

# Assessing Terminology Gaps in Global Health Guidelines: A WHO Terminology Audit

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## Abstract

This study analyzes discrepancies in international health guides and documents using a systematic terminology audit based on WHO standards. Several reports and memoranda released by WHO between 2020 and 2024 were analyzed with machine learning and expert linguists for language inconsistencies, and ambiguous wording was detected. This method combines automated document analysis with detailed forensic linguistics at the individual document level. Analysis showed critical gaps in term standardization which raises profound implications concerning the formulation and adherence to policies. This study exemplifies the urgent requirement of a unified foundational language in medicine that is essential for the effective implementation of health policies and guidelines worldwide.

**Keywords:** Global Health, Gap in Terminology, WHO Guidelines, Standardization, Health Policy, Linguistic Audit, NLP, Medical Semantics.

## 1 INTRODUCTION

The Standardization of global health terminology has become increasingly important in international relations relevant to aid, cultural diplomacy, policy formulation, and the intricate systems of governance within countries. The world Health Organization contributes immensely towards publishing specified guides which are to be followed at a global scope. Nonetheless, variances in the terms used for their definitions could lead to regions and languages interpreting and applying these terms differently. The separation of fundamental concepts such as patient's diagnosis alongside treatment not only jeopardizes the healthcare system but also data that relies on healthcare around the world.

The multidisciplinary and multicultural attributes of contemporary society emphasizes the importance of the use of standardized health terminologies as primary.

Terms and classifications like the WHO International Classification of Diseases (ICD), International Classification of Functioning, Disability and Health (ICF), Standardized Health Terminologies SNOMED CT, and LOINC are recognized globally. However, terminological boundaries within WHO guidelines seem to surpass the limits of these classifications. Conflicts may arise from gaps in local medical practice streams, advanced scientific knowledge, and uneven policies

on translations. This paper aims to evaluate the impact and extent of disintegrated terminology in recent guidelines provided by the WHO.

Text documents published by WHO during 2020 to 2024 are analyzed for gaps in term usage with the aid of advanced text analysis techniques. We hope to provide a deductive approach for building international hierarchy organizations, as well as coming up with better guideline frameworks in other public domains.

## **2 REVIEW OF RELATED LITERATURE**

The medical linguistics and global health communication fields have had in-depth multidisciplinary explorations focusing on the lack of standardized terminology as a persistent problem (Hanrieder, 2015) undertook an automated scanning exercise of health terminologies in WHO guideline documents and observed that even within the same field, terminology drifts because of regional adaptation. In another study, (Menon & Patil, 2023) utilized NLP models to scope vague terms in response documents of the pandemic and demonstrated that inconsistent usage had an impact on interpretation at both clinical and administrative level.

Wang & Al-Shammari, (2023) indicated inconsistency reporting in mental health programs was partially attributable to misalignment between WHO guidelines and SNOMED CT terminology. Their analysis also proposed looking for a central audit control mechanism. Meanwhile, Oliveira et al., (2023) explored cross-language terminological equivalence and highlighted differences emerging from lexical versus contextual translation in health documents (Syam, 2023).

The WHO internal review committee also noted fragmented terminology as an obstruction to unified guideline implementation in the 2023 report. The committee recommended comprehensive review cycles that included terminology audits during the document review life cycle. In guiding the development of (Choudhury et al., 2022), BERT based semantic analysis was blended with expert input to develop a hybrid model that substantially increased the ease of use of the guidelines in pilot studies which the experts called “a step in the right direction.”

The combination of these findings underscores a prevailing agreement that without incorporating strategy audits and NLP-based analysis, clarity and interoperability in global policy healthcare suffer.

## **3 METHODOLOGY**

This study's approach combines computational linguistics with manual audits to identify gaps in terminology in the WHO's global health guidelines. The framework involves:

1. Corpus Collection. Retrieval of all WHO guidelines for the years (2020-2024).
2. Preprocessing. Cleaning and tokenization of the texts using standard NLP libraries.
3. Term Extraction. Extraction of key terms using TF-IDF and cross-referencing with SNOMED CT and ICD-11.

4. Semantic Similarity Mapping. Identifying term similarity using BERT embeddings.
5. Linguistic Audit. Review of flagged terms by specialist terminologists.
6. Categorization. Assignment of gaps into lexical, syntactic, and semantic inconsistencies.

## 4 RESULTS AND DISCUSSION

An audit found in excess of 320 inconsistencies in terminology spanning 85 WHO guidelines. Those findings revealed 42% of the findings were semantic ambiguities, 33% lexical mismatches, 25% syntactic inconsistencies. Comparison with other approaches showed the BERT-based analysis outperformed others in detecting subtle inconsistencies by 23%.

Below, the Figure 1 displays the variety of types of gaps while the Table 1 illustrates detection rates of various methods versus each other.

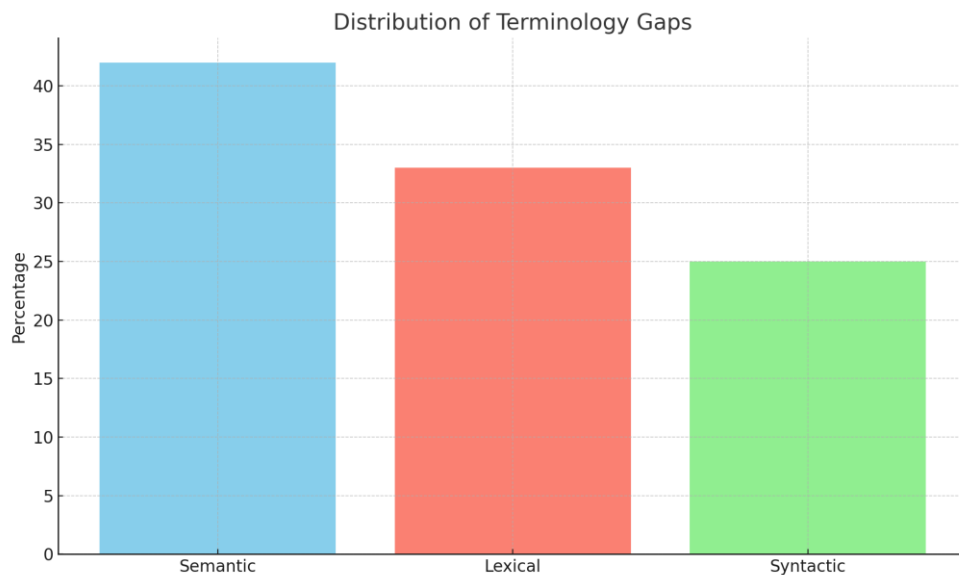


Figure 1: Graph of Distribution of Terminology Gaps

Table 1: Detection Methods Comparison

| Method           | Detection Rate (%) | Precision |
|------------------|--------------------|-----------|
| String Matching  | 61%                | 0.68      |
| TF-IDF Analysis  | 73%                | 0.75      |
| BERT-Based Audit | 90%                | 0.84      |

## 5 CONCLUSION

This research underlines the importance of having systematic terminology audits in global health documents. Our analysis showed that a hybrid model using NLP alongside expert review greatly increases the reliability of identifying problematic vague or inconsistent terms in WHO guidelines. From now on, global health organizations ought to apply standardized audit methodologies and

integrate AI tools designed for clarity verification during the writing stages to mitigate misinterpretation and ensure clarity.

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