

Mental Health and Physical Education in Childhood: Mapping the Research Landscape (2016–2025).

Salud Mental y Educación Física en la Infancia: Mapeo del Panorama de Investigación (2016–2025)

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Abstract: The intersection of mental health and physical education in childhood has emerged as a critical research domain, reflecting the growing recognition of the interplay between physical activity and psychological well-being. This study maps the research landscape of this interdisciplinary field through a bibliometric analysis of peer-reviewed literature from the Scopus database covering the period 2016–2025. A total of 689 publications were retrieved using targeted keywords, with analysis conducted using VOSviewer and R Biblioshiny. The findings reveal a substantial growth trajectory, with publications increasing by approximately 315% from 2017 to 2025, accelerated notably during the COVID-19 pandemic. The United States dominated the research output, followed by the United Kingdom, China, Australia, and Canada, with English-speaking countries collectively commanding the largest share of scientific production. Journal of School Health and Child Care Health Dev emerged as the most productive outlets within the study sample, alongside specialised journals including European Physical Education Review and Journal of Teaching in Physical Education, while keyword co-occurrence analysis identified four thematic clusters centred on mental health, children and adolescents, COVID-19, and physical activity. The study highlights significant geographic disparities in research productivity, with underrepresentation from Africa, South America, and the Middle East.

Key Words: Mental health; Physical education; Children; Research trends.

Resumen: La intersección entre la salud mental y la educación física en la infancia ha surgido como un dominio de investigación crítico, reflejando un reconocimiento creciente de la interacción entre la actividad física y el bienestar psicológico. Este estudio mapea el panorama de investigación de este campo interdisciplinario a través de un análisis bibliométrico de la literatura revisada por pares de la base de datos Scopus que cubre el periodo 2016–2025. Se recuperó un total de 689 publicaciones utilizando palabras clave específicas, y el análisis se realizó utilizando VOSviewer y R Biblioshiny. Los hallazgos revelan una trayectoria de crecimiento sustancial, con un aumento de las publicaciones de aproximadamente un 315% desde 2017 hasta 2025, acelerado notablemente durante la pandemia de COVID-19. Estados Unidos domina la producción de investigación, seguido por el Reino Unido, China, Australia y Canadá, con los países de habla inglesa concentrando colectivamente la mayor parte de la producción científica. Journal of School Health y Child Care Health Dev surgieron como los canales de publicación más productivos dentro de la muestra del estudio, junto con revistas especializadas como European Physical Education Review y Journal of Teaching in Physical Education, mientras que el análisis de co-ocurrencia de palabras clave identificó cuatro clústeres temáticos centrados en la salud mental, los niños y adolescentes, el COVID-19 y la actividad física. El estudio destaca disparidades geográficas significativas en la productividad de la investigación, con una infrarrepresentación de África, América del Sur y el Medio Oriente.

Palabras clave: Salud mental; Educación física; Niños; Tendencias de investigación

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Introduction

In recent years, there has been growing interest in children's mental health and the role of physical education and sports in promoting psychological and physical well-being. Numerous studies have demonstrated that regular participation in physical and sports activities significantly contributes to improving the mental health of children and adolescents (Bakshi, 2024; Nadjem et al., 2024), by enhancing self-confidence, developing social skills (Murphy et al., 2022), and reducing symptoms of anxiety and depression (Bajwa et al., 2024; Rodriguez-Ayllon et al., 2019). Physical education is not limited to improving physical fitness; it also plays a fundamental role in building psychological resilience (Bakshi, 2024; Haouchine-Kolla, 2024; Rabouh, 2024), fostering a sense of belonging (Murphy et al., 2022), and enhancing children's psychological well-being of children (Khan et al., 2022; Korda-Orlović, 2024).

With increasing global attention to this subject, scientific research on the relationship between mental health and physical activity in children has become a growing focus, with a rising number of publications examining this relationship from various perspectives. The literature emphasises that integrating mental health and physical education within school programs yields dual positive outcomes, as physical activity helps reduce the risks associated with psychological disorders (Kauczor-Rieck et al., 2024) and enhances children's cognitive and behavioural capacities (Muniyappa, 2024; Pires et al., 2021). Moreover, incorporating mental health concepts into physical education classes assists children in developing effective coping strategies for stress and promotes lifelong healthy habits (Liu & Fernando, 2024; Muratbayevich, 2024). Despite this progress, several research challenges remain, such as the need for more studies focusing on different age groups, evaluating the effectiveness of intervention programs in diverse settings, and developing standardized tools to measure mental health in the context of physical activity. Against this backdrop, bibliometric analysis has emerged as a crucial tool for tracking the evolution of scientific knowledge, identifying research gaps, and guiding future efforts to improve children's mental health through physical education and sports.

Recently, the critical need to assess and support children's mental health has been further exacerbated by the global COVID-19 pandemic. Pandemic-induced lockdowns, school closures, and restricted access to physical activities significantly disrupted children's routines, leading to a documented rise in psychological distress and sedentary behaviors (Panchal et al., 2023; Viner et al., 2022). This unprecedented context highlighted the essential role of physical education in mitigating mental health decline; however, accurately assessing these impacts relies on diverse methodological tools, ranging from self-reported psychological questionnaires to behavioral observations (Ravens-Sieberer et al., 2022). The rapid surge in publications examining these pandemic-related effects and assessment methods has created a vast but fragmented body of literature, reinforcing the necessity of a bibliometric approach to systematically map these recent developments and synthesize the evolving research landscape.

Accordingly, this study aims to conduct a comprehensive bibliometric analysis of the scientific literature published on mental health and physical education and sports among children by reviewing the literature indexed in the Scopus database from 2016 to 2025, to monitor recent research trends and identify knowledge gaps within this specified timeframe. Based on this, the following research questions can be formulated:

- What are the temporal trends of scientific publications in mental health and physical education from 2016 to 2025?
- Which scientific journals within the study sample demonstrate the highest publication volume and citation impact in relation to physical education and children's health?
- How is scientific production geographically distributed across countries?
- Which countries and academic institutions demonstrate the highest scientific impact and research productivity?

- What are the most frequent keywords and research themes in the literature on mental health and physical education?
- What are the relationships between scientific journals, author countries, and research topics in this field?

Material and Methods

Research Design

This bibliometric review aimed to identify the most prolific studies on mental health, physical education, and children. The search was conducted in the Scopus database on 25 January 2026. The electronic search strategy and retrieval processes are summarized in Table 1.

Table 1. Query Search and Retrieval of Metadata	
Item	Detail
Database	Scopus
Search Field	TITLE-ABS-KEY
Search String	(mental health AND physical education AND children)
Publication year	2016–2025
Subject area	Psychology (PSYC), Social Sciences (SOCI)
Document type	Article
Source type	Journal
Language	English

After the initial retrieval of 5687 records and after applying all criteria, 689 articles remained for analysis. The inclusion and exclusion criteria are listed in Table 2.

Table 2. Inclusion and Exclusion Criteria	
Inclusion Criteria	Exclusion Criteria
Keywords: "mental health", "physical education", and "children"	Not addressing all three concepts
Published 2016–2025	Outside this period
Subject areas: Psychology (PSYC) or Social Sciences (SOCI)	Other subject areas
Document type: Article	Reviews, proceedings, reports, etc.
Source type: Journal	Non-journal publications
Language: English	Other languages

The literature selection and screening processes are illustrated in Figure 1 (PRISMA flow diagram).

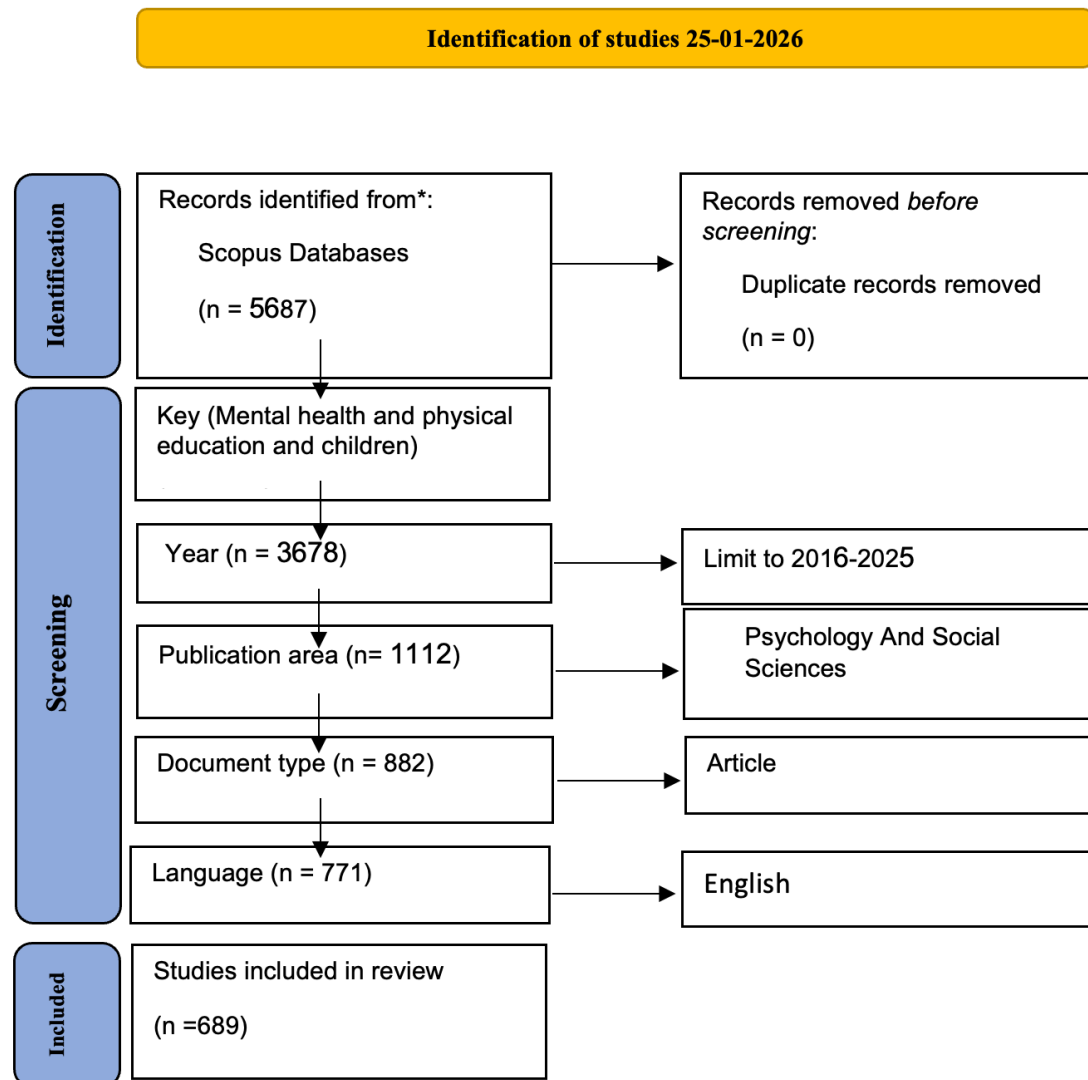


Figure 1. PRISMA Flow Diagram of Study Selection Process

The bibliometric analysis

This study employed a bibliometric analysis approach using VOSviewer and R Biblioshiny, which are among the most widely used software tools in bibliometric research. The data for this analysis were retrieved from the Scopus database, which is recognised as one of the most comprehensive and authoritative abstract and citation databases for peer-reviewed scientific literature. Scopus offers extensive coverage of high-quality journals across multiple disciplines, advanced search and filtering capabilities, and robust citation tracking features, making it particularly suitable for bibliometric studies (AlRyalat et al., 2019; Baas et al., 2020). This review was conducted based on the following rationale: first, mental health has evolved into a compelling research area with a growing body of literature; second, the intersection of mental health and physical education represents an emerging interdisciplinary domain that warrants systematic investigation; and third, a comprehensive bibliometric analysis of this field has not been previously conducted, highlighting a significant gap in the literature that this study aims to address.

Results

Temporal Trends of Scientific Publishing

Figure 2 illustrates the temporal trends in the distribution of scientific articles published in the fields of mental health and physical education over a full decade (2016–2025). The data reveal a notable variation in research productivity throughout the study period, with 2016 recording 38 articles, followed by a slight decline to 33 articles in 2017, representing the lowest value during the decade. From an analytical perspective, the time period can be divided into two main phases: the first phase (2016–2020) was characterized by limited fluctuations and a gradual increase from 38 to 60 articles; whereas the second phase (2021–2025) experienced accelerated and sustained growth, with the number of articles jumping from 84 in 2021 to 137 in 2025. This represents a cumulative increase of approximately 315% from the lowest point in 2017 to 2025. A slight deviation was observed in 2023 when the number dropped to 103 articles compared to 104 in the previous year. This dynamism indicates continuous and growing academic interest in this research field, which may reflect the rising awareness of the importance of integrating mental health and physical activity in both scientific and practical spheres.

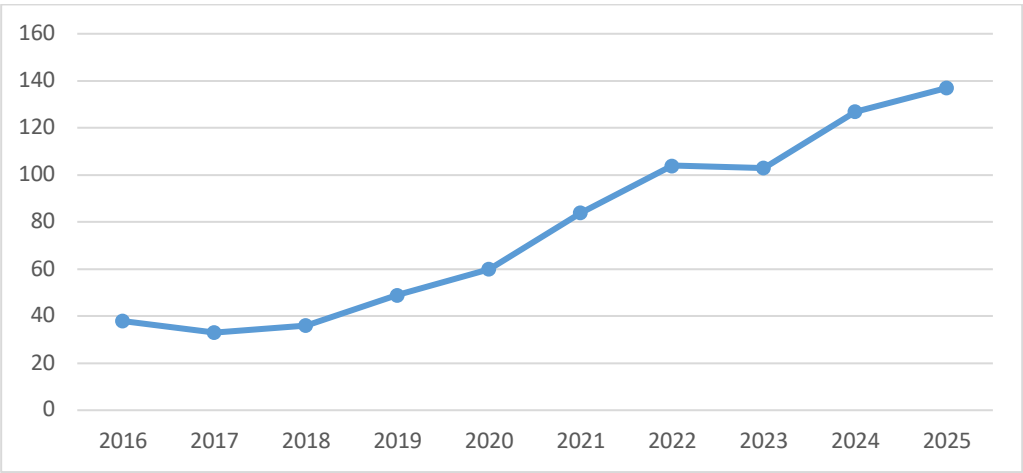


Figure 2. Temporal Distribution of Scientific Articles in the Field of Mental Health and Physical Education (2016-2025)

Leading Scientific Journals

Table 3 presents the five most prominent journals within the study sample that demonstrate direct relevance to the intersection of mental health, physical education, and children. The data reveal notable differences in research output and citation impact across these outlets. *Child Care Health Dev* led in total citations (187) across six publications, reflecting its significant role in disseminating research on children's health and developmental outcomes. *Journal of School Health* ranked second in both publication volume (7 articles) and total citations (147), with its most cited article directly addressing the impact of physical education on children's daily physical activity levels (Mooses et al., 2017), underscoring the journal's alignment with the core themes of this study. *Child Care in Practice* contributed three publications with a combined 98 citations, with its most cited article examining barriers to outdoor play in early childhood education settings (Sandseter, 2020), highlighting the importance of physical play opportunities for children's well-being.

European Physical Education Review and Journal of Teaching in Physical Education each contributed three publications, representing the most specialised outlets dedicated exclusively to physical education pedagogy and practice. While their total citation counts were comparatively lower (60 and 35, respectively), their focused scope ensures targeted dissemination of research directly applicable to physical education settings. The publisher landscape is led by Wiley, which publishes two of the five journals (Journal of School Health and Child Care Health Dev), followed by SAGE Publications, Informa UK Limited, and Human Kinetics, each maintaining a specialised portfolio in health and education research.

Table 3. Most Relevant Journals in the Study Sample Related to Physical Education and Children's Health				
Journal	Tp	Tc	The Most Cited Article	Publisher
J Sch Health	7	147	Physical Education Increases Daily Moderate to Vigorous Physical Activity and Reduces Sedentary Time (Moose et al., 2017)	Wiley
Child Care Health Dev	6	187	A support programme for caregivers of children with disabilities in Ghana: Understanding the impact on the wellbeing of caregivers (Zuurmond et al., 2019)	Wiley
Child Care Pract	3	98	Barriers for Outdoor Play in Early Childhood Education and Care (ECEC) Institutions: Perception of Risk in Children's Play among European Parents and ECEC Practitioners (Sandseter, 2020)	Informa UK Limited
Eur Phys Educ Rev	3	60	Physical education in a post-COVID world: A blended-gamified approach (Blain et al., 2022)	SAGE Publications
J Teach Phys Educ	3	35	A Systematic Review Investigating the Effects of Implementing Game-Based Approaches in School-Based Physical Education Among Primary School Children (Yan et al., 2023)	Human Kinetics
Tp = Total Publications; Tc = Total Citations.				

Geographic Distribution of Scientific Production

The figure illustrates the geographic distribution of scientific publications in the fields of mental health and physical education according to the corresponding author's country, distinguishing between single-country publications (SCP) and multiple-country publications (MCP). The data reveal a clear concentration of scientific output in a limited number of countries, with the United States leading the list with approximately 190 publications, representing nearly double the output of the United Kingdom (100 publications), which ranks second, followed by China (90 publications), Australia (60 publications), and Canada (50 publications). Together, these top five countries account for approximately 71% of the total sample, with the remainder distributed across other countries. Regarding patterns of research collaboration, the findings indicate the dominance of single-country publications in the overall scientific output, with their proportion ranging between 70% and 80% in most leading countries, while multiple-country publications represent a modest but significant proportion ranging between 15% and 30%.

These patterns reflect a dual reality characterised by the strength of independent research infrastructure in developed countries and the growing awareness of the importance of international research partnerships. From a geographical perspective, a clear dominance of English-speaking countries (the United States, the United Kingdom, Australia, and Canada) over the overall scientific output is observed, with China emerging as a rising research power, reflecting increasing investments in scientific research. These distributions point to a wide research gap between developed and developing countries, which calls for concerted international efforts to enhance research capacities in less productive regions and to encourage cross-border research partnerships. The remaining publications are distributed across other countries.

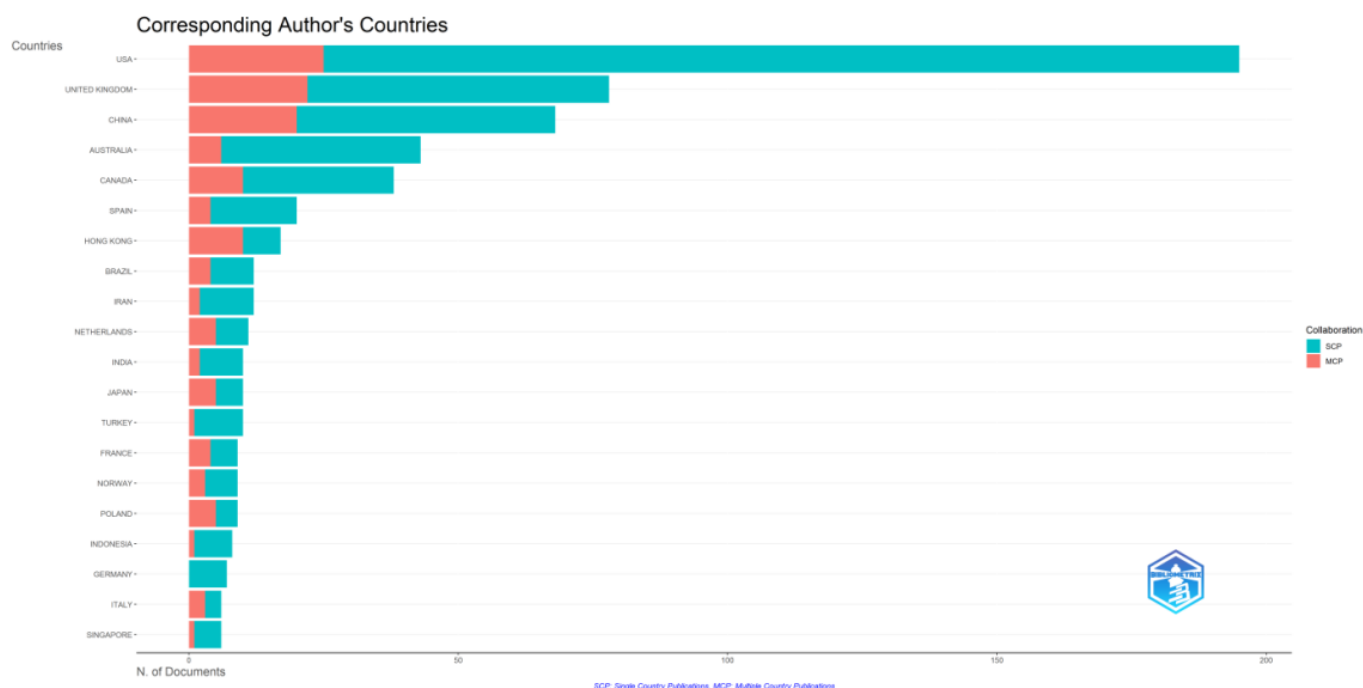


Figure 3. the geographic distribution of scientific publications in the field of mental health and physical education according to the corresponding author's country

Global Geographic Distribution of Scientific Production

The world map illustrates the geographic distribution of scientific production in the field of mental health and physical education, utilizing colour gradations ranging from light to dark blue to indicate the varying levels of research activity. The visual representation reveals a clear concentration of scientific output in the Northern Hemisphere, particularly in the United States, which dominates the global research landscape with its distinctive dark blue shading. Several countries, including the United Kingdom, Australia, China, Canada, and India, follow at a moderate level, while vast portions of the world appear in gray, indicating the absence or limited research contributions in those regions. These geographic distributions reflect profound structural disparities in research infrastructure, academic funding, and institutional capacity across different regions of the world. The map prominently highlights the wide research gap between developed and developing countries, particularly in Africa, South America, and the Middle East. This necessitates coordinated international efforts to enhance research capabilities and encourage cross-border scientific partnerships to achieve equitable opportunities in scientific knowledge production.

Country Scientific Production

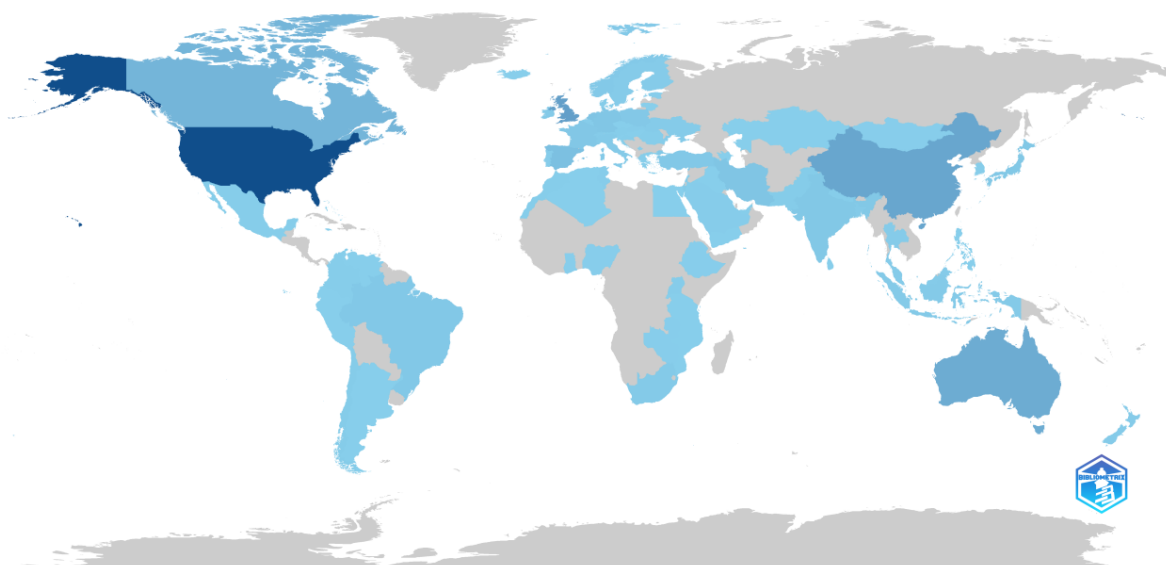


Figure 4. Global Geographic Distribution of Scientific Production in Mental Health and Physical Education

Scientific Impact of Countries

The figure illustrates the ranking of the top ten most-cited countries in the field of mental health and physical education, revealing substantial disparities in scientific impact as measured by citation counts. The United States leads the list with approximately 3,500 citations, advancing with a notable margin over the United Kingdom (approximately 2,000 citations), which ranks second. China occupies the third position with approximately 1,000 citations, followed by Canada (~900) and Australia (~600). These data indicate a clear dominance of English-speaking countries in the landscape of scientific citations, as the United States, the United Kingdom, Canada, and Australia collectively command the largest share of scientific impact in the field. Notably, Hong Kong appears in the sixth position (~500 citations), outperforming several major European countries, which may reflect the distinctive research orientations in the Asia-Pacific region. The data reveal a wide gap between countries with high scientific impact and the United States, where the latter's citation count amounts to nearly double that of its British counterpart and 17 times that of Spain, which ranks tenth. These distributions reflect the cumulative knowledge and established academic reputation of research institutions in developed countries, as well as the role of English as a global scientific medium in the dissemination and circulation of scientific knowledge.

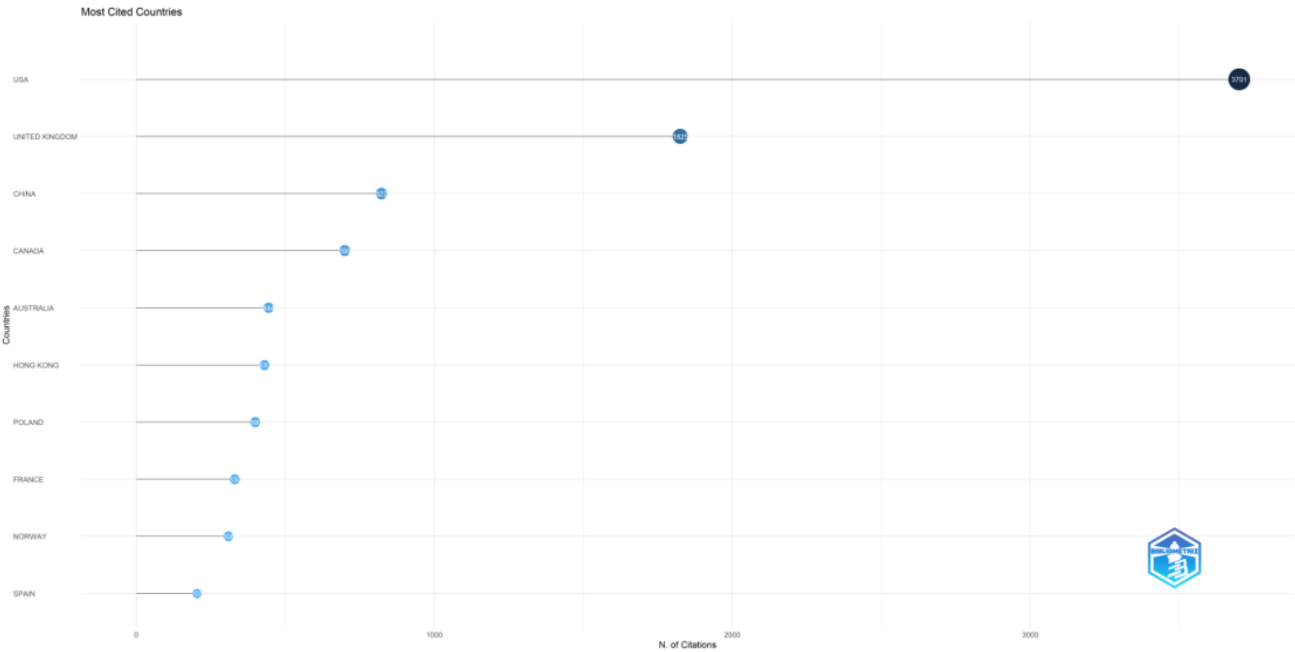


Figure 5. Top 10 Most Cited Countries in Mental Health and Physical Education

Research Productivity of Academic Institutions

The figure illustrates the evolution of scientific production for five leading academic institutions in the field of mental health and physical education over a full decade (2016–2025). The data reveal notable disparities in the research growth patterns among the studied institutions. While most institutions began with modest levels of scientific production in 2016, The University of Medical Sciences experienced a sharp qualitative leap around 2021, with its output rising from approximately four articles to approximately 45 articles within one year, thereby topping the list of most productive institutions with approximately 50 articles in 2025. This sudden surge likely reflects a strategic shift in research priorities or substantial investment in research infrastructure. Conversely, University College London achieved continuous and accelerated growth throughout the study period, reaching approximately 41 publications by 2025. The University of California stands out as the only institution that commenced tangible scientific production in 2016 (~5 articles), indicating its early leadership and accumulated expertise in this research field, reaching approximately 35 articles in 2025. The data also highlight the growing role of the University of Nottingham, which began publishing only in 2020 but achieved remarkable growth, reaching 27 articles in 2025. These distributions underscore the importance of sustained investment in research infrastructure and academic cadres to enhance scientific productivity and achieve a lasting impact in emerging research domains.

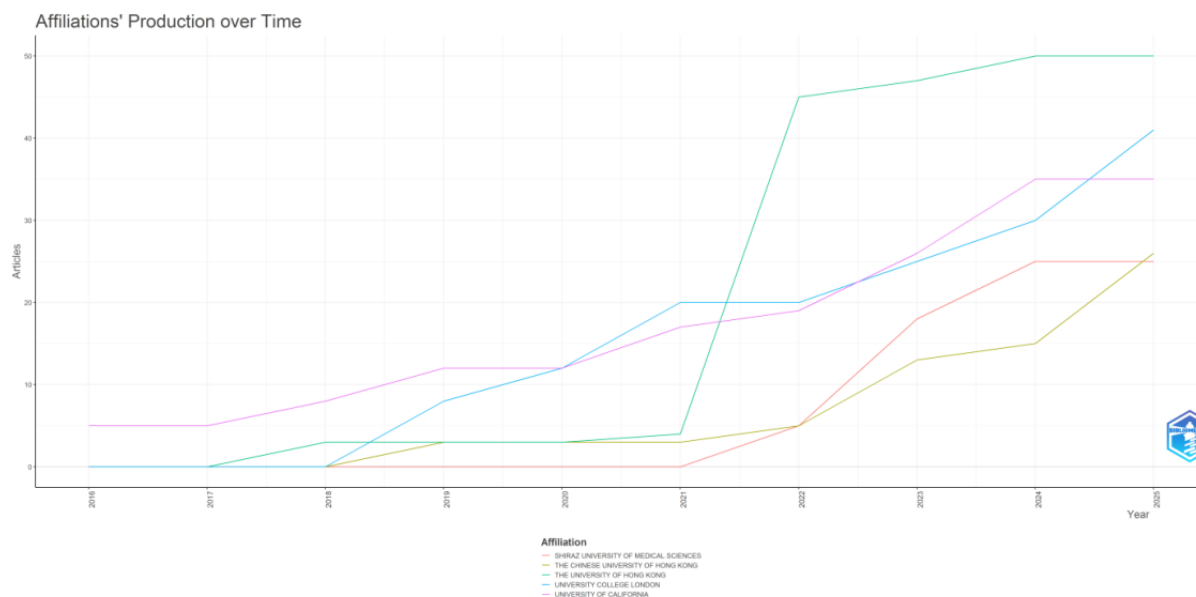


Figure 6. Evolution of Scientific Production of Leading Academic Institutions in Mental Health and Physical Education (2016-2025)

Bibliometric Analysis of Keywords

The figure presents a network map of co-occurrence relationships among the most frequent keywords in the field of mental health and physical education using VOSviewer software. The map reveals an interconnected conceptual structure distributed across four main clusters, each represented by a distinct colour according to the strength of the association and co-occurrence. "Mental health" emerged as the central node, larger in size and more extensively connected to other concepts, confirming its position as a core topic around which various research themes revolve. The green cluster highlights concepts related to physical health, quality of life, resilience, and adverse childhood experiences, while the red cluster focuses on the impact of the COVID-19 pandemic on education and well-being, reflecting the research shift prompted by the global health crisis. The blue cluster demonstrates a clear focus on young age groups (children and adolescents), psychological conditions (anxiety and depression), and physical activity, whereas the yellow cluster specializes in autism and parents of children with autism. The density of connections between concepts indicates the growing cognitive integration between the fields of mental health and physical education, where concepts related to physical activity and education intersect with psychological and social concepts in a complex web of relationships, reflecting the multidisciplinary nature of this research domain.

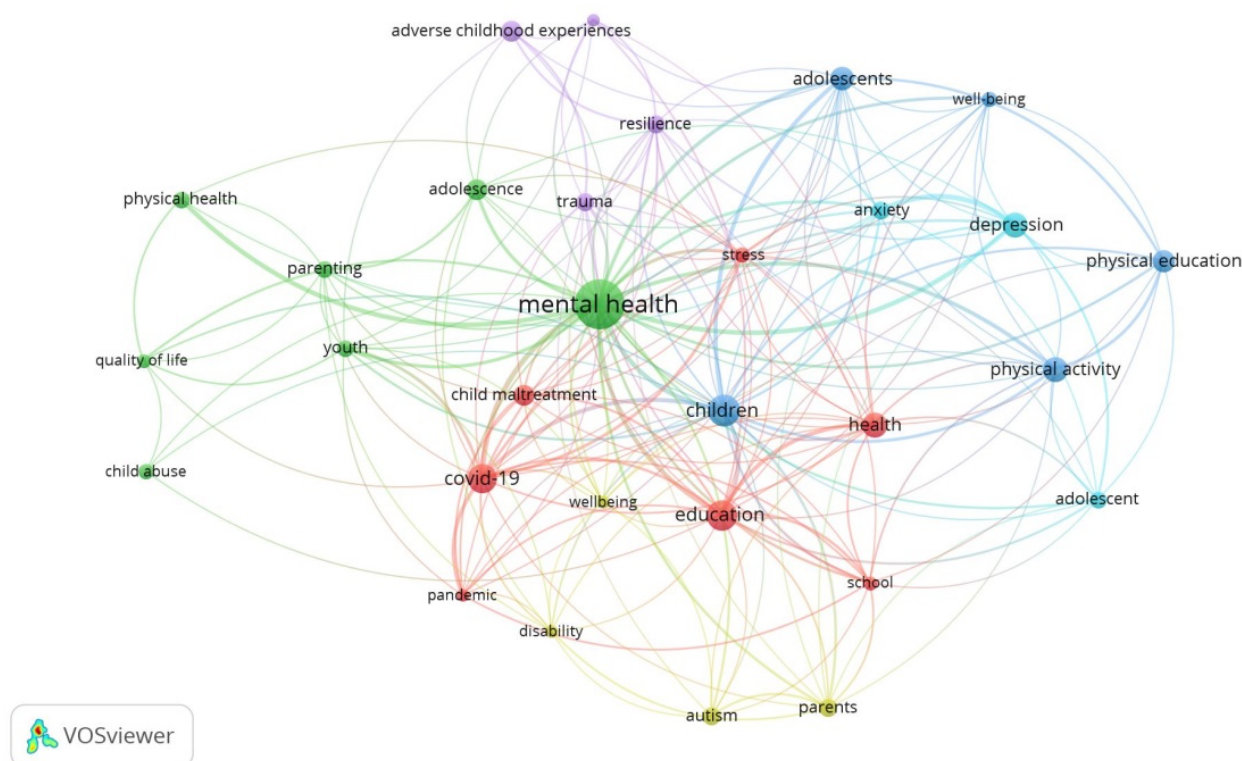


Figure 7. Conceptual Network Map of the Most Frequent Keywords in Mental Health and Physical Education Research

Cognitive Flow Map

The figure presents a Sankey diagram illustrating the network of relational connections across three sequential levels: source journals (SO) as the starting point, author countries (AU_CO) as an intermediate station, and research topics (DE) as the endpoint. The structural design of the diagram reveals interconnected cognitive flows linking publishing entities, researching countries, and research themes, where the width of the lines corresponds to the volume of contributions and associations between these levels. Regarding scientific journals, sources vary between periodicals specialising in mental health (Mental Health & Physical Activity, Journal of Affective Disorders), social and developmental sciences (Social Science & Medicine, Journal of Child and Family Studies), and education journals (Education Sciences, Journal of School Health), reflecting the multidisciplinary nature of this research field. In terms of geographic distribution, the United States leads the landscape with extensive flows toward most research topics, followed by the United Kingdom, Australia, China, and Canada, while other countries, such as Spain, Hong Kong, the Netherlands, and Singapore, maintain more focused specialised flows.

Research topics are distributed across main axes, including mental health, children, education, depression, and physical activity, with the notable prominence of COVID-19 reflecting the scientific community's response to the global pandemic. The flow map highlights the integration between the fields of mental health and physical education through the intersection of topics related to physical activity and education with psychological and social topics, confirming the interdisciplinary nature of this research domain and the importance of international collaboration in the production of scientific knowledge.

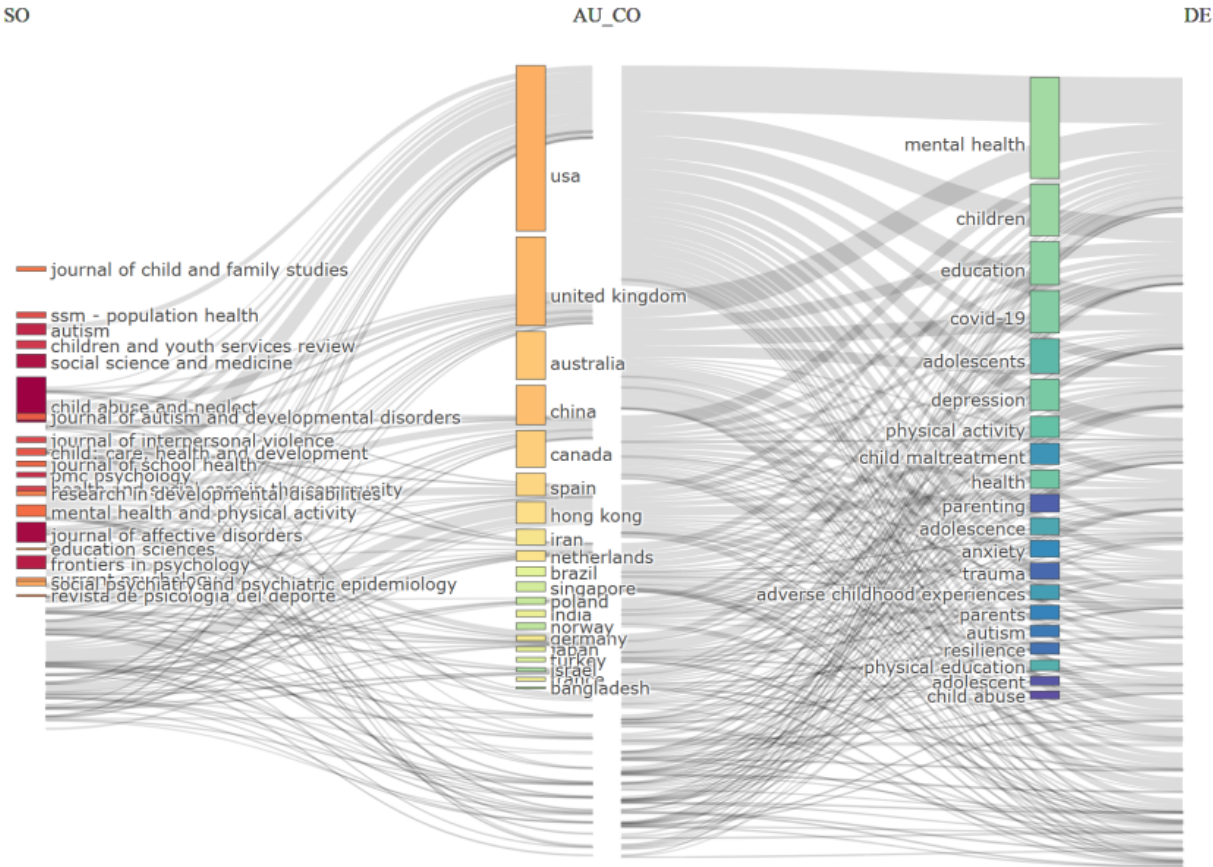


Figure 8. Structural Flow Diagram of Relationships between Scientific Journals, Author Countries, and Research Topics in Mental Health and Physical Education

Discussion

The present bibliometric study provides a comprehensive analysis of the scientific literature on mental health and physical education over a decade (2016–2025), revealing significant patterns in publication trends, geographic distribution, scientific impact, and thematic structures. The findings offer valuable insights into the evolving landscape of this interdisciplinary field and have important implications for researchers, practitioners, and policymakers. Temporal analysis revealed a remarkable growth trajectory in scientific publications, with the lowest point recorded in 2017 (33 articles), followed by a cumulative increase of approximately 315% to 2025. This substantial expansion aligns with global trends in mental health research, which have witnessed unprecedented growth in recent years (Lund, 2020; Ranta et al., 2025). The observed acceleration during the study period deserves particular attention, as it coincided with the global COVID-19 pandemic, which heightened awareness of the critical interplay between physical activity and mental health (Marashi et al., 2021; Puccinelli et al., 2021).

This growth can be attributed to several converging factors: the epidemic rise in mental health concerns (Cybulski et al., 2021), and the increasing recognition of physical activity as a protective factor against psychological distress (Fu et al., 2025; Ma & Mumtaz, 2025; Rahmati et al., 2024). These findings are consistent with those of previous bibliometric analyses in related fields. Numerous studies on physical activity and mental health have reported similar growth patterns, attributing this trend to heightened public health awareness and policy emphasis on preventive approaches to mental health care (Sabe et al., 2022; Zhang et al., 2024). An analysis of leading

scientific journals reveals a multifaceted publication landscape characterized by diverse disciplinary orientations. It is worth noting that the journals identified through bibliometric analysis were subject to manual screening to ensure direct relevance to the sports and physical education domain, as automated retrieval may include high-impact journals with tangential connections to the research focus. "Frontiers in Sports and Active Living" emerged as the dominant outlet in terms of publication volume and total citations, reflecting the broader trend toward open-access publishing and its associated citation advantages (Huang et al., 2024).

The journal's prominent position underscores the growing acceptance of interdisciplinary research at the nexus of sports, mental, and public health. However, the findings indicate that publication volume does not necessarily correlate with scholarly impact, as measured by the Cite Score. The Journal of Teaching in Physical Education had the highest CiteScore (4.0), suggesting that specialized journals focusing on pedagogical applications may achieve a greater per-article impact than broader disciplinary outlets. The presence of "Revista de Psicología del Deporte" among the leading journals, despite its lower Cite Score, highlights the importance of regional and non-English language publications in the global knowledge ecosystem. This finding corroborates earlier studies emphasizing that language barriers and regional focus can influence citation metrics without necessarily reflecting research quality (Di Bitetti & Ferreras, 2017; Hannah et al., 2025). The geographic analysis reveals a pronounced concentration of scientific production in a limited number of countries, with the United States occupying a dominant position across multiple metrics. This finding is consistent with the broader patterns of scientific productivity observed in bibliometric studies across various disciplines. The United States' leadership position, with approximately 190 publications representing nearly double the output of the United Kingdom, reflects the country's substantial investment in health-related research and its well-established academic infrastructure (Tóth et al., 2023).

The dominance of English-speaking countries (the United States, the United Kingdom, Australia, and Canada) raises important questions about linguistic and structural barriers in scientific knowledge production. The widespread use of English as the lingua franca of scientific publishing undoubtedly contributes to the visibility and citation of research from these countries (Di Bitetti & Ferreras, 2017, 2017). However, this dominance may also reflect historical patterns of academic development, research funding availability, and institutional support systems that have favored these nations. China's emergence as the third-largest contributor represents a significant shift in the global research landscape. This finding aligns with broader trends documenting China's rapid ascent in scientific publishing across multiple disciplines (Mikhaylov et al., 2025). The substantial Chinese contribution to this field may reflect national policy priorities emphasizing physical education and public health, as well as increased international collaboration and publication in English-language journals (Chen et al., 2020). The collaboration patterns, revealing a dominance of single-country publications (70-80%) over multiple-country publications (15-30%), warrant careful consideration. While this ratio indicates strong national research capacities in leading countries, it also suggests potential untapped opportunities for international collaboration.

Citation analysis revealed a pronounced hierarchical structure in scientific impact, with the United States commanding approximately 3,500 citations, nearly double that of the United Kingdom and 17 times that of Spain. This citation concentration mirrors publication distribution patterns, suggesting a Matthew effect in scientific recognition, whereby established research centers attract disproportionate attention. Several factors may explain the United States' citation dominance. First, the sheer volume of publications from American institutions increases the probability of being cited. Second, the prominence of American researchers on editorial boards and their networks may influence citation practices. Third, research topics favored by American institutions may align more closely with global research priorities, enhancing their relevance and citability (Albarrán et al., 2010; Leydesdorff & Wagner, 2009). An analysis of academic institutional productivity reveals diverse growth trajectories that illuminate different strategic approaches to research development. The University of Medical Sciences' dramatic surge around

2021 represents a compelling case of institutional transformation. Such rapid growth typically reflects strategic decisions, including targeted recruitment, research priority setting, and substantial infrastructure investment. This pattern suggests that institutional research productivity can be significantly enhanced through deliberate and strategic interventions. University College London's sustained growth trajectory offers a contrasting model characterized by consistent investment and gradual accumulation of research capacity.

This pattern aligns with traditional models of academic development, where reputation and expertise build incrementally over time. To ensure that the 689 included documents were adequately synthesized, we utilized keyword co-occurrence analysis to map the conceptual architecture of the field. This approach allowed us to extract the main themes, findings, and gaps emerging from the selected literature. Keyword co-occurrence analysis provides crucial insights into the conceptual architecture of a field. The emergence of "mental health" as the central node confirms its position as the integrative concept around which the field's discourse revolves. This centrality reflects the field's identity as fundamentally concerned with psychological wellbeing, even as it maintains strong connections to physical activity and education. The four-cluster structure reveals the multidimensional nature of research at the intersection of mental health and physical education. The green cluster's focus on physical health, quality of life, and resilience highlights the field's engagement with positive psychology and salutogenic approaches to health. The red cluster centers on COVID-19 and pandemic-related themes, documenting the field's responsiveness to contemporary health challenges and its role in addressing crisis-related concerns.

The blue cluster demonstrates a clear focus on young age groups (children and adolescents), anxiety, and depression, underscoring the field's particular relevance to youth populations. Despite the comprehensive nature of the 689 analyzed documents, a notable research gap emerges regarding the standardization of assessment tools for children's mental health across different physical education settings. Furthermore, while the literature extensively covers general anxiety and depression, there is a discernible gap in studying the impact of physical education on specific neurodevelopmental conditions in children. The central position of the United States in the author country layer, with extensive flows toward diverse research topics, reflects its role as a knowledge hub in this domain. However, the visualization also reveals specialized flows from other countries, suggesting that different national research communities may contribute distinct perspectives and priorities to global discourse. The research topic distribution, spanning mental health, children, education, depression, physical activity, and COVID-19, confirms the breadth of the themes addressed within this field. The prominence of COVID-19 serves as a reminder of how external events can rapidly reshape research priorities, while the enduring focus on children and education reflects the field's core concerns.

Conclusion

This bibliometric study reveals substantial growth in mental health and physical education research from 2016 to 2025, with publications increasing by approximately 315%, driven by the COVID-19 pandemic and heightened awareness of the physical activity-mental wellbeing nexus. The United States and other English-speaking countries dominate the research landscape, highlighting significant geographic disparities that necessitate concerted efforts to enhance research capacity in underrepresented regions. The field demonstrates a mature, multidisciplinary structure centered on mental health while integrating diverse themes related to youth populations, physical activity, and education. Future research should prioritize international collaboration, practitioners should implement evidence-based school interventions, and policymakers should invest in research infrastructure in developing regions to foster a more inclusive global research ecosystem.

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