Supporting Information

Removal of antibiotic resistant bacteria and antibiotic resistance genes: A bibliometric review

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Text S1 Data sources

The databases chosen for this study are Science Citation Index Expanded (SCIE) and Social Science Citation Index (SSCI), both of which are core databases from Web of Science and both of which provide powerful advanced search capabilities for precise searches based on authors, keywords, journals and citations. Thus, two databases were used as an advanced search method for this study. The search strategies are "TS=(antibiotic resistant bacteria) AND TS=(removal)" or "TS=(antibiotic resistance gene） AND TS=(removal)". The publication period was limited to 1998-01-01 to 2023-12-31, and 1488 and 2957 documents were searched, respectively, for a total of 3714 articles (Selected language is English and total number of articles in other languages is 188). The Citespace software filtered the obtained documents by removing irrelevant entries such as conference papers, newspapers, and journals, and selected "article" or "review article" to obtain the total number of valid articles. 3714 articles were obtained.

Text S2 Research Methodology

This study made a statistical and quantitative analysis of the literature information retrieved, Using CiteSpace software (5.8.R3) for bibliometric analysis. CiteSpace excludes other types of articles by selecting articles of the "article" or "review article" type. In addition, CiteSpace used data normalization to remove duplicate articles from the retrieved literature (Chen, 2006). We summarized the basic information (i.e. number of papers, journal, country, keywords) obtained by CiteSpace using Microsoft Excel 2019. The aggregated data were visualized and

analyzed using VOSviewer (1.6.18) software to manually exclude keywords below the frequency of less than 5 occurrences and those that did not match the topic. R4.4.0 plots the temporal distribution bubbles of the proportion of high-frequency keywords of the ARB and ARGs types, where the annual number of publications was manually crawled through the WoS database. VOSviewer software completed the collaboration and keyword co-occurrence clustering analysis between different objects. The object collaboration graph consists of lines between nodes, each node represents an individual and the lines represent the relationship between different nodes. R4.4.0 software completed the time series data visualization, where the size of the bubbles represents the number of publications in a given time period, thus visualizing the degree of activity or intensity of the objects under study in different time periods. The keyword co-occurrence network reveals the focus of the research, and VOSviewer uses a probability-based data normalization approach to provide a variety of visualization views for journals, countries, keywords, etc., including the network view in this paper(Eck and Waltman, 2009). Temporal distribution bubble charts show keyword co-occurrence plots in the temporal view to understand the overall situation and dynamics of the field. **Fig.1** shows the standard flowchart for literature screening.

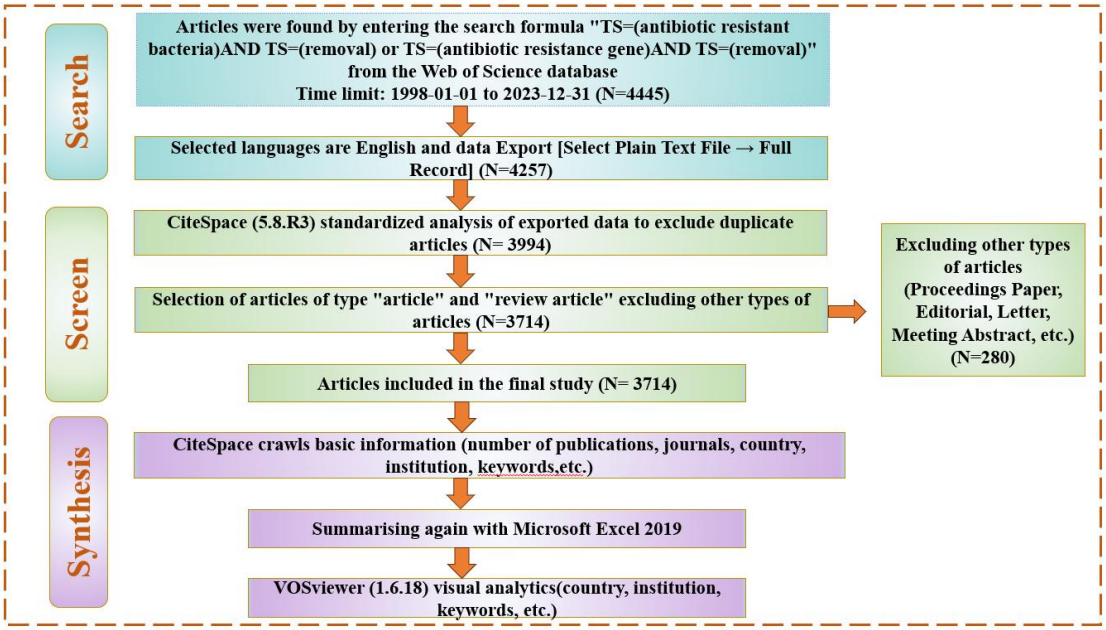

Fig.1. Flow chart of literature screening criteria

References

Chen C (2006). CiteSpace II: Detecting and Visualizing Emerging Trends and Transient Patterns in Scientific Literature. Journal of the American Society for Information Science and Technology, 57: (3)359–377

Eck NJPV ,Waltman LR (2009). VOSviewer: A Computer Program for Bibliometric Mapping. ERIM Report Series Research in Management, 84: (2)523–538