

Reviewer A

The paper titled “The quality of life of patients with chronic obstructive pulmonary disease: a bibliometric analysis” is interesting. Greater emphasis should be placed on exploring effective treatment methods for COPD. It is recommended that research teams from Spain, China, and other countries enhance their international collaboration and that a greater focus be placed on motor function and QOL. Additionally, efforts should be made to actively explore featured treatment measures, such as integrating traditional Chinese and Western medicine and family rehabilitation. However, there are several minor issues that if addressed would significantly improve the manuscript.

1) Figures 3 and 8 are not clear enough. It is recommended to provide clearer figures again.

Reply 1: We appreciate your thoughtful comment regarding these figures. We have made changes to Figures 3 and 8.

Changes in the text: we upload the new figures.

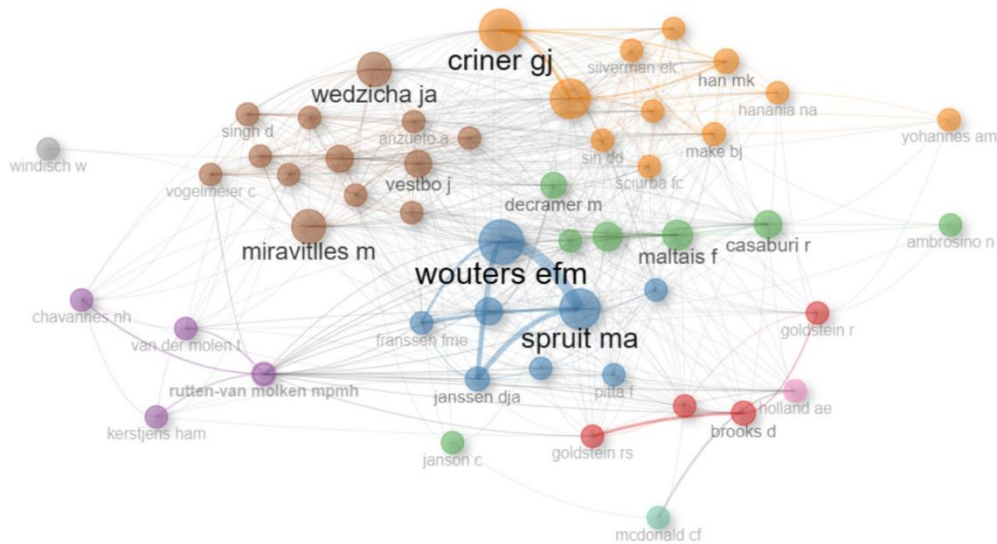


Figure 3-revised

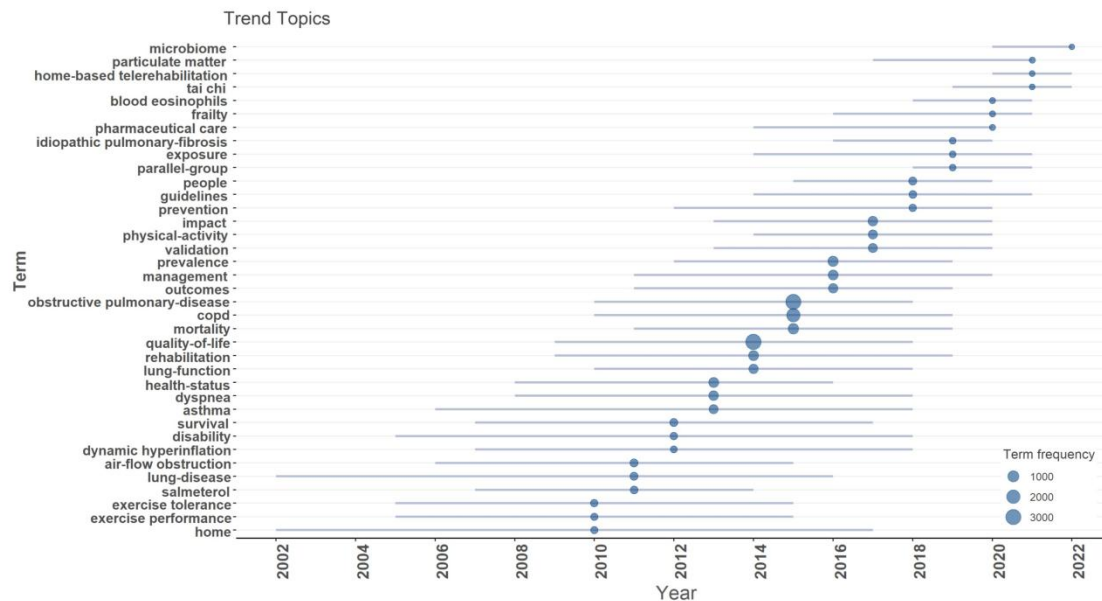


Figure 8-revised

2) There are many databases. Why did the author only select Web of Science Core Collection database in this study for searching? Please explain the reason.

Reply 2: Thank you for your in-depth question. The Web of Science database is an internationally recognized and authoritative comprehensive academic information resource database, which is considered to be the most important and frequently used database in most scientific research fields, so we chose this database.

Changes in the text: We added the sentences (Page 3, line132-134)“Web of Science (WOS) is one of the most reliable sources of comprehensive scholarly databases. It is considered the most extensive and important bibliometric analysis database in most fields(13,14)”.

3) This study is based on the analysis and summary of the literatures. It is suggested to add clinical experimental research, which may be more meaningful.

Reply 3: As you have constructively commented, this study is mainly to sort out relevant literature and predict research directions, which will lay the foundation for subsequent clinical research.

Changes in the text: We added the sentences (Page 2, line88-90)“actively explore characteristic clinical featured treatment measures such as Tai Chi and family rehabilitation, carry out clinical research on the integration of traditional Chinese and Western medicine and self-management”. And the sentences (Page 8, line363-367)“This bibliometric analysis underscores the growing significance of QOL research in the field of COPD. The insights gained can inform clinicians, researchers, and policymakers in prioritizing areas for future investigation, fostering international collaborations, and developing comprehensive, patient-centred strategies to enhance the well-being of individuals with this chronic respiratory condition”.

4) Suggest increasing attention to the psychological changes caused by COPD, the impact of COPD on relatives and caregivers, and the economic and social burden of COPD on the health system.

Reply 4: Thank you for your meticulous and detailed feedback, which we have revised the manuscript accordingly.

Changes in the text: Page 4 line 354-360: In addition, the anticipation of dyspnea itself can have a significant impact on the patient's mood and behaviour (25), and psychological distress is prevalent in patients with COPD and is associated with a more severe course of the disease, which can also increase the burden on patients, caregivers, and the healthcare system when psychological problems are not treated(26). Therefore, more attention needs to be paid to the psychological changes caused by COPD and the impact on relatives and caregivers in the process of family rehabilitation and self-management.

5) The introduction part of this paper is not comprehensive enough, and the similar papers have not been cited, such as “Research progress of mitochondria in chronic obstructive pulmonary disease: a bibliometric analysis based on the Web of Science Core Collection, PMID: 38410585”. It is recommended to quote the article.

Reply 5: The article you suggested was very beneficial to our manuscript and we have incorporated it into the citation and supplemented several others.

Changes in the text: Page 3 Line 146-147: There are many bibliometric studies on COPD, including mitochondria and the progress of COPD research(15).

6) How to help patients achieve symptom self-management and reduce the economic burden of COPD on healthcare? Suggest adding relevant content.

Reply 6: This is a thought-provoking topic that is very beneficial to people's livelihoods. We revise the manuscript based on this as follows.

Changes in the text: Page 7 line 347-353: “The management of long-term health problems such as COPD has added a heavy burden to medical services, Self-management is underutilized in the current clinical care of COPD(24). Through the analysis of key research topics, it can be seen that home rehabilitation, self-management, and Tai Chi exercise are better choices for daily care of COPD, which can not only improve the quality of life of patients, reduce the economic and social burden of patients, but also reduce the pressure on the health system.”

Reviewer B

1) First, the abstract needs revisions. In the background the authors did not explain the potential clinical significance of this research focus. The methods need to describe the databases searched and the bibliometric indicators used in this study. The results need to report the article type of retrieved papers. The conclusion in the abstract and the main text was not supported by the findings from the bibliometric analysis. The authors need to reconsider and strictly make it according to their findings.

Reply 1: Thanks for your comments. We rewrote the abstract accordingly.

Changes in the text: Page 2 line 49-92:

Background: The quality of life (QOL) of patients with chronic obstructive pulmonary disease (COPD) is garnering increasing attention. However faced with thousands of the relevant clinical literature, it is becoming increasingly difficult for researchers and institutions to identify impactful research. Bibliometrics can help researchers quickly and methodically

analyze the impact and hot trends of clinical research, strengthen teamwork, and solve related challenges. Therefore, we used bibliometrics to analyze and visualize data on the QOL of patients with COPD over the past 31 years to understand the key authors, research areas, and future trends.

Methods: We searched the Web of Science Core Collection for literature published since the establishment of the database. Document types is Unlimited. The main subject terms used were "chronic obstructive pulmonary disease", "quality of life" and their Different combinations. Articles were selected and exported in plain text format along with citation information. Bibliometric analysis and data visualization were performed using the R package "bibliometrix" and by incorporating Statistical indicators such as the number of publications, citations and outputs of core authors, author collaborations, major journals, major research countries and collaborations, and key research themes.

Results: The bibliometric analysis included 9,219 articles. All publications were published between 1992 and 2022, and the number of published articles increased consistently each year over the past decade, with periodic fluctuations. The European Respiratory Journal and the International Journal of Chronic Obstructive Pulmonary Disease emerged as the most frequently cited journals within this domain. Key authors contributing to this field include Wedzicha JA, Jones PW, Singh D, Holland AE, and Wouters EFM. The United States and the United Kingdom exhibited a high volume of publications, high citation rates, and relatively intense international collaboration in related areas, followed by China, Spain, Canada, and Australia in these metrics. Notably, prominent topics within this field included emphysema, pulmonary rehabilitation, dyspnea, acute exacerbation, living status, and mortality, among others. Future research in this field will focus on microorganisms, particulate matter, family rehabilitation, and Tai Chi.

Conclusions: This bibliometric analysis highlights the growing importance of QOL research in the field of COPD, which can inform clinicians, researchers, and policymakers to prioritize areas for future investigation in order to develop comprehensive, patient-centered strategies. At the same time, it is suggested that researchers should pay more attention to the core authors, strengthen international collaboration and team exchanges, actively explore characteristic clinical featured treatment measures such as Tai Chi and family rehabilitation, carry out clinical research on the integration of traditional Chinese and Western medicine and self-management, focus more on the quality of life, mental health and economic and social burden of patients, and ultimately enhance the well-being of individuals with chronic respiratory diseases.

2) Second, in the introduction of the main text, the focus of this study is a bibliometric analysis on quality of life in COPD but the authors did not analyze why bibliometric analysis is clinically needed, what the questions to be answered by the bibliometric analysis, what is the strength of bibliometric analysis relative to literature review, and what the clinical significance of this focus is. It is not adequate to describe the significance as "yield deeper insights into research themes, active researchers, and research institutions and could also guide practitioners and patients in making informed treatment decisions".

I do not agree and these statements are weak, unclear and not convincing.

Reply 2: Thanks for you kind comment, We have rewrote the introduction part accordingly.

Changes in the text: Page 3 line 127-141: Bibliometrics is a widely used method for analyzing knowledge carriers and evaluating scientific research quantitatively and qualitatively. Compared to a literature review, based on a large number of literature and targeted analysis, bibliometrics makes it possible to quickly identify the overview of specific research fields and development frontiers(11). With the advent of scientific databases such as Web of Science, literature research has become more accessible (12). Web of Science (WOS) is one of the most reliable sources of comprehensive scholarly databases. It is considered the most extensive and important bibliometric analysis database in most fields(13,14).

Clinical research is essential for the development of new medical treatments, diagnostic tools, and preventive measures. As the scientific literature continues to grow, it is becoming increasingly difficult for researchers and institutions to identify impactful research. Bibliometrics can help analyze the impact and hot trends of clinical research, strengthen teamwork, and gradually become one of the solutions to solve related challenges.

3) Third, in the methodology of the main text, the authors need specify the date of the literature search and provide detailed explanations on the indicators of bibliometric analysis.

Reply 3: We added the specify the date of the literature search and provided detailed explanations on the indicators of bibliometric analysis in the method section accordingly.

Changes in the text: Page 4 Line 165: The data retrieval took place on December 25, 2022.

Page 4 Line 173-175: Statistical indicators include the number of publications, citations and outputs of core authors, author collaborations, major journals, major research countries and collaborations, and key research themes.

4) Fourth, the discussion of the findings is also weak and inadequate. The authors need to analyze the potential reasons for the trends in the publications of QOL in COPD and how these findings could facilitate the clinical management of COPD. The conclusion is problematic since many statements are not supported by the findings.

Reply 4: We rewrote the discussion and conclusion sections. We hope the revised manuscript could be more clearly and the new discussion could support the conclusion.

Changes in the text: Page 7-8 Line 308-372:

This bibliometric analysis revealed several key insights into the research landscape on the QOL of patients with COPD over the past 31 years. From 1992 to 2022, research attention into the QOL of patients with COPD continuously increased, as did the number of publications, indicating a growing clinical importance placed on improving the QOL of COPD patients. This aligns with the recognition that QOL is a critical measure of the effectiveness of pulmonary rehabilitation and other COPD management strategies. As COPD is a debilitating and progressive disease, the sustained research interest underscores the need for more effective treatments to alleviate the symptoms and burden experienced by patients.

An analysis of the journals revealed that the European Respiratory Journal and the International Journal of Chronic Obstructive Pulmonary Disease had an exceptionally high number of publications and exhibited higher growth rates than the other journals, making them the top journals in this field. Their increasing publication volumes over the past decade likely

reflect the field's expansion and the journals' status as preferred venues for disseminating cutting-edge findings.

The identification of key authors, such as Wedzocha JA, Jones PW, Singh D, Holland AE, and Wouters EFM, provides insights into the thought leaders driving research progress in this domain. Wedzocha JA and Jones PW, who have a long publication history and an extensive number of citations, were frequently cited by senior researchers. Moreover, Singh D and Holland AE began their research later but have garnered a significant number of citations and contributed substantially to clinical research, emerging as rising stars in the field. Network centrality analysis indicated Wouters EFM to be a core member of the industry collaboration network.

The geographic distribution analysis revealed the dominance of developed nations, particularly the United States and the United Kingdom, in terms of publication volume, citation rates, and international collaboration. This likely reflects these countries' more significant research funding, infrastructure, and clinical expertise. Additionally, the rapid growth in publication output from China and other countries suggests an increasing global recognition of the importance of COPD QoL research. Strengthening international collaborations and knowledge exchange could further accelerate progress in this field.

The thematic analysis highlighted several areas of focus, including pulmonary rehabilitation, dyspnea, mortality, health-related QoL, and emphysema. These align with the clinical priorities for COPD management, where improving patients' symptoms, functional status, and overall well-being are paramount. Emerging topics, such as microbiology, particulate matter, home-based rehabilitation, and Tai Chi, suggest potential future research directions that could yield novel therapeutic approaches.

The management of long-term health problems such as COPD has added a heavy burden to medical services. Self-management is underutilized in the current clinical care of COPD(24). Through the analysis of key research topics, it can be seen that home rehabilitation, self-management, and Tai Chi exercise are better choices for daily care of COPD, which can not only improve the quality of life of patients, reduce the economic and social burden of patients, but also reduce the pressure on the health system.

In addition, the anticipation of dyspnea itself can have a significant impact on the patient's mood and behaviour (25), and psychological distress is prevalent in patients with COPD and is associated with a more severe course of the disease, which can also increase the burden on patients, caregivers, and the healthcare system when psychological problems are not treated(26). Therefore, more attention needs to be paid to the psychological changes caused by COPD and the impact on relatives and caregivers in the process of family rehabilitation and self-management.

#Conclusions

This bibliometric analysis highlights the growing importance of QOL research in the field of COPD, which can inform clinicians, researchers, and policymakers to prioritize areas for future investigation in order to develop comprehensive, patient-centered strategies. At the same time, it is suggested that researchers should pay more attention to the core authors, strengthen international collaboration and team exchanges, actively explore characteristic clinical featured treatment measures such as Tai Chi and family rehabilitation, carry out clinical research on the integration of traditional Chinese and Western medicine and self-management,

focus more on the quality of life, mental health and economic and social burden of patients, and ultimately enhance the well-being of individuals with chronic respiratory diseases.

- 5) Finally, please cite several related papers: 1. Lee B, Oh YM, Lee SW, Lee SD, Lee JS. Value of cardiopulmonary exercise testing in the assessment of symptoms and quality of life in Asian patients with chronic obstructive pulmonary disease. *J Thorac Dis* 2023;15(7):3662-3672. doi: 10.21037/jtd-23-185. 2. Li HM, Zhong BL. Quality of life among college students and its associated factors: a narrative review. *AME Med J* 2022;7:38.

Reply 5: We have added the references accordingly.

Changes in the text: Reference 2 and 5.

Page 2 Line 103-104: The natural course of COPD is characterized by symptom exacerbation and quality-of-life reduction(2)

Page 3 Line 114-115: QOL is a comprehensive indicator for assessing the health and well-being of individuals, which is affected by a variety of factors(5)