplored, even though accurate medical terminology is crucial for global information dissemination (Triwahyuni et al., 2018). Additionally, debates have emerged regarding the status of derivational affixes, whether they function as functional morphemes or lexical roots (Creemers et al., 2017). Although morphological awareness correlates positively with text comprehension (Kloehn et al., 2018), the focus of research has not yet touched upon the realm of professional writing by cross-disciplinary practitioners. However, most of these studies examine morphology with the scope of classroom and textbook analysis. There is an absence of research that investigates how morphological structures are deployed in academic genres such as abstract. So that in this study, morphological analysis will be implied in internasional conference's abstract.

English for Specific Purposes (ESP) teaching is a language education strategy created especially to give students the language skills required in their employment settings It is strongly related to medical students that must master medical vocabulary. ESP competence in the healthcare industry focuses on students' capacity to navigate intricate medical lexicons in order to satisfy interaction demands in global forums (Nguyen, 2025). This is important because medical English has technical features that require high accuracy to prevent meaning disambiguation when exchanging scientific data. This necessitates that medical education prioritize the acquisition of English for medical purposes, as proficiency in the language is crucial for healthcare professionals to remain current with advancements in research and clinical practice (Dubey, 2022). ESP competence in the healthcare industry focuses on students' capacity to navigate intricate medical lexicons in order to satisfy interaction demands in global forums. Moreover, the specialized vocabulary in medicine, encompassing technical and sub-technical terms, is particularly challenging for ESP learners and demands diversification and multilevel approaches in teaching (Zafirovska & Xhaferi, 2022). This is important because medical English has technical features that require high accuracy to prevent meaning disambiguation when exchanging scientific data.

By incorporating word structure analysis into the ESP curriculum, students can learn how to independently decode new medical terms. To understand the morphological components of medical terminology (e.g., prefixes, suffixes, and root words) enables students to infer the meaning of unfamiliar terms and apply them correctly within clinical contexts (Nguyen, 2025). A key challenge in ESP pedagogy today is how to shift learning methods from mere rote-learning to a more analytical, corpus-based morphological approach. This shift is crucial given that traditional ESP courses often lead to demotivation among learners who perceive themselves as passive recipients, hindering their engagement with complex medical terminologies (Khammari, 2023). Integrating word structure analysis into the ESP curriculum enables students to develop the generative ability to independently decode new medical terms, a vital skill in the rapidly evolving health literature.

The decision to focus specifically on conference abstracts is strategic. According to Hyland in Amnuai et al. (2020) abstract is an important as the essence of the research article. As a linguistoc products, abstract can represent the writer's focus. By thoroughly examining the process of affixation in medical terminology within abstracts written by professionals in the fields of nursing, physiotherapy, pharmacy, and midwifery, this study seeks to close that gap. The information comes from 6th and 7th International Conference on Health and Research (ICHPR) in 2024 and 2025 held by *Universitas Telogorejo Semarang*. With attendees from Brunei Darussalam, Malaysia, Indonesia, and the Philippines, this conference offers an important multicultural context. This research has a dual urgency: identifying morphological patterns in international medical discourse and providing pedagogical implications for English for Specific Purposes (ESP) teachers to increase the independence of health students in understanding scientific literature.

In the context of English for Specific Purposes (ESP), mastery of medical morphology is closely linked to the academic writing skills of healthcare students. Students are not only required to understand medical terms when reading literature but also to be able to produce these terms accurately when writing scientific articles or clinical reports. This morphology instruction, based on ICHPR data, provides students with a concrete model of how technical terms are used to maintain information density in abstracts and papers. By understanding the structure of roots, prefixes, and suffixes, students can minimize lexicosemantic errors and improve the professionalism of their writing, ultimately facilitating their participation in the global scientific community. This study aims to identify and morphologically classify medical terms in the abstracts of the 6th and 7th ICHPR based on root words, prefixes, and suffixes; compare the frequency of occurrence of dominant medical terms between the 2024 and 2025 conferences; and analyze affixation productivity patterns that can be used as pedagogical references in teaching Medical English (English for Specific Purposes).

METHOD

This study employs a descriptive qualitative approach with content analysis to explore morphological phenomena in medical terminology. The research data consists of medical terms containing affixations (prefixes and suffixes) extracted from 72 abstracts from the 6th and 7th International Health Practice and Research (ICHPR) conference held by Universitas Telogorejo Semarang, between 2024 and 2025. Purposive sampling was used, with abstracts selected with a high density of medical terms to ensure the richness of the data for morphological analysis.

The data analysis process was carried out in four systematic stages. First, medical terms were identified through skimming and scanning techniques across the entire available data corpus to map technical vocabulary. Second, the identified terms were segmented into their constituent morphemes, including word roots, prefixes, and suffixes, referring to Chabner (2020), word-building theoretical framework. Third, each morpheme's meaning was validated using Dorland's Medical Dictionary Online to ensure clinically accurate interpretation. Each medical term found was entered into an analysis table consisting of four main columns: (1) Target term, (2) Root word as the core meaning, (3) Prefix, and (4) Suffix. The identification process was carried out by determining the root word first as the initial step, followed by separating bound morphemes by referring to a standard medical dictionary to ensure classification accuracy. Finally, the data were classified based on their semantic function categories and their frequency of occurrence was calculated to reveal the most dominant affix productivity patterns used by authors in international scientific communication.

To maintain data reliability, each code entered into the table was re-verified using source triangulation, comparing the researcher's analysis results with Dorland's Medical Dictionary. This was done to avoid subjectivity in determining morpheme boundaries in complex medical terms.

FINDINGS AND DISCUSSION

The results and discussion of a morphological analysis of medical terms extracted from the research data corpus. Overall, researchers identified and analyzed technical terminology from 72 abstracts published in the proceedings of the 6th and 7th ICHPR. The analysis focused on mapping word-forming components, namely prefixes, word roots, and suffixes, to uncover the affixation patterns used by healthcare practitioners in scientific communication. The data obtained were then systematically classified to answer research questions related to the identification of structures, frequency distribution, and trends in morpheme productivity in international medical discourse. A summary of the morphological findings and data distribution is presented in the following tables, beginning with an in-depth identification by year of the conference and continuing with a quantitative comparison of the frequency of term occurrence.

Table 1. Morphological Analysis of 6th ICHPR Abstracts (2024)

Medical Term	Prefix	Root	Suffix	Morphological Meaning	Function
Hyperglycaemia	Hyper- (Excessive)	Glyc (Sugar)	-emia (Blood condition)	Excessive blood sugar level	Noun
Pharmacokinetic	Pharmaco (Drug)	Kinet (Movement)	-ic (Related to)	Study of drug movement in the body	Adjective
Antibacterial	Anti- (Against)	Bacteri (Bacteria)	-al (Related to)	Substance that fights or inhibits bacteria	Adjective
Preeclampsia	Pre- (Before)	Eclamps (Seizure/Flash)	-ia (Condition)	Medical condition occurring before seizures in pregnancy	Noun
Antineoplastic	Anti- (Against)	Neo (New) + Plas (Growth)	-ic (Related to)	Inhibits the growth of new (cancer) cells	Adjective
Antipyretic	Anti- (Against)	Pyret (Fever)	-ic (Related to)	Substance that reduces or relieves fever	Adjective
Analgesic	An- (Without)	Alges (Pain)	-ic (Related to)	Substance that relieves pain	Adjective
Dermatophytosis	–	Dermato (Skin) + Phyt (Fungus/Plant)	-osis (Abnormal condition)	Fungal infection of the skin	Noun
Dermatosis	–	Derma (Skin)	-osis (Abnormal condition)	General skin disease or condition	Noun
Pharyngitis	–	Pharyng (Throat)	-itis (Inflammation)	Inflammation of the throat	Noun
Schizophrenia	–	Schizo (Split) + Phren (Mind)	-ia (Condition)	Mental condition involving split or disordered thinking	Noun
Bioavailability	Bio- (Life)	Avail (Available)	-ity (Quality/State)	Availability of an active substance in systemic circulation	Noun

Source: *Book of Abstract from 6th International Conference of Health (2024)*

The data in Table 1 shows that during the 6th ICHPR, medical terminology was dominated by pharmacological terms and clinical interventions. The use of negative prefixes such as Anti- (in Antibacterial) and An- (in Analgesic) consistently appeared to describe treatment mechanisms. Furthermore, the use of the pathological suffix -ia (in Schizophrenia and Preeclampsia) was found, indicating a research focus on mental health disorders and pregnancy complications that year.

Then, the below table is the analysis data for &th ICHPR Abstracts;

Table 2. Morphological Analysis of 7th ICHPR Abstracts (2024)

Medical Term	Prefix	Root	Suffix	Morphological Meaning	Function
Hypertension	Hyper- (Excessive)	Tension (Pressure)	–	Blood pressure above normal.	Noun
Tuberculosis	–	Tubercul (Small lump)	-osis (Abnormal condition)	Chronic infectious disease of the lungs.	Noun
Pulmonary	–	Pulmon (Lung)	-ary (Related to)	Related to the lung organs.	Adjective
Decubitus	De- (Down/Lower)	Cubitus (Lying)	–	Pressure injury caused by prolonged lying down.	Noun
Myofascial	–	Myo (Muscle) + Fascia (Band/Connective tissue)	-al (Related to)	Related to muscles and their connective tissue.	Adjective
Osteoarthritis	–	Osteo (Bone) + Arthr (Joint)	-itis (Inflammation)	Chronic inflammation of joints and bones.	Noun
Myocardial	–	Myo (Muscle) + Cardi (Heart)	-al (Related to)	Related to the heart muscle.	Adjective
Infarction	In- (Into)	Farc (Block/Fill)	-tion (Process/Condition)	Tissue death due to blockage of blood flow.	Noun
Dyspnoea	Dys- (Difficult/Bad)	Pnoea (Breathing)	–	Difficulty in breathing (shortness of breath).	Noun
Cardiovascular	–	Cardio (Heart) + Vascul (Vessel)	-ar (Related to)	Related to the heart and blood vessels.	Adjective
Biosurfactant	Bio- (Life)	Surfactant (Surface agent)	–	Surface-active agent derived from living organisms.	Noun
Hematopoietic	–	Hemato (Blood) + Poie (Form)	-tic (Related to)	Related to blood cell formation.	Adjective

Source: *Book of Abstract from 7th International Conference of Health (2025)*

Table 2 shows a shift in focus toward chronic diseases and organ systems. Terms with combining forms (double-root words) such as Osteoarthritis and Cardiovascular appear more prominently. The use of the suffixes -ary (in Pulmonary) and -al (in Myofascial) demonstrates the authors' tendency to use medical adjectives to describe specific locations of human body disorders in their abstracts.

Table 3. Morphological Analysis of 6th and 7th ICHPR Abstracts

Medical Term	6th ICHPR (2024)	7th ICHPR (2025)	Total Occurrence	(%)
Hypertension	16	23	39	26.71%
Tuberculosis	7	8	15	10.27%
Pulmonary	0	10	10	6.85%
Myofascial	0	10	10	6.85%
Antibacterial	7	2	9	6.16%
Schizophrenia	8	0	8	5.48%
Osteoarthritis	4	3	7	4.79%
Dyspnoea	0	7	7	4.79%
Pharmacokinetic	5	0	5	3.42%
Analgesic	4	0	4	2.74%

Medical Term	6th ICHPR (2024)	7th ICHPR (2025)	Total Occurrence	(%)
Bioavailability	4	0	4	2.74%
Infarction	0	4	4	2.74%
Myocardial	0	4	4	2.74%
Decubitus	0	4	4	2.74%
Hematopoietic	0	3	3	2.05%
Biosurfactant	0	3	3	2.05%
Hyperglycaemia	3	0	3	2.05%
Cardiovascular	0	1	1	0.68%
Preeclampsia	1	0	1	0.68%
Antineoplastic	1	0	1	0.68%
Antipyretic	1	0	1	0.68%
Dermatophytosis	1	0	1	0.68%
Dermatosis	1	0	1	0.68%
Pharyngitis	1	0	1	0.68%

Source: *Processed from primary data (Book of Abstract of 6th and 7th* ICHPR

Based on Table 3, Hypertension was the most dominant term, appearing 39 times, making it the most consistent research topic over the two years of the ICHPR at Telogorejo University in Semarang. An interesting finding is that the term Schizophrenia, which appeared quite frequently in 2024 (eight times), disappeared completely in 2025, replaced by a surge in the terms Pulmonary and Myofascial (10 times each).

Overall, this frequency indicates that despite the dynamic development of research topics, authors' reliance on Greek-Latin morphological structures remains stable. This demonstrates that mastery of affixation (such as the prefix Hyper- and the suffix -itis) is a fundamental linguistic competency required for health researchers to contribute to international conferences like the ICHPR. Following the presentation of the three tables, this section discusses the research findings based on three main pillars: morphological identification, comparative frequency analysis, and pedagogical implications for teaching English for Specific Purposes (ESP).

Discussion

Identification and classification of Medical Words in Abstracts

Overall, this frequency indicates that despite the dynamic development of research topics, authors' reliance on Greek-Latin morphological structures remains stable. This demonstrates that mastery of affixation (such as the prefix Hyper- and the suffix -itis) is a fundamental linguistic competency required for health researchers to contribute to international conferences like the ICHPR. Following the presentation of the three tables, this section discusses the research findings based on three main pillars: morphological identification, comparative frequency analysis, and pedagogical implications for teaching English for Specific Purposes (ESP).

The identification results from 72 abstracts demonstrate that the medical terminology within the 6th and 7th ICHPR corpora is highly consistent with word-building theory. Data classification reveals that the majority of medical terms employed by researchers are derivational in nature. For instance, terms such as Osteoarthritis and Cardiovascular exhibit the use of complex combining forms, where two – word roots are integrated to provide precise anatomical specifications. The use of pathological suffixes, such as *-itis* (inflammation) and *-osis* (abnormal condition), was found to be the most productive pattern in defining diagnoses. This aligns with the findings of the research by Stallinga et al., (2015); Chuang et al., (2020); Bahadoran et al., (2020) who states that the rigid morphological structure of medical language serves to minimize ambiguity in international scientific communication. The precision in segmenting these morphemes proves that abstract authors at the ICHPR conference tend to use meaning-dense technical terms to overcome word count constraints within an abstract. To examine the distribution of medical words, Table 3 presents the frequency of medical terms identified in the abstracts.

Comparative Frequency Analysis of Dominant Terms (2024 vs 2025)

The frequency analysis reveals dynamic shifts in research focus at *Universitas Telogorejo Semarang* over the past two years. The term "Hypertension" emerged as the most dominant, with a total of 39 occurrences (16 in 2024 and 23 in 2025). This consistency indicates that research on non-communicable diseases (NCDs) remains a central issue in the health discourse of this forum. However, significant shifts occurred in other terminologies. The term "Schizophrenia," which was quite prominent in 2024 (8 occurrences), disappeared completely in 2025, being replaced by a surge in terms such as "Pulmonary" and "Myofascial" (10 occurrences each). This shift indicates a transition in research focus from mental health domains toward physical rehabilitation and respiratory infectious diseases. The phenomenon of terminology fluctuation illustrates that while the morphological rules remain constant, the lexicon chosen by researchers is heavily influenced by global health trends and the specific themes of the conference in that year. These findings support Bakagianni et al. (2025) and Lim (2025) that the observations regarding the dynamic nature of medical terminology within scientific corpora.

The dominance of the term "Hypertension" (39 occurrences) in this corpus is not merely a statistic, but a concrete reflection of the health burden in Indonesia. As the non-communicable disease (NCD) with the highest prevalence according to Basic Health Research (Riskesdas) data, hypertension is a strategic research priority for academics at Telogorejo University in Semarang. Linguistically, the productive use of the prefix "Hyper-" (excessive) and the root "tension" (pressure) demonstrates that researchers rely on this morphological structure to communicate the most pressing pathological conditions in local communities to the international stage. A similar trend is seen in the term "Tuberculosis" (15 occurrences), which consistently appears in line with Indonesia's status as the country with the second-highest TB burden in the world. Here, the suffix "-osis" (abnormal condition) becomes an indispensable linguistic tool for researchers discussing strategies for managing infectious diseases, which remain a major challenge at the regional level.

Furthermore, the shift in vocabulary between 2024 and 2025 reveals the dynamic nature of medical word choice, influenced by situational context. At the 6th ICHPR (2024), the theme "Building Mental Health Awareness" was the driving force behind the emergence of the term Schizophrenia and the use of the suffix -ia to define various mental conditions. However, when the 7th ICHPR (2025) adopted the theme "Transforming Healthcare with Technology," a significant lexical transition occurred. Researchers' attention shifted from mental health to organ systems directly intersecting with medical technology innovations. The emergence of terms such as Pulmonary and Myofascial (each appearing 10 times) reflected current technological trends in respiratory aids and physical rehabilitation or physiotherapy devices. This phenomenon demonstrates that while medical word formation rules are fixed and rooted in classical languages, their application is highly flexible. Researchers intuitively select the most relevant linguistic "building blocks" (prefixes, roots, suffixes) to respond to global health trends and the thematic focus of the scientific community at that time.

Affixation Productivity Patterns as Pedagogical References for ESP

In the realm of English for Specific Purposes (ESP), the primary goal is to equip learners with the specific linguistic tools required for their professional environment. In health sciences, this mastery is centered on the ability to navigate complex medical lexicons. The findings of this study emphasize that ESP instruction must shift from general vocabulary rote-learning to a corpus-based morphological approach, which directly addresses the communicative needs of health practitioners in international forums. The most significant finding for English for Specific Purposes (ESP) instruction is the identification of affixation productivity patterns that can serve as teaching material references. The researcher identified three crucial patterns for health students to master:

Adjectival Category Suffixes: The productivity of suffixes such as -al, -ary, and -ic is remarkably high in transforming anatomical organs into descriptive terms (e.g., Pulmon-ary,

Myocardi-al, Analges-ic). Quantitative and directional prefixes as the use of prefixes such as Hyper- and Pre- provides essential references regarding a patient's clinical status. Self-Decodification Patterns as the emergence of numerous new terms in 2025 suggests that mastering roots is far more effective than memorizing words in isolation. The emergence of numerous new terms in 2025 suggests that mastering roots and affixes is far more effective than memorizing words in isolation. From an ESP perspective, this serves the ultimate purpose of fostering learner autonomy. By mastering the 'building blocks' of medical language, students gain the generative power to decode unknown terms independently, which is a vital skill for lifelong learning in the rapidly evolving medical field.

Pedagogically, this corpus-based data provides a "roadmap" for English lecturers to design authentic materials. Instead of relying on general texts, instructors can utilize high-frequency word lists from the ICHPR as priority materials. This is closely related to Labrak et al., (2024) and Kirby et al., (2025) which proves that enhancing morphological awareness significantly improves students' ability to decode words or terms they have never encountered before. Consequently, ESP instruction does not merely focus on language proficiency but also on empowering students to compose abstracts that meet international standards.

Ultimately, this research bridges the gap between theoretical morphology and practical ESP pedagogy. By utilizing the identified high-frequency word lists from the ICHPR corpus, ESP practitioners can design curricula that are not only authentic but also highly relevant to the actual requirements of global scientific dissemination. This ensures that health students are not just learning a language, but are being empowered to participate actively in the international scientific community.

CONCLUSIONS

This study successfully uncovered the morphological patterns and dynamics of medical terminology usage in the corpus of abstracts from the 6th and 7th editions of the ICHPR international conferences. The primary limitation of this research is the relatively small corpus size, consisting of 72 abstracts from a single conference series. Consequently, the findings may not fully capture the entire diversity of global medical nomenclature. Based on an analysis of 72 abstracts, it can be concluded that the identification and classification of medical terms demonstrate a strong reliance on Greek- and Latin-based word-building systems. The use of prefixes and suffixes is not merely a grammatical complement, but a key instrument in compressing precise clinical information within the word limit of an abstract. Frequency comparisons indicate that the term "Hypertension" remains the most dominant research focus in the past two years, while fluctuations in other terms, such as the disappearance of "Schizophrenia" and the rise of "Pulmonary" and "Myofascial," indicate shifting trends in health research of the international conference. Overall, the patterns of affixation productivity discovered particularly the dominance of derivational suffixes marking adjective categories and pathological suffixes provide empirical evidence that mastery of morphology is key for academics to communicate effectively in global forums. This study suggests that ESP instruction should transition from rote-learning to a corpus-based morphological approach. Lecturers can utilize the high-frequency word lists from this study to foster learner autonomy in decoding complex terms. Furthermore, the curriculum should prioritize morphological awareness, ensuring that materials are derived from authentic international conference data to better prepare students for global scientific dissemination. Then, for future research should expand the data corpus to include abstracts from various international publishers and regions. Additionally, further studies could explore the pedagogical effectiveness of integrating these specific morphological patterns into ESP classroom interventions through experimental research designs.

REFERENCES

Aldkiel, A. D. (2020). Assessing multilingual proficiency of Saudi children aged 6 to 12 from a story at the Saudi school in Paris. *HAL (Le Centre Pour La Communication Scientifique*

Directe). https://tel.archives-ouvertes.fr/tel-03195818

Amnuai, W., Kotuta, P., & Duangprasertchai, M. (2020). Textual And Linguistic Characteristics Of Research Article Abstracts. *Journal: A Journal on Language and Language Learning*, *23*(1). https://doi.org/10.24071/llt.2020.230113

Bahadoran, Z., Mirmiran, P., Kashfi, K., & Ghasemi, A. (2020). The Principles of Biomedical Scientific Writing: Abstract and Keywords. In *International Journal of Endocrinology and Metabolism* (Vol. 18, Number 1). https://doi.org/10.5812/ijem.100159

Bakagianni, J., Pouli, K., Gavriilidou, M., & Pavlopoulos, J. (2025). A systematic survey of natural language processing for the Greek language. *Patterns*, *6*(11), 101313. https://doi.org/10.1016/J.PATTER.2025.101313

Chabner, D.-E. (2020). *Medical Terminology: A Short Course* (9th ed.). Elsevier.

Cheong, K. Y., Syed Mahmud, S. M. B., Chng, N. W., Kwek, G. J., Yan, C. C., & Yeung, M. T. (2024). Cross-sectional survey of health literacy among health science students in Singapore. *The Journal of Medicine Access*, *8*. https://doi.org/10.1177/27550834231222382

Chuang, Y.-Y., Vollmer, M. L., Shafaei-Bajestan, E., Gahl, S., Hendrix, P., & Baayen, R. H. (2020). The processing of pseudoword form and meaning in production and comprehension: A computational modeling approach using linear discriminative learning. *Behavior Research Methods*, *53*(3), 945–976. https://doi.org/10.3758/s13428-020-01356-w

Claveau, V. (2020). About Natural Language Processing for Information Retrieval and vice versa. *HAL (Le Centre Pour La Communication Scientifique Directe)*. https://hal.science/tel-03027676

Creemers, A., Don, J., & Fenger, P. (2017). Some affixes are roots, others are heads. *Natural Language & Linguistic Theory 2017 36:1*, *36*(1), 45–84. https://doi.org/10.1007/S11049-017-9372-1

Crosson, A. C., Kieffer, M. J., McKeown, M. G., & Nagy, W. (2025). Cross-Language Morphological Analysis Improves Academic Word Learning for Multilingual Adolescents. *Scientific Studies of Reading*, *29*(1), 55–84. https://doi.org/10.1080/10888438.2024.2415916;Journal:Journal:Hssr20;Wgroup:String:Publication

Dubey, S. J. (2022). English for Medical Purposes: A Review. In *Journal of Pharmaceutical Negative Results* (pp. 1473–1476). Medknow. https://doi.org/10.47750/pnr.2022.13.s09.178

Firdayana, F., Nurmalasari, M., Hosizah, H., & Afrizal, S. H. (2023). Evaluation of the Accuracy of Medical Terminology and Its Relationship to the Accuracy of Clinical Coding in Health Facilities: Systematic Literature Review. *Jurnal Ners*, *7*(2), 1171–1181. https://doi.org/10.31004/jn.v7i2.16381

Ghasemi, H., & Hashemian, M. (2016). A Comparative Study of Google Translate Translations: An Error Analysis of English-to-Persian and Persian-to-English Translations. *English Language Teaching*, *9*(3), 13. https://doi.org/10.5539/ELT.V9N3P13

Khammari, H. (2023). Multimodality in Teaching English for Specific Purposes in Higher Education. *TESOL and Technology Studies*, *4*(2), 49–58. https://doi.org/10.48185/tts.v4i2.924

Kirby, J. R., Deacon, S. H., Georgiou, G., Geier, K., Chan, J., & Parrila, R. (2025). Effects of morphological awareness, naming speed, and phonological awareness on reading skills from Grade 3 to Grade 5. *Journal of Experimental Child Psychology*, *253*, 106188. https://doi.org/10.1016/J.JECP.2024.106188

Kloehn, N., Leroy, G., Kauchak, D., Gu, Y., Colina, S., Yuan, N. P., & Revere, D. (2018). Improving consumer understanding of medical text: Development and validation of a new subsimplify algorithm to automatically generate term explanations in English and Spanish. *Journal of Medical Internet Research*, *20*(8), e10779. https://doi.org/10.2196/10779

Kocabiyikoglu, A. C. (2022). Medical presciptions in natural language on smartphones. *HAL (Le Centre Pour La Communication Scientifique Directe)*. https://theses.hal.science/tel-

04097774

Kusumawardhani, P. (2018). The error analysis of derivational morphology in efl's english narrative composition. *International Journal of Language Education*, *2*(1), 22–30. https://doi.org/10.26858/ijole.v2i1.4857

Labrak, Y., Bazoge, A., Daille, B., Rouvier, M., & Dufour, R. (2024). How Important Is Tokenization in French Medical Masked Language Models? *ArXiv (Cornell University)*. https://doi.org/10.48550/arxiv.2402.15010

Lim, W. M. (2025). What Is Qualitative Research? An Overview and Guidelines. *Australasian Marketing Journal*, *33*(2), 199–229. https://doi.org/10.1177/14413582241264619;Wgroup:String:Publication

Liu, Y., Groen, M. A., & Cain, K. (2023). The association between morphological awareness and reading comprehension in children: A systematic review and meta-analysis. In *Educational Research Review* (Vol. 42, p. 100571). Elsevier BV. https://doi.org/10.1016/j.edurev.2023.100571

McAllister, N., Tavener-Smith, T., & Jackson, J. (2025). Leveraging an mLearning Prototype to Teach Medical Terminology to Nursing Students: A Linguistic Approach. *Teaching and Learning in Nursing*, *20*(1), e84–e90. https://doi.org/10.1016/J.TELN.2024.08.006

Nguyen, N. G. H. (2025). Challenges and Strategies in Teaching English for Medical Purposes: A Literature Review. In *International Journal of Language Instruction* (Vol. 4, Number 3, pp. 57–73). https://doi.org/10.54855/ijli.25434

Nguyen, N. H. (2025). An exploration of language learning strategies employed by medical students in learning English medical terminology at Nguyen Tat Thanh University. *HCMCOUJS-Social Sciences*, *16*(6), 3–13. https://doi.org/10.46223/HCMCOUJS.soci.en.16.6.4390.2026

Pakpahan, A. F., Prasetio, A., Gurning, E. S. N. K., Situmorang, R. F. R., Sipayung, T. P. D., Sesilia, A. P., Purba, P. P. R. B., Chaerul, M., Siagian, I. Y. V., Rantung, G. A. J., Karim, A., & Simarmata, J. (2021). *Metodologi Penelitian Ilmiah*.

Rismaya, R., Wahya, W., & Lukman, F. (2022). Kata Bahasa Indonesia Penanda Register Twitter: Suatu Kajian Morfologi. *DIGLOSIA Jurnal Kajian Bahasa Sastra Dan Pengajarannya*, *5*(2), 511–526. https://doi.org/10.30872/diglosia.v5i2.411

Stallinga, H. A., ten Napel, H., Jansen, G. J., Geertzen, J. H., de Vries Robbé, P. F., & Roodbol, P. F. (2015). Does language ambiguity in clinical practice justify the introduction of standard terminology? An integrative review. *Journal of Clinical Nursing*, *24*(3–4), 344–352. https://doi.org/10.1111/JOCN.12624

Sulastri, A., Yunus, N. H., & Riniawati, R. (2020). Analisis Kesalahan Penggunaan Afiks dalam Makalah Mahasiswa Semester 1 Program Studi Pendidikan Bahasa Indonesia Universitas Al Asyariah Mandar. *Pepatudzu Media Pendidikan Dan Sosial Kemasyarakatan*, *16*(1), 51. https://doi.org/10.35329/fkip.v16i1.661

Suryani, N. Y., Fitria, T. N., Tinggi, S., Kesehatan, I., & Khadijah, S. (2022). Abstract Translation in Scientific Writing by Non-English Major Student using Google Translate. *JETAL: Journal of English Teaching & Applied Linguistic*, *3*(2), 33–40. https://doi.org/10.36655/JETAL.V3I2.669

Triwahyuni, N., Imranuddin, I., & Zahrida. (2018). An Analysis Of Word Formation Encountered In Medical Terms In The Jakarta Post's Articles. *Journal of English Education and Teaching*, *2*(2), 93–102. https://doi.org/10.33369/jeet.2.2.93-102

Zafirovska, A., & Xhaferi, B. (2022). Vocabulary Acquisition In English For Medicine - Students' Perspective. *Journal of Teaching English for Specific and Academic Purposes*, 505. https://doi.org/10.22190/jtesap2203505z

Zhang, R. (2022). Developing morphological knowledge with online corpora in an ESL vocabulary classroom. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.927636