

Bibliometric Analysis of Mushroom Poisoning: From Diversity to Clinical Management

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ABSTRACT: The earliest publication related to mushroom poisoning dates back to 1837. To date, bibliometric analysis related to the field of mushroom poisoning has not been published. This study aimed to assess the most significant publications in this field as well as the associated trends and important drivers in the research related to mushroom poisoning. The Scopus database was screened to identify relevant publications on mushroom poisoning. A total of 985 publications with a minimum of five citations were identified and analyzed. Pearson's correlation demonstrated an insignificant weak negative correlation (Pearson's correlation of -0.020 , $P > 0.01$) between the number of years since publication and the number of citation counts of a paper. Bradford's law of scattering revealed that one-third of publications were published in 31 core journals, with *Clinical Toxicology* topping the list (41 papers). VOSviewer was used to generate a network visualization based on country. The United States was the largest contributor of publications on mushroom poisoning, contributing 19.6% of 985. China is an emerging leader in publications on mushroom poisoning research since 2011, with the most recent average publication year of 2011.18. A term map was also created to visualize the co-occurrence of key terms, whereby *Amanita phalloides*-related research appeared to be the most frequently published topic in this field. In conclusion, the results of this bibliometric study shed light on the status of mushroom poisoning research and can guide investigators on current research trends for high-impact knowledge contribution in the field.

KEY WORDS: bibliometric, Scopus, *Amanita phalloides*, amanitin, liver toxicity, silymarin, VOSviewer, mushrooms

I. INTRODUCTION

Mushroom poisoning, also referred to as mycetism, is a condition in which the toxin found in mushrooms is ingested.¹⁻³ An increasing trend in wild mushroom consumption has led to higher incidences of mushroom poisoning.⁴ A recent study reported that in Zhejiang Province of China alone, a total of 429 cases of wild mushroom poisoning were reported from 2016 to 2018.⁵ Among them, there were 2 deaths and 84 hospitalizations.⁵ Some notable toxic mushrooms include *Amanita phalloides*, *Coprinus* spp. (e.g., *C. atramentarius*), *Lepiota brunneoincarnata*, *Trogia venenata*, and *Clitocybe* spp. (e.g., *C. clavipes*).⁶ Due to the similar morphological features between some edible and poisonous mushrooms, difficulty in accurately identifying mushroom species has contributed to $> 95\%$ of the reported mushroom poisoning cases.⁷ In Malaysia and other countries, *Chlorophyllum molybdites*, a type of toxic mushroom that causes acute gastroenteritis, is often misidentified as the look-alike edible *Termitomyces* sp. or *Macrolepiota procera*.^{8,9}

Currently, there is no single antidote available specifically for mushroom poisoning, probably due to the various types of causative toxins present in different types of mushrooms. In addition, clinical management of mushroom poisoning is largely supportive, which includes fluid repletion and rehydration, initial gastrointestinal decontamination with oral activated charcoal, and hemoperfusion or hemodialysis to remove toxins from the body.¹⁰⁻¹³ Treatments that are specific to resolve the effects of toxins may also