

LINGUODIDACTIC AND ETHNO-CULTURAL STUDY OF NEUROLOGICAL DISEASE TERMINOLOGY IN ENGLISH AND UZBEK LANGUAGES

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Annotation. *The article presents a comprehensive comparative study of neurological disease terminology in the English and Uzbek languages from both linguodidactic and ethno-cultural perspectives. It explores how neurological terms, particularly those related to mental and nervous disorders, reflect the cognitive, communicative, and cultural dimensions of language. The research highlights morphological structures of medical terminology derived from Greek and Latin roots, as well as the hybrid character of Uzbek equivalents combining loanwords and native expressions. The paper emphasizes that effective teaching of medical terminology requires an integrated approach that includes morphological analysis, contextual application, and cultural interpretation. It further identifies semantic asymmetries between English and Uzbek terms—such as nervous breakdown versus asab buzilishi—which demonstrate the influence of cultural worldview on linguistic representation. The proposed linguodidactic framework offers a model for enhancing terminological competence, intercultural understanding, and professional communication among medical learners.*

Keywords: *neurological terminology; English and Uzbek languages; linguodidactics; ethno-cultural equivalence; medical linguistics; cognitive awareness; cultural interpretation; semantic asymmetry*

Introduction. In recent decades, the field of medical linguistics has undergone rapid development due to the global expansion of biomedical knowledge and the internationalization of healthcare education. Among its subfields, the study of neurological terminology occupies a special position because such terms describe not only physiological disorders but also complex mental and emotional states that are deeply embedded in national culture and worldview [1]. The linguistic and semantic features of neurological terms, therefore, deserve attention from the perspectives of terminology studies, translation, and linguodidactics. In the English language, medical terminology — particularly that associated with neurology and psychiatry — is largely derived from Greek and Latin morphemes such as neuro-, psycho-, cerebro-, -pathy, and -itis, which form internationally recognized lexical units. In contrast, the Uzbek medical lexicon contains both loanwords from Russian and Latin and culturally marked native expressions (e.g., asab tizimi buzilishi “nervous system disorder,” ruhiy siqilish

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“mental stress”) that reflect local conceptualization of health and illness [2]. The coexistence of these linguistic layers highlights the importance of comparative and cross-cultural study of neurological terminology. The relevance of this research stems from the growing need to harmonize medical terminology across languages, while preserving cultural specificity. In modern higher education, especially in the teaching of English for Medical Purposes (EMP), the correct interpretation, translation, and pedagogical presentation of neurological terms remain a challenge [3]. The semantic complexity of such terms, the influence of Latin etymology, and the presence of metaphorical or culture-specific equivalents in Uzbek create difficulties for learners and translators alike [4]. From a linguodidactic perspective, mastering medical terminology requires the integration of semantic analysis, etymological awareness, and communicative competence. Therefore, effective teaching of neurological vocabulary should rely on interactive methods, visual-linguistic models, and context-based learning strategies that facilitate retention and cross-cultural understanding [5]. From an ethno-cultural viewpoint, the concept of “nervousness” or “mental disorder” has different connotations in English and Uzbek. In English, such terms are used with clinical precision (nervous breakdown, mental disorder, neurodegenerative disease), whereas in Uzbek discourse, the notion of *asab* extends beyond medical meaning to include emotional stability, temperament, and even moral restraint [6]. This demonstrates that terminological equivalence is often partial and requires semantic adaptation in translation and pedagogy. The aim of the present paper is to conduct a linguodidactic and ethno-cultural analysis of neurological terminology in English and Uzbek, to identify their semantic, morphological, and cultural features, and to propose effective teaching and translation strategies. The object of the study is the system of neurological terms in both languages, while the subject involves their linguistic, didactic, and cultural characteristics. The novelty of the research lies in its attempt to integrate comparative terminology studies with ethnolinguistic and pedagogical approaches, offering new insights into the teaching of specialized medical vocabulary in bilingual contexts [7].

Linguistic Features of Neurological Terminology. Neurological terminology forms one of the most complex and historically layered subsystems of medical language. Its development is the result of centuries of interaction between classical languages, such as Greek and Latin, and modern European medical traditions. The vast majority of terms related to the nervous system are Greek–Latin hybrids, constructed from morphemes denoting anatomy (neuron, cerebrum), function (motor, sensor), and pathology (-pathy, -itis) [8]. These morphological units have retained remarkable stability across languages, serving as universal building blocks in international medical discourse. From a morphological perspective, neurological terms often exhibit polycomponent structures, combining prefixes, roots, and suffixes to express complex

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pathological processes. For example, encephalopathy consists of en- (“in”), kephalos (“head”), and pathos (“disease”), literally meaning “disease of the brain.” Similarly, neurotransmitter integrates neuro- (“nerve”) and transmit (“to send”), referring to substances that transmit impulses between neurons [9]. Such terms exemplify the principle of semantic transparency in medical language — each morpheme contributes a specific conceptual element to the overall meaning.

In contrast, the Uzbek language represents a mixed terminological system, where native lexical elements coexist with borrowings from Russian, Arabic, and Latin. For instance, the Uzbek equivalents *asab tizimi*, *miya falaji*, and *ruhiy siqilish* demonstrate a strong preference for descriptive expressions reflecting national conceptualization. Loanwords such as *nevroz* (from Russian *невроз*), *insult* (from Latin *insultus* via Russian), and *psixoz* (from Greek *psyche* + *-osis*) are integrated into Uzbek phonology and morphology while maintaining their core medical meaning [10]. This mixture of native and borrowed elements illustrates the hybrid character of modern Uzbek medical terminology.

A key linguistic feature of neurological terminology is its semantic precision and hierarchical structure. The semantic field includes terms denoting anatomical units (neuron, synapse, cortex), physiological processes (impulse conduction, reflex), and pathological conditions (disorder, syndrome, degeneration). Within this field, English tends to favor monolexemic terms (single-word terms) for conciseness, whereas Uzbek frequently employs descriptive multiword expressions such as *asab faoliyati buzilishi* (“disruption of nervous function”) [11].

Another characteristic is synonymy and terminological variation. In English, terms such as *nervous breakdown*, *mental collapse*, and *stress disorder* may overlap in meaning but differ in stylistic register and clinical specificity. Uzbek, on the other hand, maintains more unified terminology, often using one general term (*asab buzilishi*) to denote multiple psychological states. This asymmetry complicates translation and requires careful contextual interpretation [12].

Furthermore, the influence of international medical standards — such as the International Classification of Diseases (ICD-11) — has led to the standardization of neurological terminology worldwide. English remains the dominant source of new medical terms, and many of them enter Uzbek scientific discourse through bilingual dictionaries, medical education, and translation of WHO documents [13]. However, despite globalization, national linguistic and cultural factors continue to shape how these terms are understood and used in clinical and pedagogical contexts.

The linguistic nature of neurological terminology is characterized by morphological transparency, etymological diversity, semantic hierarchy, and cross-linguistic adaptation. The coexistence of international and national terminological elements in English and Uzbek not only reflects the evolution of medical science but

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also the linguistic identity of each culture. These linguistic properties form the basis for the subsequent linguodidactic and ethno-cultural analysis presented in the next section.

Linguodidactic Analysis of Neurological Terms. The linguodidactic study of neurological terminology focuses on how specialized medical vocabulary related to the nervous system is acquired, taught, and conceptually internalized by learners of English and Uzbek. Given the increasing role of English for Medical Purposes (EMP) in higher education, effective teaching of neurological terms requires the integration of linguistic, cognitive, and cultural aspects of learning [14]. This section analyzes the main challenges faced by learners, identifies pedagogical strategies for mastering complex medical vocabulary, and proposes a didactic model based on comparative linguistic principles.

One of the major difficulties in teaching neurological terminology is its morphological and semantic opacity for non-native learners. Most neurological terms consist of multiple morphemes of Greek and Latin origin, whose meanings are not immediately recognizable to students without etymological awareness. For instance, terms such as amyotrophic lateral sclerosis, encephalopathy, and polyneuropathy contain several bound morphemes (a-, myo-, troph-, path-), each carrying a distinct semantic value [15]. Therefore, explicit teaching of morphological analysis helps learners decode unfamiliar terms and facilitates long-term retention.

A second challenge concerns the semantic hierarchy within medical terminology. Students must distinguish between closely related categories such as disease, disorder, syndrome, and condition. These distinctions are not always transparent in Uzbek, where many of them are translated by a single equivalent, e.g., *kasallik* or *buzilish*. To address this, linguodidactic models should include contrastive semantic mapping, allowing learners to visualize terminological relations between the two languages [16].

The teaching context also plays an essential role. In medical universities of Uzbekistan, English medical terminology is often introduced through translation-based instruction. While this method promotes lexical equivalence, it does not sufficiently develop communicative competence. Contemporary linguodidactic theory emphasizes task-based learning, multimodal visual materials, and simulation of clinical communication as more effective approaches [17]. For example, using patient-case scenarios or diagnostic dialogues enables learners to apply neurological terms in meaningful contexts rather than in isolation.

Another didactic aspect is interdisciplinary integration. Neurological terms are not only linguistic entities but also conceptual representations of physiological processes. Therefore, collaboration between language instructors and medical specialists can significantly improve the authenticity and relevance of learning

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materials. Joint courses, bilingual glossaries, and terminology databases can facilitate the creation of contextualized tasks where students interpret, translate, and explain neurological phenomena [18].

The use of digital technologies has also transformed the teaching of medical terminology. Platforms such as Quizlet, Anki, and specialized Learning Management Systems (LMS) allow for spaced repetition and visual association of terms through images, audio pronunciation, and etymological notes. For Uzbek learners, combining such technologies with bilingual terminology corpora (English–Uzbek) helps establish deeper semantic connections and improve recall [19].

1. In the framework of modern linguodidactics, successful mastery of neurological terminology depends on three interrelated components:
2. Cognitive awareness – understanding the etymological and structural composition of terms;
3. Communicative competence – applying the terminology appropriately in clinical and academic discourse;
4. Cultural sensitivity – recognizing how conceptualizations of mental and neurological health differ across languages and cultures [20].

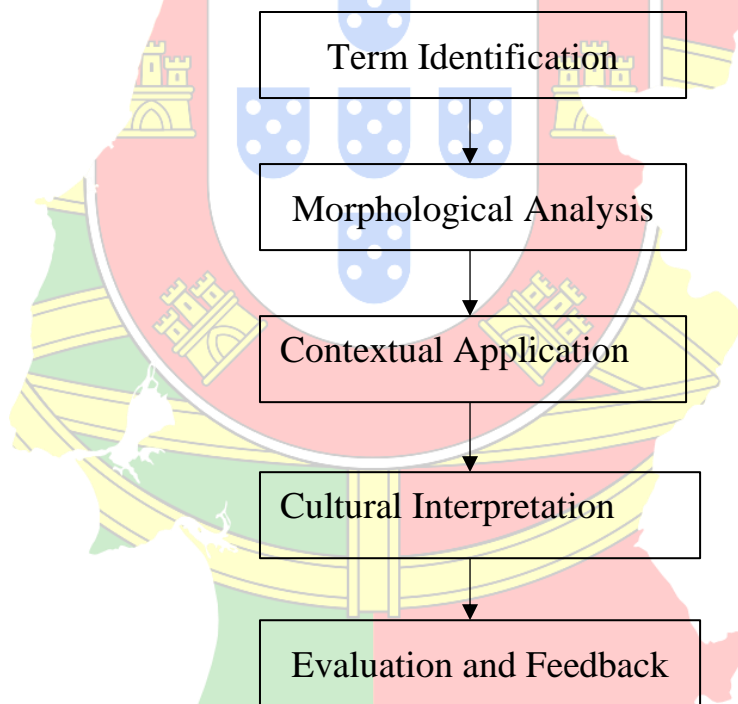


Fig 1. *Linear Model of Linguodidactic Stages in Neurological Term Learning*

This linear diagram illustrates the sequential stages of the linguodidactic process for acquiring neurological terminology.

The process begins with *Term Identification*, where learners recognize medical terms within academic or clinical contexts.

It proceeds through *Morphological Analysis*, in which learners decode Greek and Latin components (neuro-, psycho-, -pathy).

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Next, *Contextual Application* ensures that the term is used appropriately in medical discourse, followed by Cultural Interpretation, where students grasp semantic nuances and cultural connotations.).

The cycle culminates in *Evaluation and Feedback*, which consolidates learning outcomes and develops terminological competence through reflection and correction.

This linear sequence demonstrates that linguistic, communicative, and cultural awareness are interdependent components of effective medical language education.

The linguodidactic analysis of neurological terms demonstrates that the teaching process must go beyond rote memorization. It should integrate morphological decoding, semantic differentiation, and contextual communication supported by digital tools and cross-cultural awareness. Such an approach not only enhances lexical retention but also prepares learners for real-life professional communication in multilingual medical environments.

Ethno-Cultural Component and Semantic Equivalence. Language and culture are inseparable in shaping how medical concepts, particularly those related to mental and neurological health, are expressed and understood. The ethno-cultural component of neurological terminology determines not only lexical choice but also the emotional and social connotations attached to illness. In this respect, the comparison between English and Uzbek terms reveals significant semantic asymmetry rooted in distinct cultural perceptions of the human psyche and mental balance [21].

In English-speaking medical discourse, terminology tends to emphasize clinical precision and emotional neutrality. Terms such as nervous breakdown, mental disorder, or anxiety syndrome denote strictly defined diagnostic categories recognized by international medical classifications. Their semantic range is controlled by institutions such as the World Health Organization (WHO) and the American Psychiatric Association (APA) through manuals like ICD-11 and DSM-5 [22]. In contrast, Uzbek equivalents like *asab buzilishi* (“nervous disturbance”), *ruhiy siqilish* (“mental tension”), or *miya charchoqligi* (“brain fatigue”) often carry metaphorical or evaluative meanings, reflecting both physiological and emotional experiences in everyday communication [23].

The concept of “*asab*” in Uzbek culture extends beyond the purely neurological dimension. It encapsulates ideas of patience, moral control, and inner balance. When someone is described as *asabi* (nervous), it may refer not to a clinical condition but to an emotional temperament. In English, however, adjectives like *nervous* or *anxious* are used more narrowly to describe temporary psychological states or specific medical symptoms [24]. This divergence exemplifies partial equivalence, where a single lexical unit in one language covers several conceptual domains in another.

Cultural variation also manifests in metaphorical conceptualization. For instance, English medical discourse frequently employs mechanical metaphors such as

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neural pathway, brain circuit, or mental breakdown, reflecting the influence of industrial and technological imagery on Western thought. Uzbek medical and folk terminology, on the other hand, often relies on organic or spiritual metaphors — e.g., asab charchagan (“the nerve is tired”), ruhiy siqilish (“the soul is squeezed”) — that stem from holistic views of body and spirit [25]. Such differences highlight how metaphor functions as a linguistic bridge between scientific terminology and cultural worldview.

From the perspective of semantic equivalence in translation, neurological terms may exhibit three primary relationships:

Full equivalence — when both forms coincide semantically and functionally (neurosis – nevroz).

Partial equivalence — when a term in one language covers a broader or narrower field (nervous breakdown – asab buzilishi).

Cultural substitution — when a term is adapted to fit cultural understanding (mental health – ruhiy sog‘lomlik) [26].

Understanding these equivalence types is crucial for linguodidactic purposes. Students learning medical English must recognize that translation does not merely involve lexical substitution but cognitive and cultural transfer. Failure to account for cultural semantics can lead to misinterpretation, especially when terms like mental illness are translated into Uzbek contexts, where “ruhiy” carries religious and moral implications [27].

In a linguodidactic context, the ethno-cultural approach enhances learners’ intercultural competence and semantic flexibility. Teaching materials that integrate cultural notes, comparative metaphors, and real-life discourse examples enable learners to interpret medical terms more accurately and empathetically. For example, contrasting stress disorder with ruhiy siqilish helps learners grasp both linguistic form and cultural essence simultaneously. Such methods align with communicative language teaching principles that prioritize meaning-making across cultures [28].

Thus, the ethno-cultural component plays a dual role: it reflects the cultural identity embedded in medical terminology and provides a pedagogical framework for developing culturally aware medical professionals. Recognizing semantic equivalence and cultural nuance ensures that medical communication remains both scientifically precise and humanly sensitive.

Conclusion. The conducted research has revealed that neurological terminology in English and Uzbek reflects not only scientific development but also the cultural and linguistic identity of each nation. The comparative analysis demonstrated that English medical terminology tends to maintain morphological transparency and semantic precision through the systematic use of Greek and Latin morphemes, whereas Uzbek terminology embodies a hybrid structure combining international borrowings with

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culturally rooted descriptive expressions. From a linguodidactic perspective, the study confirmed that effective acquisition of neurological terms requires more than simple memorization. It involves the integration of morphological awareness, contextual application, and cultural interpretation. Teaching methods that combine these three components enable learners to understand both the structural formation and the conceptual meaning of medical terms, improving their professional communication competence. The ethno-cultural analysis showed that the notion of *asab* in Uzbek, unlike its English equivalents such as *nerve* or *nervous system*, carries broader emotional and moral connotations. Recognizing such differences is crucial for translators, medical educators, and healthcare professionals who operate in bilingual or multicultural environments. Understanding the cultural semantics behind neurological terms allows for more accurate translation, teaching, and patient interaction. Overall, the findings highlight the need for a comprehensive, interdisciplinary approach to teaching medical terminology—one that combines linguistic analysis, cultural insight, and pedagogical innovation. Such an approach not only enhances learners' terminological competence but also promotes intercultural understanding and sensitivity in global medical communication.

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