

Mapping research Trend in Sick Building Syndrome: A comprehensive review analysis

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Biography

Upama Ghimire's journey demonstrates a strong commitment to education and professional development in the health sector. She currently serves as a research associate at the Nepal Health Research Council, the nation's organization for scientific health research. Upama's educational path includes completing her secondary education in Nepal, earning a Post B.Sc. Nursing in India in 2015, and obtaining a Master's degree in Global Health from Southeast University in China in 2020.

With over eight years of experience in primary health, nutrition, and maternal and child health, she has progressed from volunteer work to a leadership role, dedicated to improving public health and making a meaningful impact in her community.



Introduction

From last 20 years, there is a growing concern of people health in issues with an increasing number of complaint about building-related discomfort and its effect towards health.

Key studies identified potential causes, such as inadequate ventilation, the presence of indoor air pollutants, and thermal discomfort.

Cont.

As awareness of SBS has grown, efforts to establish guidelines and best practices for building design, operation, and maintenance have been developed.

Further investigations have focused on the psychological and social factors that may contribute to SBS, highlighting the importance of occupants' perceptions and experiences

Although there is an ongoing research productivity . Study identified no bibliometric studies have been carried out on SBS till the date. -

Thus, the current study aims to analyze the annual trends of worldwide publications on SBS during the period 1975 up to March 2nd, 2020 using bibliometric analysis method from documents indexed in Scopus database.

Methods

Scopus databases

Search: 1975 until 2nd march 2020

Keywords: Title (sick and building and syndrome), and (building and syndrome);

Language: English

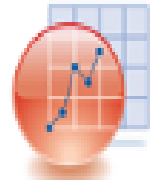
Documents: Full research, review, book, conference paper, editorial and letter to editor)

Data Extraction

SBS related publications were extracted the by using the Scopus databases. Data was downloaded as Bib TeX. File format and Excel 2019for further analysis.

Overall all data was extracted within single day March 2, 2020 to avoid daily updating bias since the database is still open, and the average of citation can increase per day.2.4.

Statistical methods:



ORIGIN[®] 9.1
Data Analysis and Graphing Software



**Meta data analysed using: using Excel 2019
R (Biblioshiny) and VOSviewer**



VOSviewer
Visualizing scientific landscapes

Statistical Methods

Qualitative data were analyzed using Excel 2019, OriginPro 2018, to analyze the distribution of the most productive journals, annual trend, productive countries, institutions, and prolific authors.

Furthermore, A statistical software package called (Biblioshiny) and VOSviewer were used for data visualization.

Results:

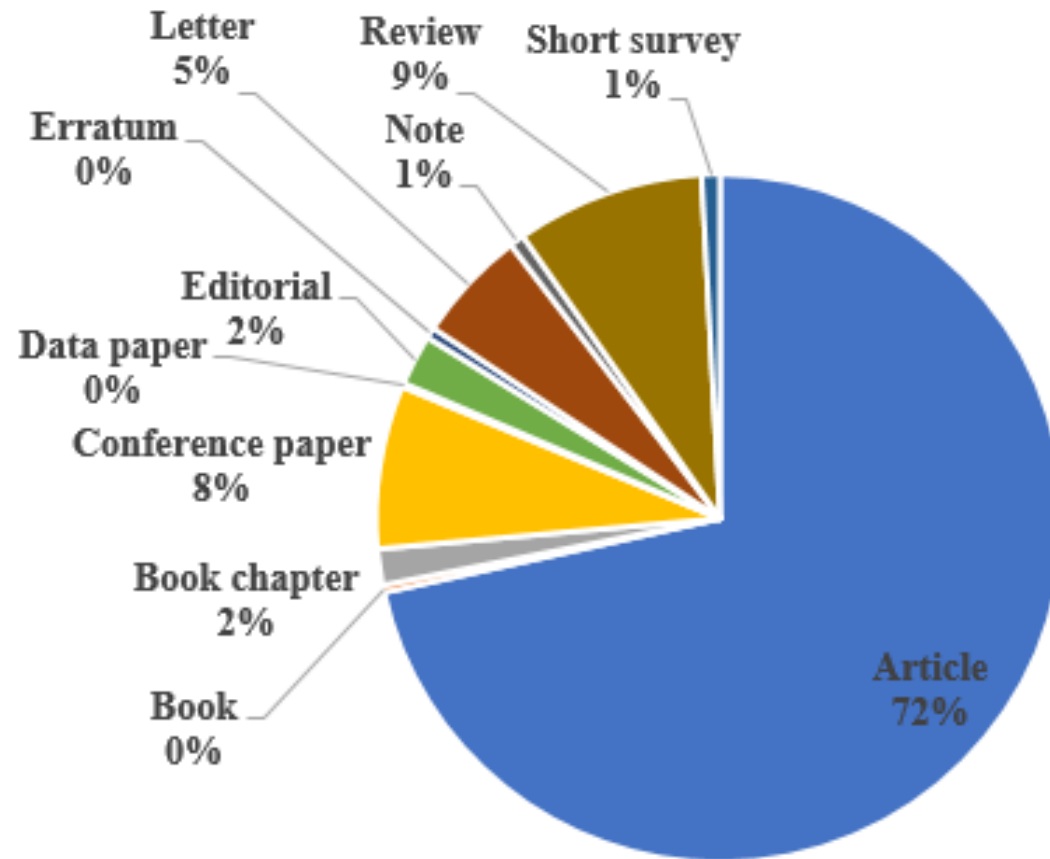


Figure 1. Document types of scientific papers on SBS

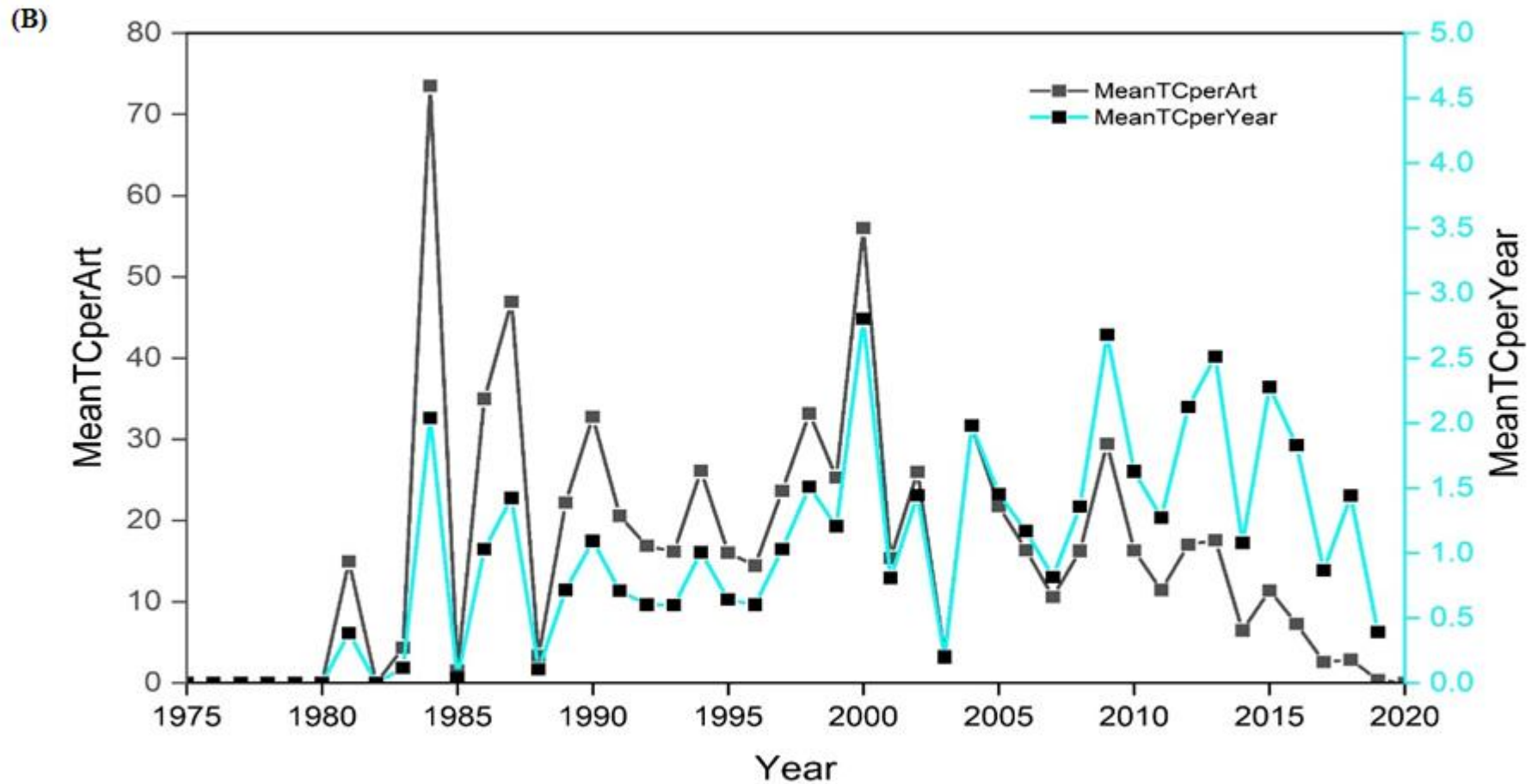


Figure 2. Annual growth of publication per year (A) and average mean of total Citation Per Article (MeanTCper Art) and Mean of Total Citation per Year (MeanTCperYear) of SBS publications during 1975 to 2020

Result Cont.

Table 2. Most active countries and international collaboration on SBS during 1975-2020

Rank	Country (587)	Articles	Freq	SCP	MCP	MCP_Ratio	GDP (2019)	
1 st	USA	93	0.23	86	7	0.08	65,111.6	—
2 nd	United Kingdom	44	0.11	37	7	0.16	41,030.2	—
3 rd	Sweden	42	0.10	39	3	0.07	51,241.9	
4 th	Germany	37	0.09	35	2	0.05	46,564.0	
5 th	Japan	28	0.07	23	5	0.18	40,846.8	
6 th	Denmark	20	0.05	18	2	0.10	59,795.3	
7 th	China	15	0.04	10	5	0.33	10,098.9	
8 th	France	12	0.03	12	0	0.00	41,760.6	
9 th	Malaysia	11	0.03	10	1	0.09	11,136.8	
10 th	Canada	10	0.02	10	0	0.00	46,212.8	

TC: Total Citations

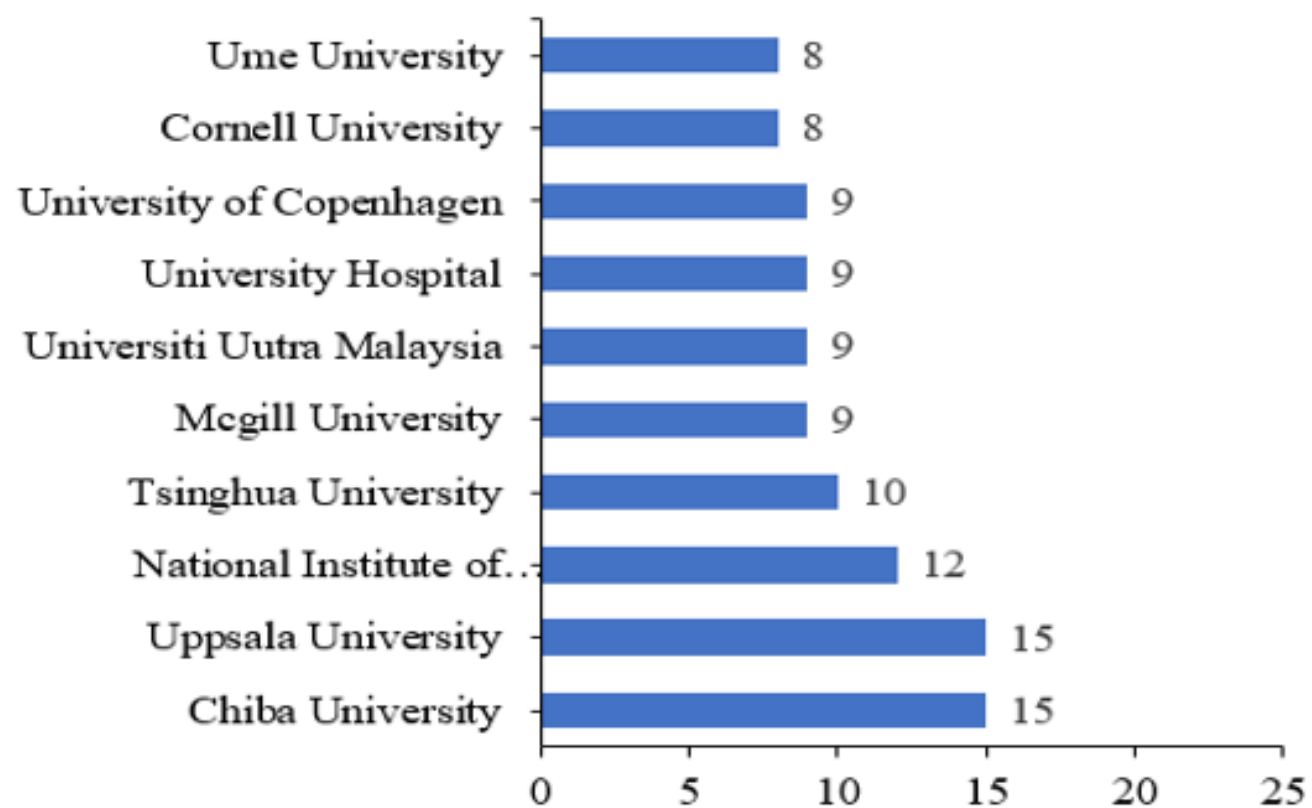


Figure 4. The top 10 most relevant Affiliation on SBS during the period 1975 to 2020.

Table 3. Top 5 cited articles SBS during the period 1975 to 2020

Rank	Author,	Journal,	Articles	Year	TC
1 st	Wargocki P, 2000.	Indoor Air	The Effects of Outdoor Air Supply Rate in an Office on Perceived Air Quality, Sick Building Syndrome (SBS) Symptoms and Productivity	2000	377
2 nd	Finnegan MJ, 1984.	BR MED J	Sick building syndrome	1984	274
3 rd	Wargocki P, 1999.	INDOOR AIR	Perceived Air Quality, Sick Building Syndrome (SBS) Symptoms and Productivity in an Office with Two Different Pollution Loads	1999	272
4 th	Burge S, 1987.	ANN OCCUP HYG	Sick Building Syndrome: A Study of 437 Office Workers	1987	269
5 th	Redlich CA, 1997.	LANCET	Sick-building syndrome	1997	262



Figure 5. WordCloud of author keywords on SBS during 1975 to 2020.

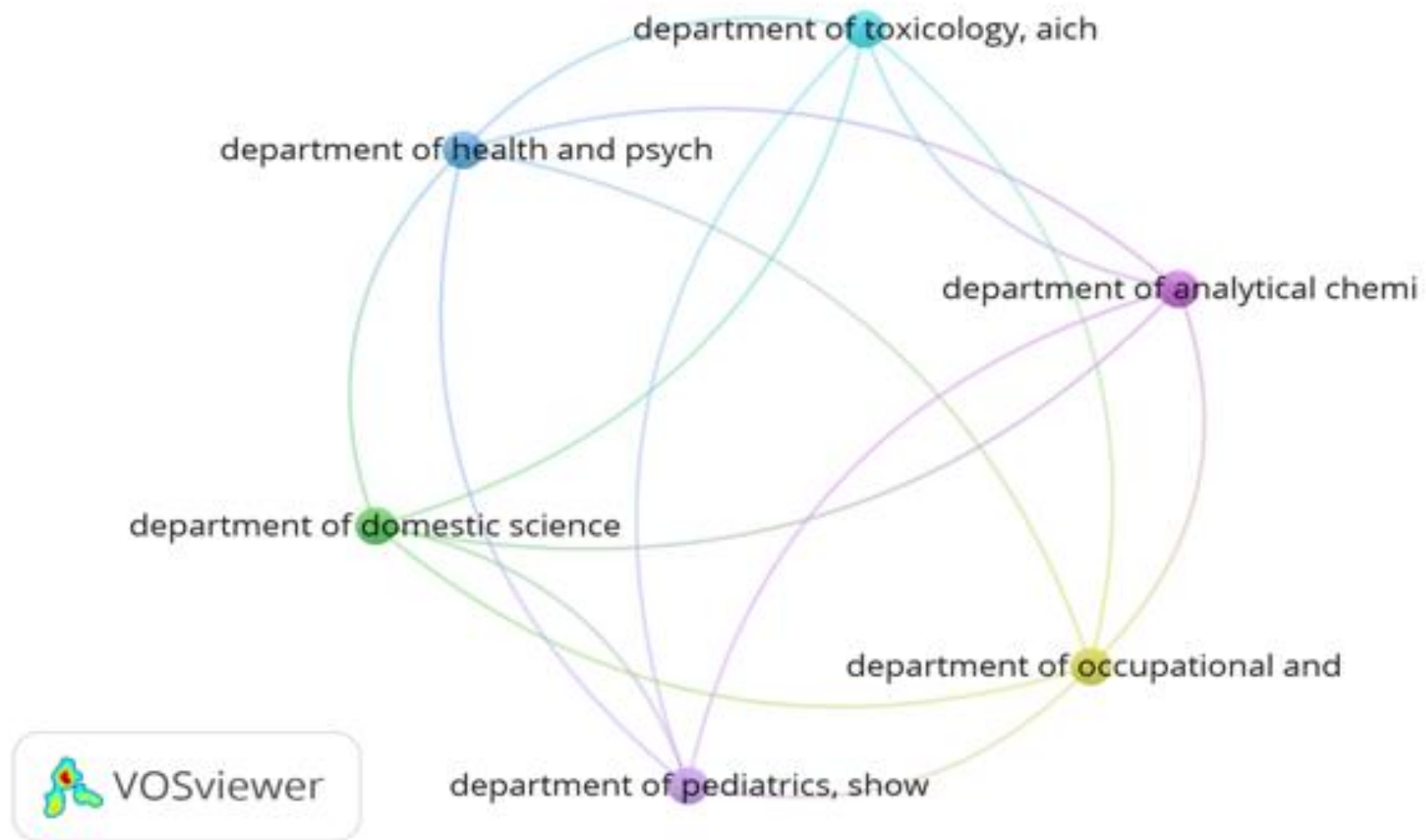


Figure 6. VOS viewer visualization of organizational collaboration (1975 to 2020)

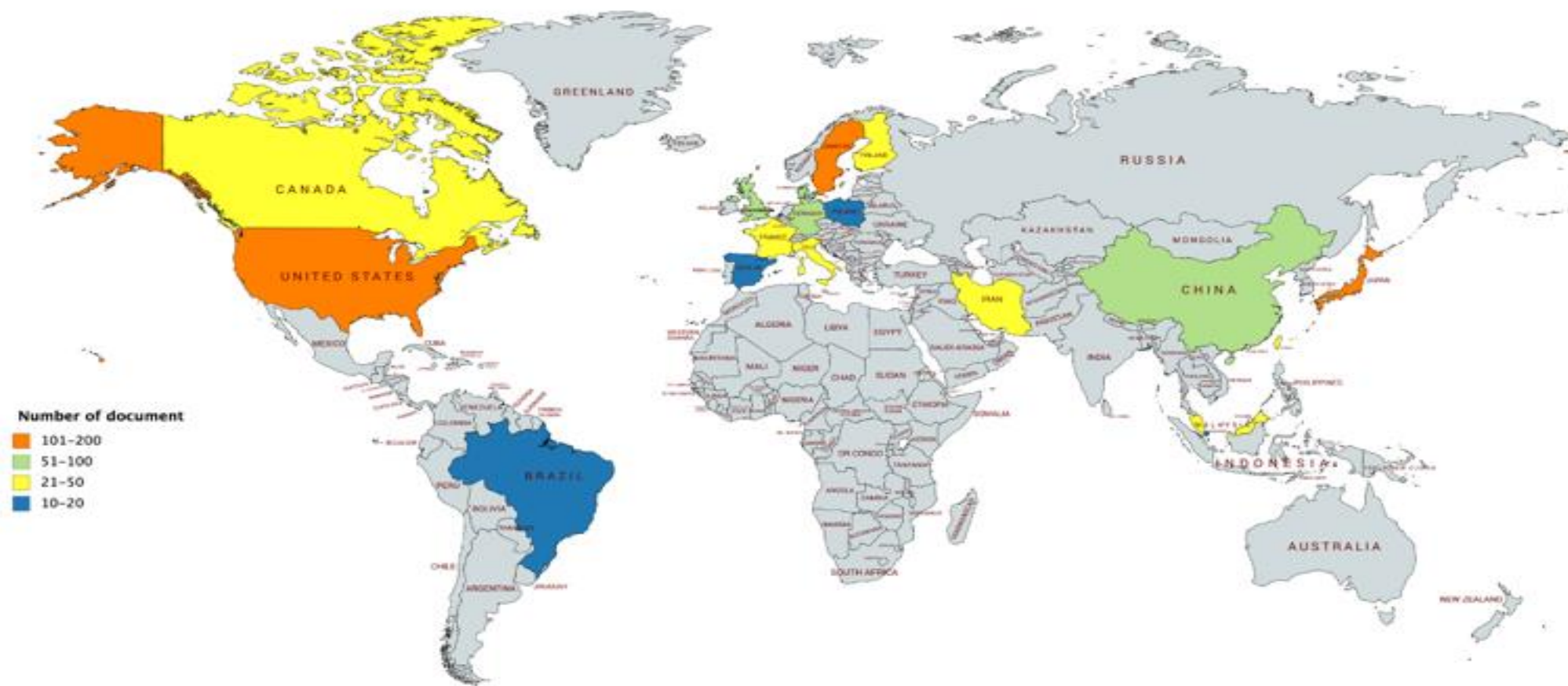


Figure 8. The country scientific production on SBS during 1975 to 2020.

Cont.

- The current study, to the best of the author's knowledge, is the first bibliometric study to analyze the health-related issue and trend in SBS. Previously there are no published bibliometric studies on Sick Building Syndrome.
- The health aspect of building syndrome is an emerging and important health component which need to be addressed.
- This study measured the health-related literature on SBS, with providing baseline information for future research.

Cont.

- The current study showed inadequate international collaboration in this field. Establishing global research networks which include low and middle-income countries is very important for the future to get more knowledge about it.
- Such networks will help developing countries to improve their research and knowledge in response to building-related symptoms.



Conclusion:

- ✓ There is serious need to study more about the health aspects of the building-related syndrome.
- ✓ The current study showed that there is gap an inadequate international collaboration in this field.
- ✓ Establishing global research networks which include low and middle-income countries is very important for the future to get more knowledge about it.
- ✓ With increase of air pollution there is need of exchange information and health lessons from previous and experiences to be used for early identification, prevention and control the SBS issue in the coming future.

Research benefits:

- The findings highlight the critical role of international collaboration in advancing this field of SBS research.
- By offering a comprehensive indication of the current landscape, Bibliometric evaluation serves as a valuable guide for researchers, policymakers, and stakeholders, emphasizing the essential role of SBS.
- The study also highlights that a growing of documents in SBS research collaboration in this field needs to be strengthened to improve the global attention to SBS issue through research.

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“The Mind and Body are not separate, What affects one affects others”

