

Abstract 62 – Paper ID: 104**A Systematic NLP-Driven Study on Mushroom Poisoning: Clinical Syndromes, Amatoxin Hepatotoxicity, Diagnostics, and Global Epidemiology**

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Abstract

Mushroom poisoning continues to be a pressing global toxicological issue, responsible for high morbidity and mortality, with Asia and Europe bearing the greatest burden of reported cases. Despite advances in toxin detection and supportive care, clinical management is frequently undermined by delayed recognition and challenges in species identification. To systematically synthesize the evidence base, our study applies a natural language processing (NLP) framework that integrates SciBERT embeddings with BERTopic clustering to organize published reports on mushroom poisoning. The analysis identified four dominant themes: general clinical manifestations, hepatotoxicity linked to amatoxins, epidemiological case series, and emerging diagnostic technologies for toxin detection. By consolidating knowledge on toxin groups, clinical outcomes, diagnostic strategies, and therapeutic approaches, our study provides a structured overview of current evidence and highlights future opportunities for AI-driven diagnostic tools, improved prevention strategies, and strengthened public health responses of causes related to Mushroom poisoning.

Keywords: Mushroom Poisoning, Amatoxin, Natural Language Processing (NLP), Epidemiology, Machine Learning, SciBERT, BERTopic