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Mapping The Social Structure Of Attention Deficit Hyperactivity Disorder: A Bibliometric Study

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Abstract
Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder with significant implications for affected individuals, particularly children, who are at risk for adverse outcomes such as academic underachievement, social conflicts, and difficulties with authority figures. This study undertakes a comprehensive bibliometric analysis of ADHD research to map the intellectual and social structure of the field. By analysing 1,102 publications from the Scopus database, the study examines publication trends, identifies leading contributors, and evaluates the consistency of research findings with established bibliometric laws, such as Bradford's and Lotka's Laws. The analysis reveals a substantial increase in ADHD research over time, with peaks in publication activity occurring in 2020 and 2023. Key contributors include prolific authors, high-impact journals, and leading institutions, predominantly from developed nations. The findings suggest that ADHD research is characterized by a high level of international collaboration, though it remains concentrated in a limited number of core journals and among a few prolific authors. The study also identifies deviations from traditional bibliometric laws, highlighting the unique and interdisciplinary nature of ADHD research. The results of this bibliometric analysis provide valuable insights into the current state of ADHD research and its future directions. The study underscores the importance of continued international collaboration and the need for more comprehensive and high-quality research contributions to advance the understanding and treatment of ADHD. Additionally, the analysis informs the development of evidence-based policies and guidelines, aiding clinicians, researchers, and policymakers in addressing the challenges posed by ADHD. Future research should expand the scope of analysis to include additional databases and explore methodology-based and theory-based reviews to further enrich the field. This study contributes to the existing literature by offering a detailed overview of the ADHD research landscape, identifying key trends, and providing a foundation for future scholarly inquiry and clinical practice.
Key words; ADHD, Bibliometric analysis

BACKGROUND OF THE STUDY:

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder that significantly impacts the lives of affected children, placing them at increased risk for adverse outcomes such as academic underachievement, school failure, social conflicts, and difficulties in interacting with authority figures. The American Psychiatric Association (2000) defines inattention, a core symptom of ADHD, as a persistent challenge in sustaining attention during tasks or play activities. Historical observations, such as those by Crichton (1798), suggested that ADHD symptoms generally diminish with age. However, contemporary research indicates that over 50% of individuals diagnosed with ADHD in childhood continue to experience symptoms into adulthood, often manifesting in more pervasive areas of life (Barkley, 2006b). These symptoms, characterized by impulsivity and rapid emotional responses—particularly frustration, anger, hostility, and aggression—are not necessarily indicative of underlying emotional disturbances but rather are a response to immediate goals (Conners, 2000; Barkley, 2006b). The terminology surrounding ADHD has evolved over time; it was originally referred to as Attention Deficit Disorder (ADD) until 1987, when the term "hyperactivity" was incorporated to better capture the full spectrum of symptoms. Despite this update, both terms are still occasionally used interchangeably.

Cognitive Behavioral Therapy (CBT) is frequently employed as an effective treatment strategy, focusing on reframing negative thought patterns, managing emotional responses, and developing coping mechanisms to better manage ADHD symptoms.

This study seeks to map the social structure of ADHD research through a bibliometric analysis, aiming to uncover publication trends, identify leading contributors, and assess the alignment of research findings with established bibliometric laws. The growing prevalence of Attention Deficit Hyperactivity Disorder (ADHD) and its significant impact on individuals and society underscore the need for a comprehensive understanding of the research landscape surrounding this condition. ADHD is not only a major public health concern due to its association with long-term adverse outcomes—such as academic failure, social difficulties, and persistent behavioral problems—but it also presents substantial challenges in clinical management and intervention strategies. Despite extensive research efforts, the body of literature on ADHD remains vast and fragmented, making it difficult for researchers, clinicians, and policymakers to navigate and synthesize existing knowledge effectively.

A bibliometric analysis of ADHD research is therefore justified for several key reasons. First, it offers a systematic and objective method to map the intellectual structure of the field, providing insights into the most influential studies, authors, journals, and institutions. Such an analysis can identify current research trends, gaps in the literature, and potential directions for future studies, thereby contributing to a more targeted and efficient research agenda. Second, understanding the social structure of ADHD research—including collaboration networks and citation patterns—can enhance our knowledge of how research communities are formed and how ideas proliferate within the field. This knowledge is crucial for fostering greater collaboration and encouraging the dissemination of impactful research findings across different disciplines and regions. Third, the findings from this analysis can inform the development and revision of policies, guidelines, and practices related to ADHD. Policymakers and healthcare authorities rely on the latest and most comprehensive evidence to establish standards for diagnosis, treatment, and support for individuals with ADHD. By identifying key research trends and gaps, this study can provide critical input for refining ADHD-related guidelines, such as those issued by the American Psychiatric Association (APA) or other health organizations, ensuring they are based on the most current and robust evidence. Finally, by examining the consistency of the research with established bibliometric laws, this study can validate the robustness of the research trends identified and provide a benchmark for future bibliometric studies in the domain of ADHD.

This research is justified by the need to consolidate and critically assess the expansive body of literature on ADHD, facilitating a clearer understanding of the disorder, informing more effective research and clinical practices, and supporting the development of evidence-based policies and guidelines.

RESEARCH QUESTIONS

This study seeks to systematically analyze the research landscape surrounding Attention Deficit Hyperactivity Disorder (ADHD) through a detailed bibliometric analysis. The following research questions guide the inquiry:

RQ1.What are the current publication trends in the domain of Attention Deficit Hyperactivity Disorder?

This question aims to uncover and characterize the trajectory of research outputs on ADHD, identifying patterns over time, including significant increases, decreases, or shifts in the thematic focus within the field.

RQ2.Who are the leading contributors in ADHD research, including the most productive journals, institutions, and authors?

This question seeks to identify the key players in ADHD research, highlighting the journals, institutions, and researchers who have made the most significant contributions to the field. This analysis will help illuminate where and by whom the most impactful work is being generated.

RQ3.What is the social structure underlying research on Attention Deficit Hyperactivity Disorder?

This question focuses on understanding the network of collaborations and relationships among researchers, institutions, and countries within the ADHD research community. The goal is to map how knowledge is disseminated and developed within the field.

RQ4. How do the results of the bibliometric analysis align with established bibliometric laws, such as Bradford's Law and Lotka's Law?

This question examines whether the distribution of publications and the productivity of authors in the field of ADHD research conform to these classical bibliometric laws, thereby providing a deeper understanding of the research dynamics within this domain.

RESEARCH METHODOLOGY

The methodology of this study is based on a comprehensive bibliometric analysis, which provides a systematic and quantitative approach to reviewing the literature. Originally introduced by Pritchard (1969), bibliometric analysis offers a rigorous method for evaluating research outputs, ensuring a transparent and reproducible review process that minimizes subjective biases inherent in traditional narrative reviews. This study employs two primary approaches within bibliometric analysis: science mapping and performance analysis.

Science Mapping: Science mapping is utilized to create a visual representation of the intellectual structure of ADHD research. This approach helps identify the relationships between different research themes, uncovering key areas of focus, emerging trends, and potential future research directions. Through techniques such as co-citation analysis, keyword co-occurrence analysis, and collaboration network analysis, this study maps the knowledge hierarchy within the ADHD research domain.

Performance Analysis: Performance analysis is used to evaluate the contributions of various research entities, including authors, journals, institutions, and countries. By quantifying metrics such as publication counts, citation counts, and h-index scores, this analysis identifies the most prolific and influential contributors to ADHD research, offering insights into the distribution of research efforts and impacts across different entities.

DATA COLLECTION AND PROCESSING:

The data for this study were sourced from the Scopus database, chosen for its extensive coverage of journals across multiple disciplines, particularly in the social sciences. A meticulously designed search strategy was employed to ensure comprehensive coverage of the relevant literature. The search query included keywords related to ADHD, yielding 18,443 results. These results were then filtered based on inclusion and exclusion criteria, resulting in a final dataset of 1,102 articles. The criteria focused on articles published in the fields of social science, multidisciplinary studies, and arts and humanities, limited to peer-reviewed journal articles in English, published between 2000 and 2024.

DATA ANALYSIS:

The analysis was conducted using the Bibliometrix R package (Aria & Cuccurullo, 2017), a specialized tool for conducting detailed bibliometric analyses. The data were processed through the following steps:

- **Keyword Analysis:** Keywords were categorized into primary and secondary groups to capture the breadth of the ADHD research field.
- **Performance Metrics:** Contributions of authors, journals, institutions, and countries were analyzed using quantitative metrics to assess productivity and influence.
- **Science Mapping:** Co-citation and collaboration networks were visualized to reveal the intellectual and social structure of ADHD research.

This methodological framework enables a comprehensive exploration of the ADHD research landscape, offering valuable insights that can inform future research directions, clinical practices, and policy development. Following the application of the previously described filters, 1102 documents were taken out of the Scopus database. Consequently, as Figure 1 illustrates, the review is predicated on the final database including 1,102 articles.

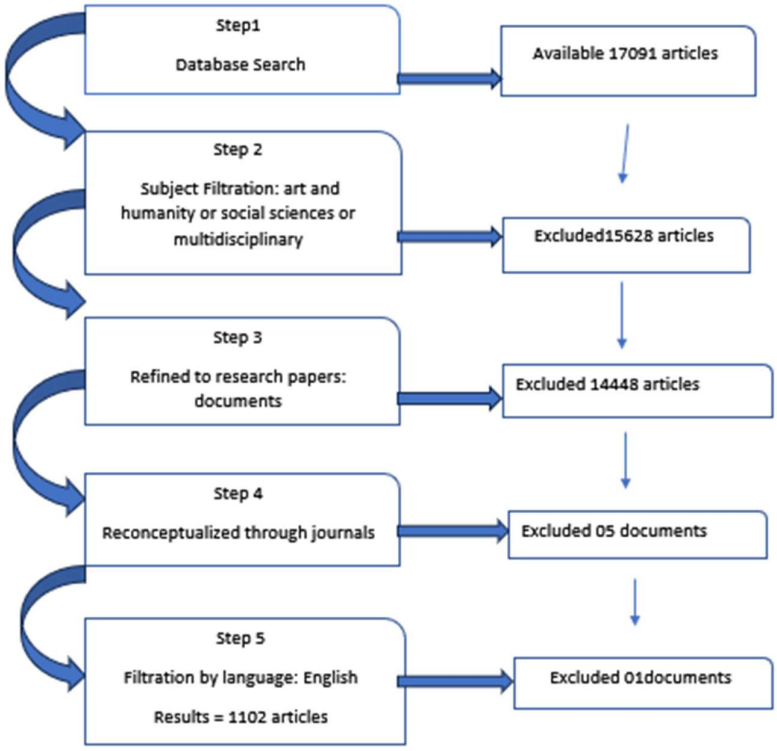

Figure1: Representation of Filtration procedure

BIBLIOMETRIC ANALYSIS AND DISCUSSION:

Detailed Statistical Overview

This section presents a comprehensive bibliometric analysis of 1,102 publications focused on the study of Attention Deficit Hyperactivity Disorder (ADHD) in children, published between 2000 and 2024. The data, sourced from the Scopus database, offers valuable insights into the research dynamics within this field, shedding light on the extent of collaboration, research output, and the thematic diversity of ADHD studies.

The dataset encompasses 1,102 publications authored by a total of 4,345 researchers, indicating a significant level of scholarly activity in this domain. These publications were disseminated across 352 distinct academic sources, reflecting a wide distribution of research across various journals and platforms. The researchers employed 1,825 unique keywords to categorize their work, highlighting the rich diversity of topics explored within the ADHD research community. A notable aspect of the dataset is the contribution of single-authored works. Out of the 4,345 authors, 92 individuals produced single-authored documents, resulting in a total of 92 such articles. Although single-authorship is present, it constitutes a relatively small fraction of the overall research output, underscoring the predominant collaborative nature of ADHD research. The average number of citations per document stands at 27.41, indicating a robust impact of the published works and suggesting that the field of ADHD research is both active and influential. Furthermore, the analysis reveals that the average number of co-authors per manuscript is 4.81, which underscores the collaborative efforts that characterize this research area. This collaboration is further evidenced by the fact that 19.15% of the co-authors are international, reflecting a substantial degree of global collaboration and the cross-border exchange of knowledge.These findings collectively suggest that the majority of research on ADHD is the result of collaborative endeavours. The high level of co-authorship, coupled with significant international collaboration, indicates a strong network of researchers working together to advance the understanding of ADHD. This collaborative environment not only enhances the quality and impact of the research but also provides opportunities for emerging scholars to engage with experienced researchers, fostering deeper exploration and innovation in the field.In summary, the bibliometric analysis demonstrates the breadth, diversity, and collaborative nature of the ADHD research landscape. The extensive network of researchers and the wide

range of topics covered in the literature reflect a vibrant and dynamic field, continually evolving through collective scholarly efforts.

Timespan	2000:2024
Source (Journals)	352
Annual growth rate%	2.83
References	50873
Authors Keywords (DE)	1825
Authors of single- authored docs	90
Co-authors per doc.	4.81
Documents	1102
Average citation per doc.	27.41
Keywords Plus (ID)	3174
Authors	4345
Single authored docs	92
International co- authorships %	19.15

Table1: **Representation of Detailed Statistical Overview**

OVERALL TREND ANALYSIS:

The overall trend analysis of research output on "Attention Deficit Hyperactivity Disorder in children," as depicted in Figure 2, reveals significant developments in the field across multidisciplinary journals, social sciences, arts, and humanities from 2000 to 2024. The analysis highlights several distinct phases in the publication trends over this period. In the early phase, spanning from 2000 to 2005, the field saw relatively limited scientific output, with fewer than 24 publications per year. This period reflects the nascent stage of ADHD research, where the academic community was just beginning to explore the disorder in depth. The second phase, covering the years 2006 to 2013, witnessed a modest but steady increase in research activity. This rise indicates growing interest among researchers in understanding ADHD, likely driven by increasing recognition of the disorder's impact on children's academic and social development. A more pronounced surge in publication activity is observed between 2014 and 2019. During this period, there was a significant rise in the number of published articles, reflecting heightened scholarly attention to ADHD. This increase can be attributed to advancements in diagnostic techniques, greater awareness of the disorder, and a broadening of research perspectives to include interdisciplinary approaches. The peak of research activity occurred in 2020 and 2023, with 87 and 85 publications, respectively. This sharp increase suggests that ADHD has become a prominent topic of inquiry, reflecting its importance in both academic research and clinical practice. The high number of publications in these years indicates a strong and sustained interest in the disorder, likely fueled by ongoing debates regarding its prevalence, diagnosis, and treatment. This upward trend underscores the potential for future exploration of ADHD, particularly in understanding its broader social and educational implications. As researchers continue to investigate the disorder, the body of knowledge surrounding ADHD is expected to expand further, offering new insights and informing better practices for managing the condition.The increasing volume of research also highlights the evolving understanding of ADHD, as educators, clinicians, and policymakers seek to address common misconceptions about the disorder. This is exemplified by studies initiated by economists and educators, which focus on correcting misunderstandings related to the prevalence, symptoms, diagnosis, and treatment of ADHD (e.g., Sciutto, M. J., Terjesen, M. D., & Bender Frank, A. S. B., 2000).

Overall, the trend analysis indicates a dynamic and growing field, with ADHD research poised for continued expansion and exploration in the coming years.

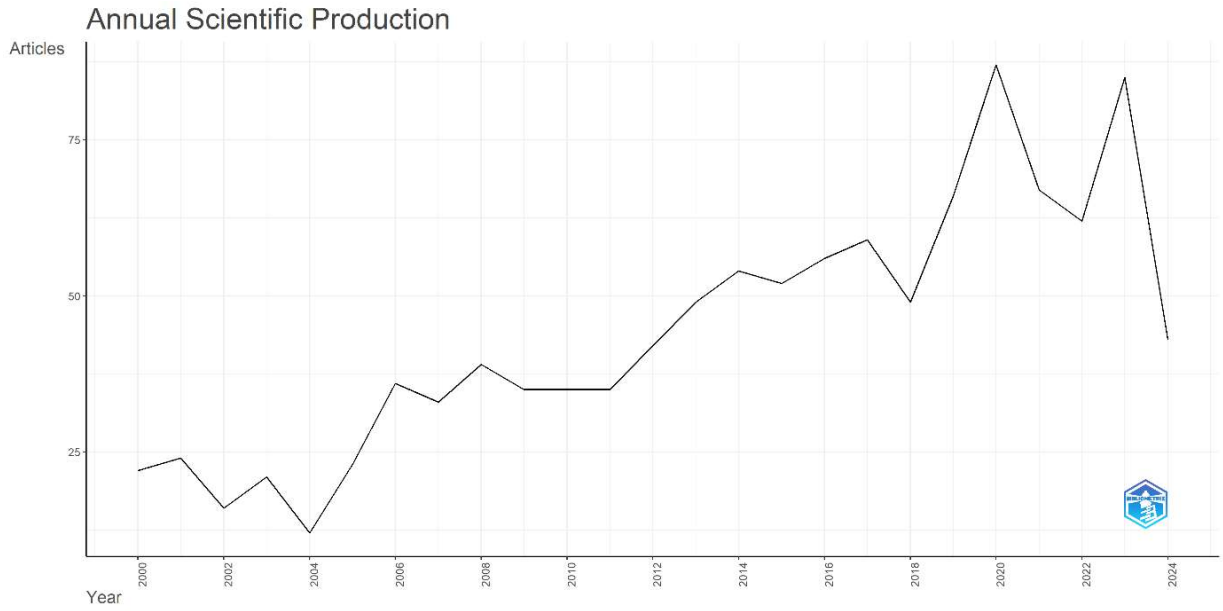

Figure 2: Graphical representation of Annual growth of publication

TOP PRODUCTIVE AUTHORS:

Table 2 presents the most prolific authors in the field of Attention Deficit Hyperactivity Disorder (ADHD) research, detailing their total number of publications, h-index, g-index, and total citations. These metrics provide a comprehensive overview of the scientific impact and productivity of each author. The **h-index** is a widely recognized metric that measures both the productivity and citation impact of a researcher's publications. It indicates the number of publications (h) that have received at least h citations, thus reflecting the consistency of an author's impact over time (Ellegaard & Wallin, 2015; Hirsh, 2005). The h-index is particularly valued for its ability to minimize the influence of a few highly cited papers, offering a more balanced assessment of an author's body of work (Vanclay, 2007).Complementing the h-index is the **g-index**, which provides an alternative measure of research performance by giving more weight to highly cited papers. The g-index is calculated based on the citation distribution across an author's publications, making it a useful tool for highlighting authors who have produced highly influential work within a specific field. According to the data, **Dupaul Gj** emerges as the most productive author in the ADHD research domain, with a total of 18 publications. This high level of output, combined with the corresponding citation metrics, underscores Dupaul's significant contribution to the field. Following Dupaul, **Evans Sw** and **Fabiano Ga** are also prominent figures in this research area, each contributing 10 articles. These authors are recognized for their substantial impact, as evidenced by their citation metrics and index scores. Overall, the analysis of top productive authors highlights the key contributors who have driven the advancement of knowledge in ADHD research. Their prolific output and high citation impact reflect their central roles in shaping the understanding and treatment of ADHD, influencing both academic discourse and practical interventions in the field. Faraone Sv garnered 696 citations, making him the most cited among the top contributing authors, each of whom has published eight times. In contrast, Lai Kyc is among the authors with the fewest citations, indicating a lesser impact within the field compared to peers with similar publication counts.

Authors	Articles	Total Citation	H- Index	G- Index
Dupaul Gj	18	592	13	18
Houghton S	14	306	11	14
Ma Jlc	13	95	7	9
Evans Sw	10	316	9	10
Fabiano Ga	10	336	8	10
Pelham We	10	518	7	10
Lai Kyc	9	79	6	8
Tannock R	9	324	7	9
Buitelaar Jk	8	406	6	8
Faraone Sv	8	696	7	8

Table 2: Tabular Representation of Top productive authors

MOST PROMINENT JOURNALS:

To gain a comprehensive understanding of the current state of research in the field of Attention Deficit Hyperactivity Disorder (ADHD) and its potential future directions, it is essential to identify the most prominent journals that consistently publish high-quality papers. This analysis not only highlights where significant research contributions are being made but also provides insights into the influence and reach of these journals within the academic community. In this study, a total of 1,102 papers published across 352 journals were included in the bibliometric analysis. Table 3 ranks the top journals based on the number of articles published on the topic of "Attention Deficit Hyperactivity Disorder in children." These rankings offer a clear picture of the leading outlets for ADHD research.

Plos One emerges as the most prolific journal in this field, with 125 published articles that have garnered a total of 3,601 citations. This positions Plos One at the forefront of ADHD research, indicating its broad acceptance and significant impact within the academic community.Following closely is the **Archives of General Psychiatry**, which, although publishing only 34 papers, has achieved the highest citation count among the top journals, with a remarkable 6,461 citations. This suggests that the research published in this journal is not only of high quality but also highly influential in shaping the discourse on ADHD.

The **International Journal of Disability, Development, and Education** is also noteworthy, with 20 published papers and at least 202 citations. This journal plays a crucial role in advancing research related to ADHD, particularly in the context of disability and educational development. Additionally, the **Journal of Child and Family Studies** deserves mention for its significant impact despite a smaller volume of publications. With only 16 papers, it has amassed 869 citations, reflecting the high quality and relevance of its contributions to the field.Overall, the top 10 most productive journals have published more than one-third (384 articles) of the total 1,102 articles included in this analysis. These journals not only lead in terms of publication volume but also in citation impact, making them key platforms for the dissemination of influential research on ADHD. Their prominence underscores the importance of these journals in shaping the understanding and treatment of ADHD, as well as in guiding future research directions.

TOP AFFILIATION UNIVERSITIES/INSTITUTIONS:

Figure 3 illustrates the top contributing universities and institutions in the field of Attention Deficit Hyperactivity Disorder (ADHD) research, ranked by the number of publications. Leading this list is **Lehigh University**, which has made a significant impact with 49 published articles. This positions Lehigh University as the most prolific institution in ADHD research, reflecting its strong focus and expertise in this domain. Following Lehigh University is the **University of Western Australia**, which has contributed 42 articles to the body of research on ADHD. This institution's substantial output underscores its active role in advancing the understanding and treatment of ADHD.

At the lower end of the top ten contributors, the **Chinese University of Hong Kong** has published 29 articles, making it the least prolific among the top ten but still a significant player in the field. Additionally, both the

University of Illinois College of Medicine and the **University of Bergen** have each contributed 32 publications, further highlighting their important roles in ADHD research.

Collectively, these top 10 institutions have produced a total of 371 articles, accounting for 33.67% of all documents in the ADHD research domain. This concentration of research output within a relatively small number of institutions indicates the central role these universities play in driving the field forward, contributing significantly to the development of knowledge and clinical practices related to ADHD.

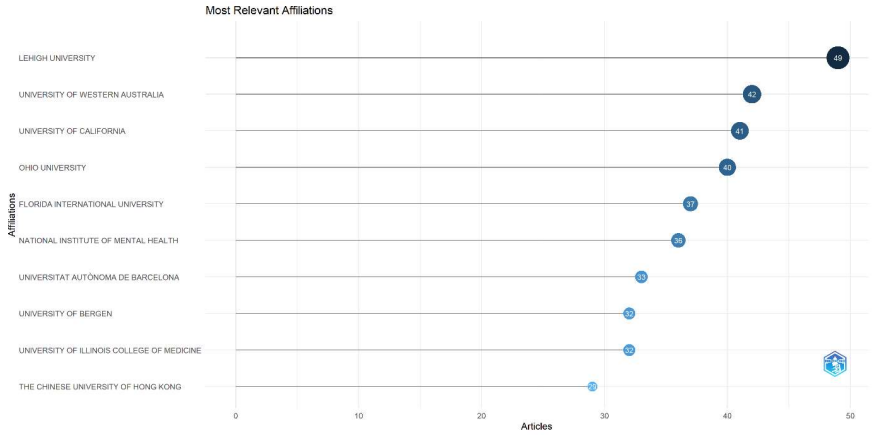

Figure:3 Representation of Most prolific University/ Institutions

COUNTRY COLLABORATION / SOCIAL STRUCTURE:

Country collaboration analysis is a crucial bibliometric tool for examining the social structure and patterns of international cooperation within a specific research domain (Ghura et al., 2022). As highlighted by Khatib et al. (2021) and Joshipura and Wats (2022), intellectual partnerships between nations play a vital role in advancing scientific knowledge and enhancing the overall quality of research.

Figure 4 presents a global collaboration map for research on Attention Deficit Hyperactivity Disorder (ADHD), illustrating the extent and intensity of cooperation between different countries. In this map, the color gradient from dark blue to light blue indicates an increasing number of publications, while grey areas represent countries with no publications in the dataset. The brown lines on the map depict the networks of collaborative relationships between countries.

The strongest collaborative connection is observed between the **United States and Canada**, where researchers from these two countries have co-authored 19 documents. This robust partnership highlights the close intellectual ties between these neighboring nations, which are likely driven by shared research interests and a high level of academic exchange.Another significant collaboration is between the **United States and China**, with 15 co-authored documents. This partnership underscores the growing influence of China in global ADHD research and reflects the increasing trend of international collaboration between Western and Eastern research communities.

The **United States and the United Kingdom** also demonstrate a strong collaborative network, with 14 co-authored articles. This transatlantic partnership is indicative of the deep-rooted academic ties and shared research agendas between these two countries.Other notable countries involved in active research collaboration include the **Netherlands, Germany, Australia,** and **France**. These countries contribute significantly to the global research output on ADHD and are part of a broader network of developed nations that dominate the field.The collaboration map also reveals a disparity between developed and developing nations in terms of research contribution. Industrialized countries have made substantial contributions to ADHD research, as evidenced by their prominent roles in international collaborations. In contrast, developing and underdeveloped countries appear to have contributed less to the research in this field, as indicated by the lack of publications and fewer collaborative connections.

This pattern of collaboration emphasizes the need for greater inclusion and support for research initiatives in less developed regions. Strengthening global partnerships and fostering research capacity in these areas could lead to a more equitable distribution of knowledge and a more comprehensive understanding of ADHD on a global scale.

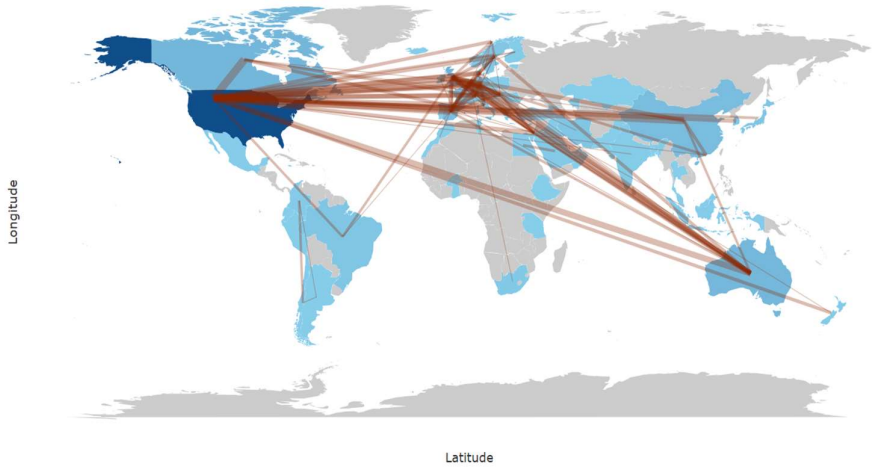

Figure 4: Representation Country collaboration Map

Three-Field Plot

Figure 8 presents a three-field plot, visualized through a Sankey diagram, which illustrates the integrated relationships between authors (left), countries (center), and sources (right). In this diagram, each box represents a specific entity—be it an author, country, or journal—and is color-coded for clarity. The height of each box reflects the number of connections it has with its neighboring boxes, indicating the strength and frequency of these linkages (Abhishek & Srivastava, 2021). The data reveals that six of the top ten authors—**Buitelaar Jk**, **Fabiano Ga**, **Pelham We**, **Dupaul Gj**, **Faraone Sv**, and **Evans Sw**—are affiliated with the United States, highlighting the dominant role of American researchers in the field of ADHD. This dominance underscores the significant contributions made by U.S.-based scholars to the global understanding and research of ADHD.Interestingly, the analysis also shows a lack of Indian representation among the top ten authors, suggesting that research contributions from India have not yet reached the same level of recognition in this field. This could point to potential areas for increased collaboration and research output from Indian institutions in the future.On the country axis, the plot indicates that journals like the **International Journal of Disability, Development, and Education** are particularly associated with Australian research contributions, reflecting Australia's strong engagement in ADHD-related studies, especially in the context of disability and education.The sources **Plos One** and **Scientific Reports** are shown to have the highest inbound flow of connections, indicating that these journals are key platforms for publishing high-impact research on ADHD. The prominence of these journals aligns with their reputation as leading sources of scholarly work in the field, further validating their importance as primary outlets for ADHD research.Overall, the three-field plot provides a comprehensive view of the intricate relationships between key authors, countries, and journals within the ADHD research domain. It highlights the central role of American researchers and journals in driving the field, while also identifying opportunities for greater international collaboration, particularly with underrepresented regions like India.

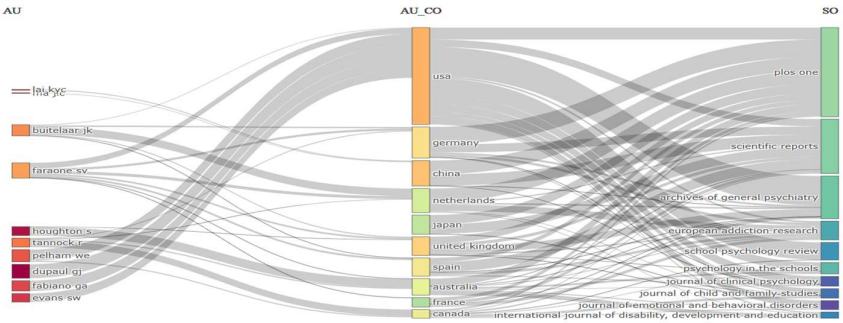

Figure 5: Representation of Three- field plot

BRADFORD'S LAW

Bradford's Law, proposed by S.C. Bradford in 1985, posits that a specific field of research is often dominated by

a relatively small number of core journals, which account for a substantial portion of the total published articles. According to Bradford's model, journals in any given field can be divided into three zones, each containing approximately one-third of the total articles, although the number of journals increases significantly as one moves from the first zone to the second and third zones. This suggests that a limited number of "core" journals have a disproportionately large impact, while a broader array of journals contribute more sporadically to the field (Tsay & Li, 2017; Tepe et al., 2022; Singh et al., 2007; Bhayani et al., 2021; Wang et al., 2022).

In the context of ADHD research, the application of Bradford's Law reveals intriguing insights. Table 4 outlines the distribution of articles across three zones:

- **Zone 1**: Consists of 11 core journals, which collectively published 373 articles, accounting for 33.84% of the total publications.
- **Zone 2**: Includes 62 journals that contributed 366 articles, representing 33.21% of the total.
- **Zone 3**: Encompasses 279 journals, which published 363 articles, making up 32.94% of the total.

While Bradford's Law suggests an equal distribution of articles across the three zones, our analysis indicates slight variations, with Zone 1 containing a marginally higher percentage of articles. This finding suggests that while a small number of core journals, such as **Plos One**, **Scientific Reports**, and **Archives of General Psychiatry**, play a central role in disseminating ADHD research, the distribution is not perfectly aligned with Bradford's theoretical model. The results imply a more dispersed research landscape, offering researchers a diverse range of publication options within the ADHD domain. This deviation from Bradford's Law, as observed in our study, aligns with the findings of Deo (1995) and Tepe et al. (2022), suggesting that ADHD research does not adhere strictly to the classical bibliometric distribution, potentially due to the interdisciplinary nature of the field.

Zone	Sources Count	Publication's Count	Percentages
1	11	373	33.84
2	62	366	33.21
3	279	363	32.94
Total	352	1102	100

Table: 4 Zone wise distribution

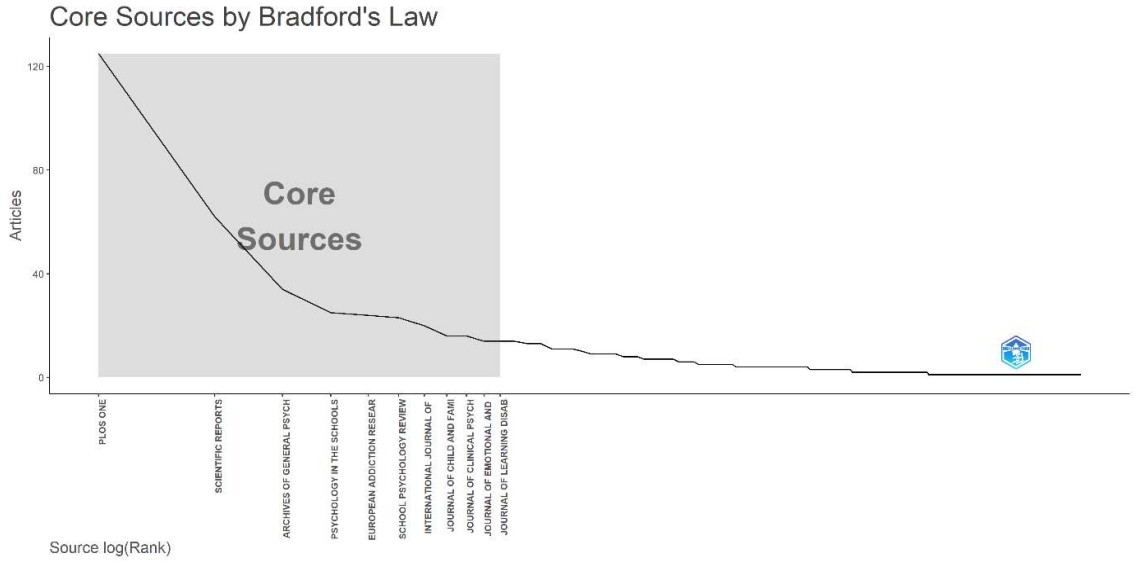

Figure 6: Bradford's law distributed

Lotka's Law

Lotka's Law, introduced by Alfred J. Lotka in 1926, describes the frequency of publication by authors in a given field. The law posits that the number of authors publishing a certain number of articles follows an inverse square law: approximately 60% of authors have only one publication, 15% have two, and 6.6% have three (Tepe et al., 2022; Wang et al., 2022). This distribution suggests that the majority of scholarly output is produced by a small group of highly productive authors, while most researchers contribute only a few publications.In applying Lotka's

Law to ADHD research, our findings indicate significant deviations from the expected distribution. Specifically:

- **80.4% of authors** have only one publication in the field, a higher percentage than the 60% predicted by Lotka's Law.
- **11.9% of authors** have two publications, falling short of the 15% benchmark.
- **3.9% of authors** have three publications, also below the 6.6% standard.

These results suggest that ADHD research is characterized by a broader base of contributors, with fewer highly prolific authors than Lotka's Law would predict. This distribution highlights the fragmented nature of the field, where many researchers contribute sporadically, and only a few authors produce a substantial body of work. Despite the increasing scholarly focus on ADHD in recent decades, a significant proportion of authors remain limited to a single publication. This could indicate that ADHD research, while growing, may still be seen as a secondary focus for many researchers rather than a primary area of expertise.

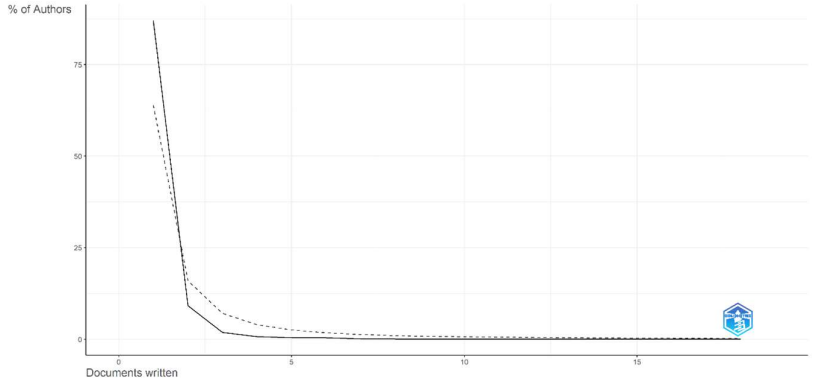

Figure 7: Lotka's distribution law

CONCLUSION:

The study of Attention Deficit Hyperactivity Disorder (ADHD) has gained substantial momentum in recent years, driven by the critical need to understand the neurological, behavioural, and educational impacts of the disorder. This bibliometric analysis, utilizing data from the Scopus database, provides a comprehensive overview of the ADHD research landscape, offering valuable insights into publication trends, top journals, prolific authors, significant documents, and the social structure of the field. The analysis of 1,102 publications highlights an overall growth in scholarly interest in ADHD, with periods of fluctuating output followed by renewed increases in research activity. Key contributors to the field include high-impact journals such as **Plos One** and **Scientific Reports**, leading authors like **Dupaul Gj** and **Houghton S**, and prominent institutions including **Lehigh University**, **University of Western Australia**, and **University of Bergen**.The study also reveals that developed nations dominate ADHD research, underscoring the importance of international collaboration to leverage the intellectual diversity of emerging countries. The application of Bradford's and Lotka's Laws demonstrates that the field is driven by a limited number of core journals and authors, with significant deviations from these classical bibliometric models, reflecting the unique characteristics of ADHD research. This research contributes to the existing literature by offering a detailed bibliometric analysis that identifies key trends and patterns in ADHD research. However, the study is not without limitations. The analysis is restricted to publications indexed in the Scopus database, and future studies could benefit from including additional databases such as Dimensions, Web of Science, and PubMed. Furthermore, while this study focused on identifying top articles, journals, and institutions, future research could explore methodology-based and theory-based reviews, providing a more comprehensive understanding of the field.In conclusion, ADHD research continues to evolve, with a growing body of work that informs both academic inquiry and clinical practice. The insights gained from this bibliometric analysis offer a roadmap for future research, highlighting opportunities for greater international collaboration and the need for more focused, high-quality contributions to advance the field.

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