

## Questions to the Article: A Global Overview of COVID-19 Research in the Pediatric Field

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# Questions to the Article: A Global Overview of COVID-19 Research in the Pediatric Field

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## Abstract

The article, published on 23 July 2021, is well-written and of interest, but remains several questions that are required for clarifications, such as (1) the static choropleth map of collaboration analysis between countries should be dynamically visualized and highlighted by top three countries on their publications and author collaboration characteristics; (2) the research achievements in authors, institutes, and countries should be quantified by author-weighted scheme considering author order in article bylines; and (3) keyword analysis was too simple to identify the difference in article types between countries. We downloaded 2,268 abstracts from the Pubmed database with a search string of (COVID-19[MeSH Major Topic]) AND (pediatrics[Affiliation]), similar to the mentioned study, and displayed (1) choropleth maps highlighted by the most productive and highly author-collaborated countries, and (2) forest plot to identify differences in article types between two countries. The medical subject headings (MeSH terms) were used to denote the article types in articles. We observed that (1) three top productive countries were the United States, Italy, and India; (2) three top countries collaborated the authors affiliated with the US were Canada, the United Kingdom, and Italy; and (3) only the MeSH term of epidemiology presents the difference in article types between the US and India when the top 10 most frequently occurred MeSH terms were compared. We produced the dashboard-type visualizations to provide valuable information for readers. The novel visual representations make data clear with a better understanding of bibliographic analysis. The methods used in this study are recommended for future studies, not just limited to the field of COVID-19 research.

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## Original Manuscript

Letter to Editors:

## **Questions to the Article: A Global Overview of COVID-19 Research in the Pediatric Field**

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## **Abstract**

The article, published on 23 July 2021, is well-written and of interest, but remains several questions that are required for clarifications, such as (1) the static choropleth map of collaboration analysis between countries should be dynamically visualized and highlighted by top three countries on their publications and author collaboration characteristics; (2) the research achievements in authors, institutes, and countries should be quantified by author-weighted scheme considering author order in article bylines; and (3) keyword analysis was too simple to identify the difference in article

types between countries. We downloaded 2,268 abstracts from the Pubmed database with a search string of (COVID-19[MeSH Major Topic]) AND (pediatrics[Affiliation]), similar to the mentioned study, and displayed (1) choropleth maps highlighted by the most productive and highly author-collaborated countries, and (2) forest plot to identify differences in article types between two countries. The medical subject headings (MeSH terms) were used to denote the article types in articles. We observed that (1) three top productive countries were the United States, Italy, and India; (2) three top countries collaborated the authors affiliated with the US were Canada, the United Kingdom, and Italy; and (3) only the MeSH term of epidemiology presents the difference in article types between the US and India when the top 10 most frequently occurred MeSH terms were compared. We produced the dashboard-type visualizations to provide valuable information for readers. The novel visual representations make data clear with a better understanding of bibliographic analysis. The methods used in this study are recommended for future studies, not just limited to the field of COVID-19 research.

**Keywords:** dashboard; COVID-19; choropleth map; forest plot; pediatrics; author-weighted scheme

## Introduction

We read with great interest the study by Monzani et al. on A Global Overview of COVID-19 Research in the Pediatric Field[1]. Nonetheless, three major concerns were raised, such as (1) the static choropleth map could not highlight the top three countries on their publications and author collaboration characteristics; (2) the research achievements in authors, institutes, and countries have not been quantified using author-weighted scheme (AWS) for considering author credits by order in article bylines; and (3) keyword analysis was too simple to identify the difference in article types between countries. We thus aimed to demonstrate the visualizations of the three topics and issues for better improving the contents of the COVID-19 research in the pediatric field.

## Methods

Similar to the criteria in the study[1], we downloaded 2,268 abstracts from the Pubmed database with a search string of (COVID-19[MeSH Major Topic]) AND (pediatrics[Affiliation]). The AWS[3,4] was applied to quantify authors' contributions to the articles. The first author earns the most credit (about 63%), followed by the corresponding author (assumed as the last author to earn about 12% credit). Other middle authors share the remaining portions in descending order. As such, fairly shared contributions in articles were designed for authors, institutes, and countries of origin. Choropleth maps[5] were applied to highlight the most productive and highly author-collaborated countries. The forest plot [6] was used to identify differences in article types between the two countries. The medical subject headings(MeSH terms) [7] were in use to denote the article types in articles.

## Results

We observed that (1) three top productive countries were the United States, Italy, and India(Figure 1), different from the study[1] reporting China in the second placement; (2) three top countries collaborated the authors affiliated with the US were Canada, the United Kingdom, and Italy(Figure 2), different from the study[1] merely elucidating that China and the US were the leaders in COVID-19 research in cooperation with other countries (each node represents a country, node size corresponds to publication number, connecting lines represents country cooperation, and line thickness indicates collaboration frequencies), but not obvious line size in the static diagram; and (3) only the MeSH term of epidemiology presents the difference in article types between the US and India when the top 10 most frequently occurred MeSH terms were applied in comparison(Figure 3). The dashboard-type visualizations were never seen in the study [1].

Readers are invited to click on the links[8-10] to manipulate the dashboards by using the zoom-in and zoom-out functions on their own.

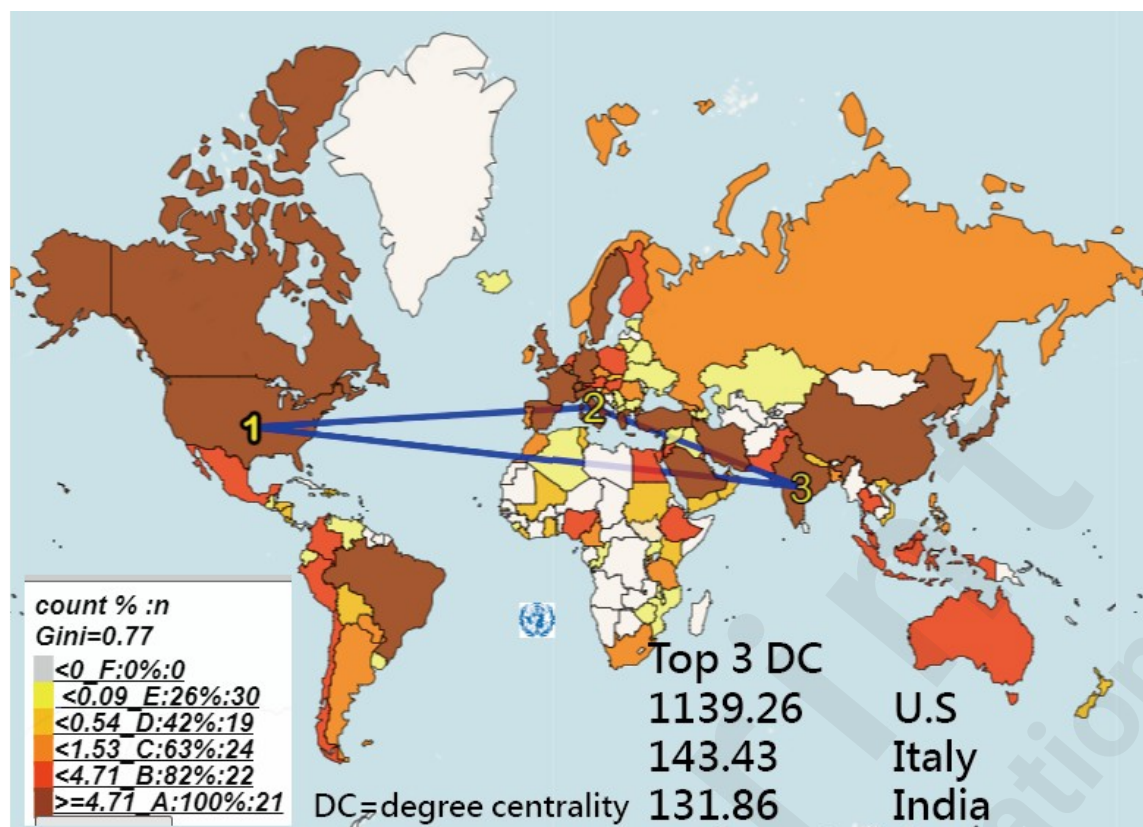


Figure 1 Comparison of research achievements in countries

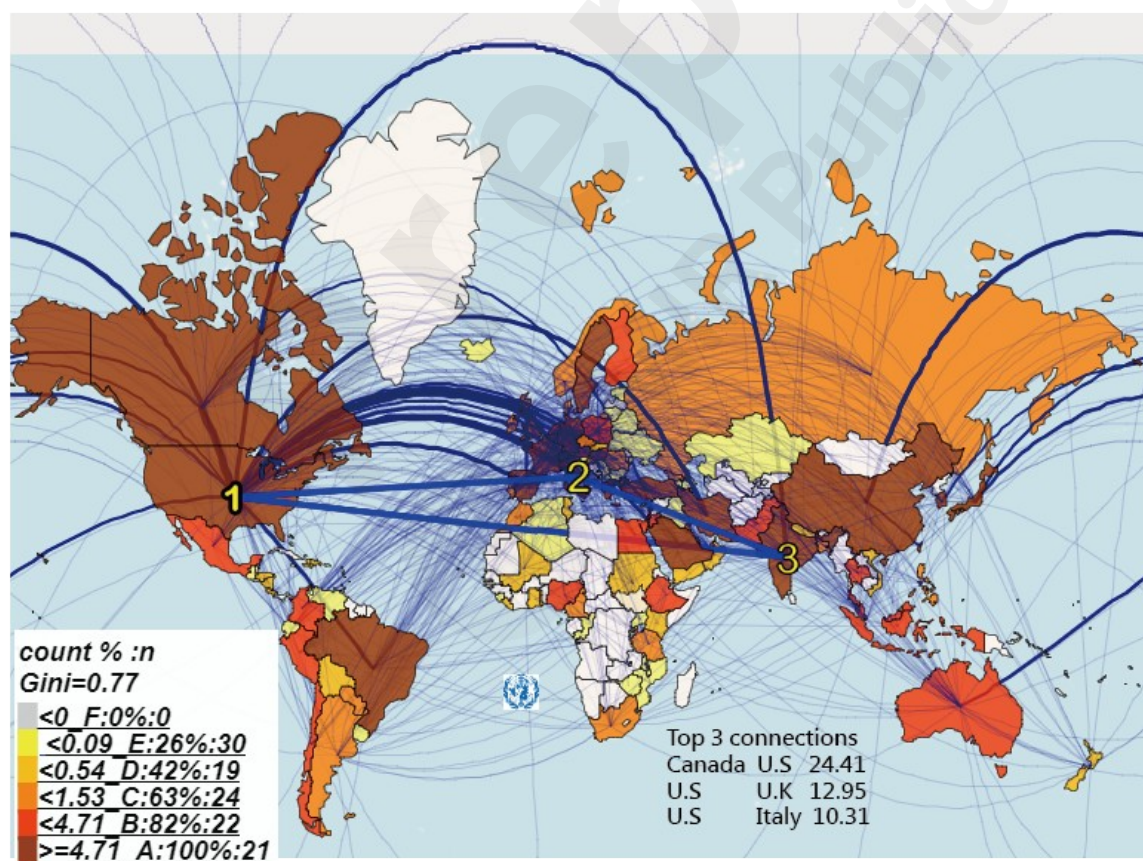


Figure 2 Comparison of research collaborations in countries



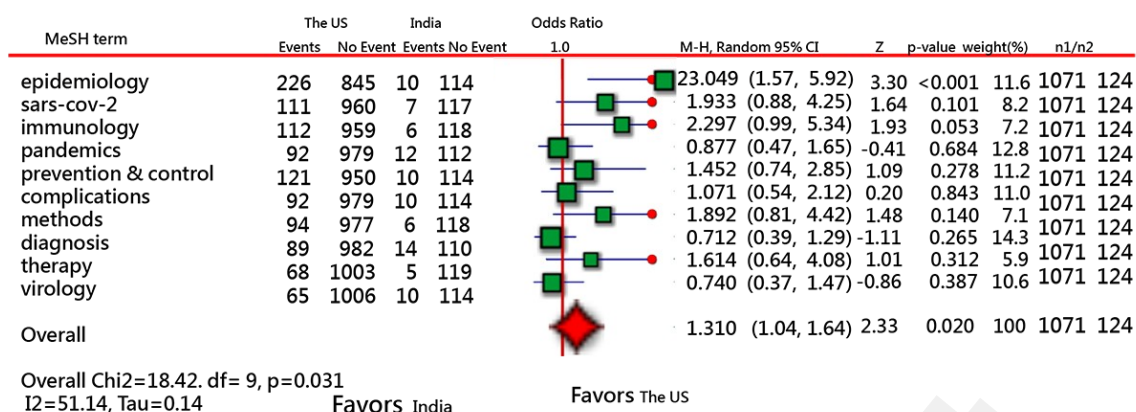


Figure 3 Comparison of article topics between The US and India

## Conclusion

We produced the dashboard-type visualizations and provided valuable information for readers with a quick glance at the study results. The modern visual representations make data clear with a better understanding of bibliographic analysis. The methods used in this study are recommended for future studies, not just limited to the field of COVID-19 research.

## Declarations

## Ethics approval and consent to participate

Not applicable.

All data were downloaded from PubMed.

## Consent to publish

Not applicable.

## Availability of data and materials

All data used in this study are available (Chien, 2021a).

## Competing interests

The authors declare that they have no competing interests.

## Funding

There are no sources of funding to be declared.

## Authors' Contributions

JCC developed the study concept and design. WC analyzed and interpreted the data. SC monitored the process of this study and helped in responding to the reviewers' advice and comments. TWC drafted the manuscript, and all authors provided critical revisions for important intellectual content. The study was supervised by TWC. All authors read and approved the final manuscript.

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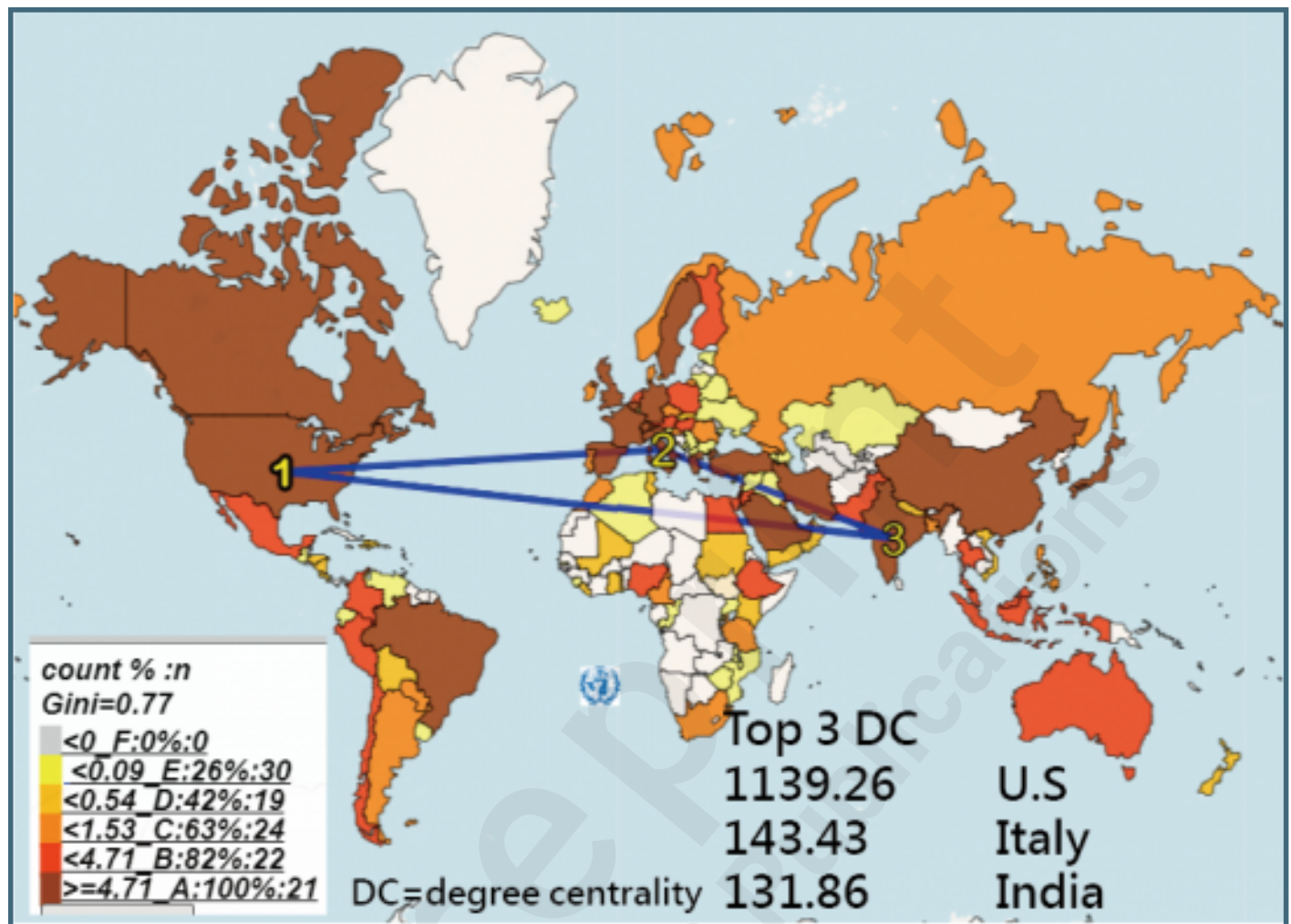
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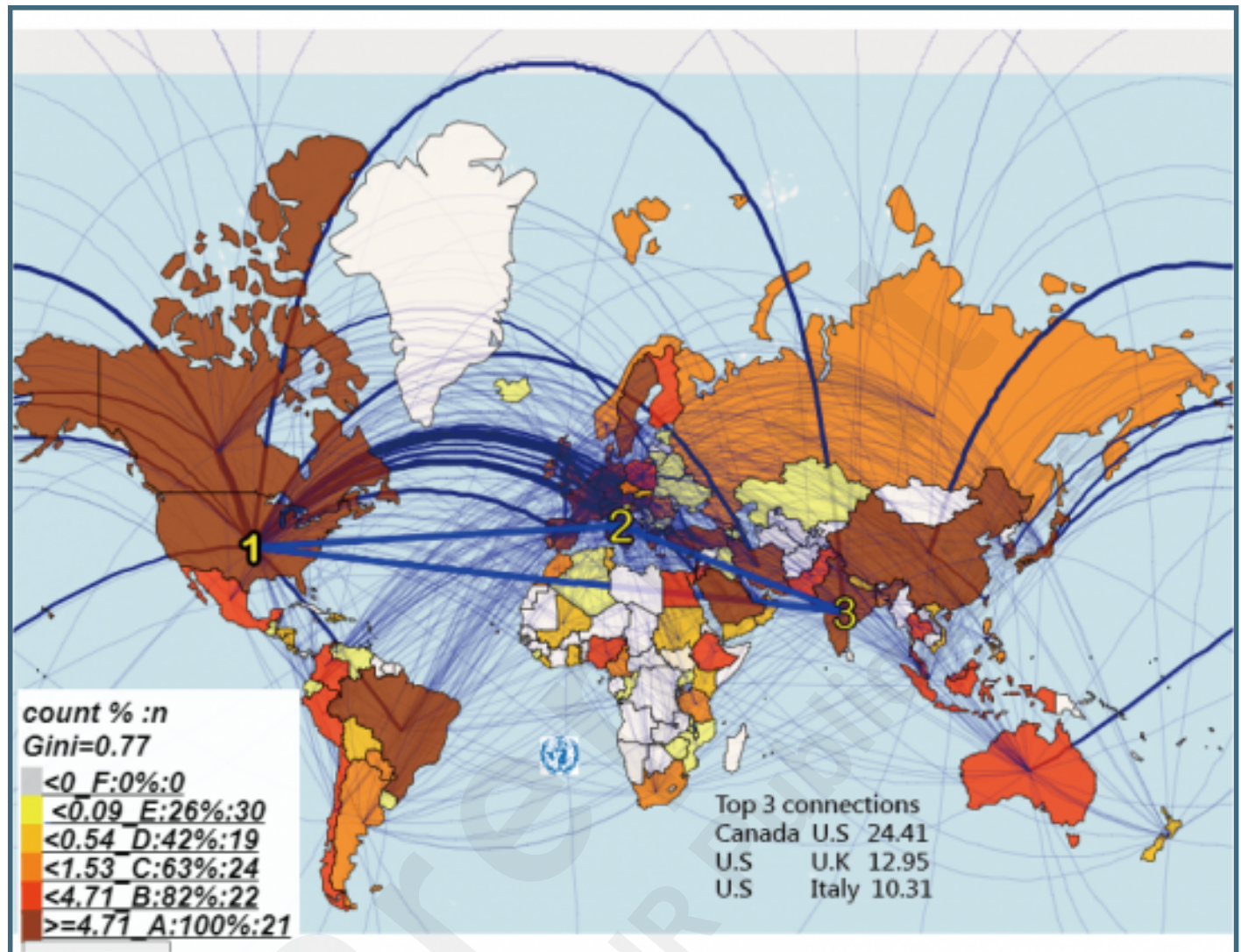
## Supplementary Files

## Figures

Comparison of research achievements in countries.



Comparison of research collaborations in countries.



Comparison of article topics between The US and India.

