

Mental Health Children during Pandemic Covid 19: A Bibliometric Study

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Abstract

The coronavirus 2019 (Covid- 19) pandemic offers incredible challenges to child and adolescent health because the school closure and the impracticability of activities outside the house have been challenging for parents. When schools are closed, they lose an anchor in life, and their symptoms could relapse; these unstoppable circumstances, which are beyond average experience, are primary to stress, anxiety, and a feeling of helplessness in all. This research aimed at identifying, analysing, and examining children's mental health during pandemic articles published in several reputable international journals issued in the 2019-2020 timeframe, which was led using bibliometric studies. This research hires a bibliographic study using systematic and explicit mapping methods. The research was conducted using a 4-stages systematic mapping method: (1) searching for articles using the Publish or Perish application in the Scopus database, (2) classifying the articles for the bibliometric analysis, (3) checking and completing the metadata of those articles, and (4) conducting bibliometric analysis using VOSviewer application. The bibliometric analysis produced four findings, as follows: (1) the trend of mental health children's publications 2019-2020; (2) the ten most contributive journals has published; (3) the ten most cited articles has produced 170 citations; (4) the five highest order of author keywords most widely used in mental health children's articles were mental health, children, human, school, and covid- 19. Children's mental health can be concluded as the term of research is currently popular among researchers.

Keywords: children, covid-19, mental health, pandemic

Introduction

The coronavirus 2019 (Covid- 19) pandemic has caused extreme changes in daily life and routine activities, contributing to significant health, economic, financial, and social consequences (Bhatia, 2020; Jörg M Fegert et al., 2020; Russell et al., 2020). In March 2020, the World Health Organization (WHO) confirmed COVID-19 a pandemic, and there were more than 4 million infections inveterate in over 180 countries and regions by May 2020 (Zhao et al., 2020). At this time, the central interventions still mainly aim to limit the mobility of possible or definite infected persons through issuing travel limitations, arresting isolations and isolation methods, and marking out contacts of people with known infections because there is still no vaccine for this infectious disease (Chen et al., 2020; Zhou et al., 2020). This situation offerings incredible challenges to child and adolescent health because the school closure and the impracticability of activities outside the house have been challenging for parents too who had to take care of their children full-time, trying to keep them busy and helping them in learning while working from home (Caffo et al., 2020; Dvorsky et al., 2020; J M Fegert, 2020).

School habits are essential coping mechanisms for young people with mental health issues. When schools are closed, they lose an anchor in life, and their symptoms could relapse; these unstoppable circumstances, which are beyond ordinary experience, are primary to stress, anxiety, and a feeling of helplessness in all (Lee, 2020; Singh et al., 2020). It has been shown that compared to adults, this pandemic may continue to have increased long-term adverse consequences on children and adolescents (Shen et al., 2020). Children in elementary schools were perhaps too young to comprehend why this new reality took place thoroughly, and the transition and adaptation into this new way of living and receiving an education were emotionally distressing to many families, especially children (Levinson et al., 2020). School closures may be related to mental health problems among students due to an extended state of physical isolation from peers, teachers, extended

family, and community networks (Zhang et al., 2020). Other studies indicate that social interaction is key to the mental and physical development of young children, suggesting that inadequate social interaction experiences could lead to mental health-related problems such as anxiety and depression (Fontenelle-Tereshchuk, 2020; Matthews et al., 2015).

The effect of physical distancing on children's mental health is so significant that more intense research is needed on the impact of a pandemic on children's mental health. Therefore, researchers tried to trace the extent of studies on children's mental health during the Covid-19 pandemic. Because as far as the researcher knows, research with a bibliometric approach with this theme does not yet exist, the researchers believe that bibliometric study is significant to map bibliography information of some particular field (Fernández Batanero et al., 2019). Therefore, this article aims to complement other essential aspects of children's mental health during pandemic covid-19 research map to obtain a more comprehensive mapping.

In contrast to previous research, this research focuses on a bibliometric analysis of mental health children during pandemic covid-19 by referring to four aspects, namely publication trends, the most contributive journals, citation patterns, author keywords. Therefore, the research is conducted based on the following problem formulation, so it is hoped that this research can answer the following research questions: Q1: What is the trend of publication in 2019-2020 mental health children's articles? Q2: Which journals have published the most articles about mental health children in 2019-2020? Q3: What is the citation pattern for 2019-2020 mental health children's articles? Q4: What were the author keyword trends in 2019-2020 mental health children's articles?

Research Methodology

This research hires a bibliographic study using systematic and explicit mapping methods (Fernández Batanero et al., 2019; Hudha et al., 2020; Julia, 2020). The most common method for gauging the effect of any term or trend is assessing different

databases (Levine-Clark & Gil, 2009). In the meantime, for the steps of bibliographic studies using four steps, consisting of (1) search procedures, (2) bibliographic filters, (3) complete bibliographies, and (4) bibliometric analysis (Julia, 2020).

For the extraction of data, a bibliographical search (computer-assisted direct consultation) in the following electronic database, Scopus. Scopus contains a far wider variety of products than other repositories (Salisbury, 2009; Shareefa & Darussalam, 2020), and it accounts for about 70% more publications than WoS (López-Illescas et al., 2008; Shareefa & Darussalam, 2020). The search for the scientific articles took into account the following articles: a) published between January 2019 to October 2020; b) the search descriptors appeared on the title, keywords,

or abstract; c) published in English d) included within the area of mental health children during pandemic COVID 19. As for the exclusion criteria, the following were not studied: a) publications whose texts were not complete; b) non-original scientific articles (abstracts, theses, dissertations, books, conference proceedings, or technical reports) and published in non-periodical publications; c) studies on high abilities outside the mental health children context, d) did not belong to the 2019–2020 period and e) articles found to be repeated in the databases.

The preliminary search results using the PoP Software led to 32 bibliographies sorted into 32 selected bibliographies. Table 1 presents the complete bibliographies resulting from the Scopus Literature Search searches.

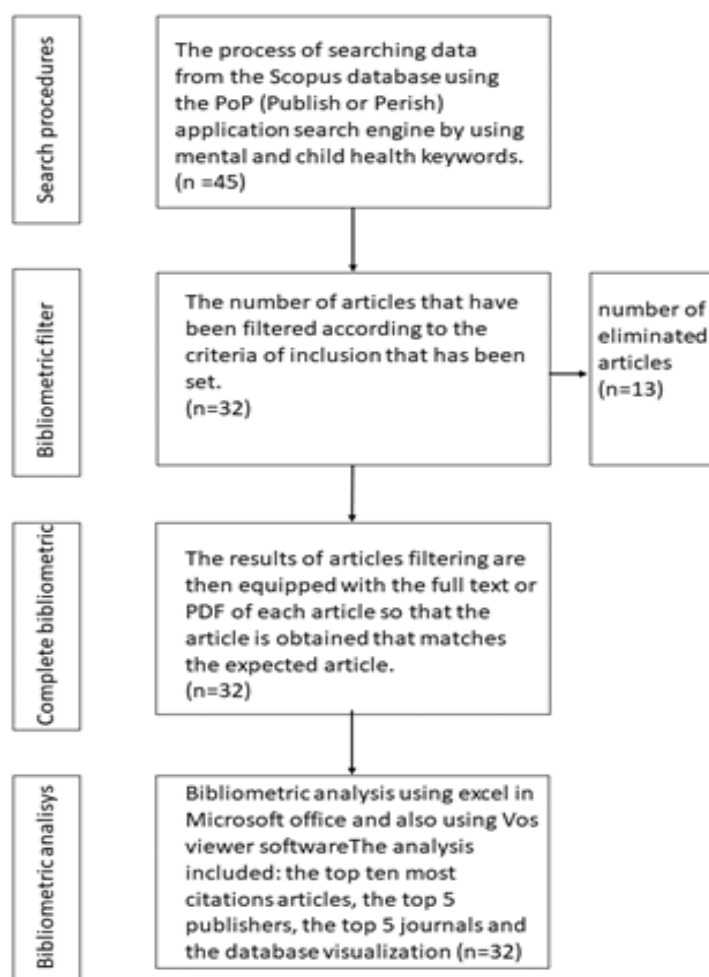


Figure 1 Flowchart of Bibliometric studies

Results

4.1 Publications and citation structures

The output is analysed based on the PoP software through the VOSviewer software to determine the most frequently appeared keywords. However, the number of the most frequently appearing keywords is adjusted to the needs of the data collection and analysis. VOSviewer is used to visualize bibliometric maps. This software shows bibliometric

mapping on three different visualizations namely, tissue visualization, overlay visualization, and density visualization. There were 32 articles were grouped from the Scopus database. This data has been verified well on the Scopus database from 2019-2020 with the keyword 'mental health children during pandemic covid 19'. The complete results of metric data comparison from initial search and enhanced search can be seen in Table 1.

Table 1 Comparison metrics

Metrics data	Article	Note	Review	Editorial	Letter
Source	Mental health children during pandemic covid 19				
Publication year	2019-2020				
Paper	13	2	9	5	3
Citation	26	70	65	3	5
h_index	5				
g_index	12				
hI_norm	5				
hI_annual	5.00				

The researcher tries to present the most relevant contributions in this study. The step taken is to take 32 articles with the keyword "mental health children during pandemic covid 19" which has the highest citation score (top 10 articles cited). Obtained results as in Table 2.

Table 2 Top ten cited articles

No	Publication year	Author	Title	Journal	Cites	Publisher
1	2020	Liu, J.J., Bao, Y., Huang, X., Shi, J., Lu, L.	Mental health considerations for children quarantined because of COVID-19	The Lancet Child and Adolescent Health	69	Elsevier
2	2020	Fegert, J.M., Vitiello, B., Plener, P.L., Clemens, V.	Challenges and burden of the Coronavirus 2019 (COVID-19) pandemic for child and adolescent mental health: A narrative review to highlight clinical and research needs in the acute phase and the long return to normality	Child and Adolescent Psychiatry and Mental Health	36	BioMed Central

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3	2020	Loades, M.E., Chatburn, E., Higson-Sweeney, N., Reynolds, S., Shafran, R., Brigden, A., Linney, C., McManus, M.N., Borwick, C., Crawley, E.	Rapid Systematic Review: The Impact of Social Isolation and Loneliness on the Mental Health of Children and Adolescents in the Context of COVID-19	Journal of the American Academy of Child and Adolescent Psychiatry	13	Elsevier Inc
4	2020	Duan, L., Shao, X., Wang, Y., Huang, Y., Miao, J., Yang, X., Zhu, G.	An investigation of mental health status of children and adolescents in china during the outbreak of COVID-19	Journal of Affective Disorders	8	Elsevier B.V.
5	2020	Imran, N., Zeshan, M., Pervaiz, Z	Mental health considerations for children & adolescents in covid-19 pandemic	Pakistan Journal of Medical Sciences	6	Professional Medical Publications
6	2020	J. Cuartas	Heightened Risk of Child Maltreatment Amid the COVID-19 Pandemic can Exacerbate Mental Health Problems for the Next Generation	Psychological Trauma: Theory, Research, Practice, and Policy	5	American Psychological Association Inc
7	2020	Wade, M., Prime, H., Browne, D.T	Why we need longitudinal mental health research with children and youth during (and after) the COVID-19 pandemic	Psychiatry Research	5	Elsevier Ireland Ltd
8	2020	Stark, A.M., White, A.E., Rotter, N.S., Basu, A	Shifting From Survival to Supporting Resilience in Children and Families in the COVID-19 Pandemic: Lessons for Informing U.S. Mental Health Priorities	Psychological Trauma: Theory, Research, Practice, and Policy	4	American Psychological Association Inc.
9	2020	Witt, A., Ordóñez, A., Martin, A., Vitiello, B., Fegert, J.M.	Child and adolescent mental health service provision and research during the Covid-19 pandemic: Challenges, opportunities, and a call for submissions	Child and Adolescent Psychiatry and Mental Health	4	BioMed Central Ltd.

10	2020	Cui, Y., Li, Y., Zheng, Y., Chinese Society of Child & Adolescent Psychiatry	Mental health services for children in China during the COVID-19 pandemic: results of an expert-based national survey among child and adolescent psychiatric hospitals	European Child and Adolescent Psychiatry	3	Springer
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The top 5 publishers who publish articles on this topic are presented in Table 3.

Table 3 Top 5 publishers who publish mental health children topic

No	Publisher	Articles
1	Elsevier	11
2	NLM (Medline)	4
3	BioMed Central Ltd.	3
4	Springer	3
5	American Psychological Association Inc	2

Journals that have relevant articles are presented in Table 4.

Table 4 Top 5 journals that have relevant articles on mental health children topic

No	Journal	Total articles	Cites
1	Child and Adolescent Psychiatry and Mental Health	3	40
2	Psychiatry Research	3	7
3	Journal of the American Academy of Child and Adolescent Psychiatry	2	13
4	Psychological Trauma: Theory, Research, Practice, and Policy	2	9
5	Journal of Indian Association for Child and Adolescent Mental Health	2	1

The data network visualization display on Scopus data related to the keyword ‘ mental health children during pandemic covid 19’. Refined in search can be seen in Figure 2, and density visualization in Figure 3.



Figure 2 Network visualization on the Scopus database

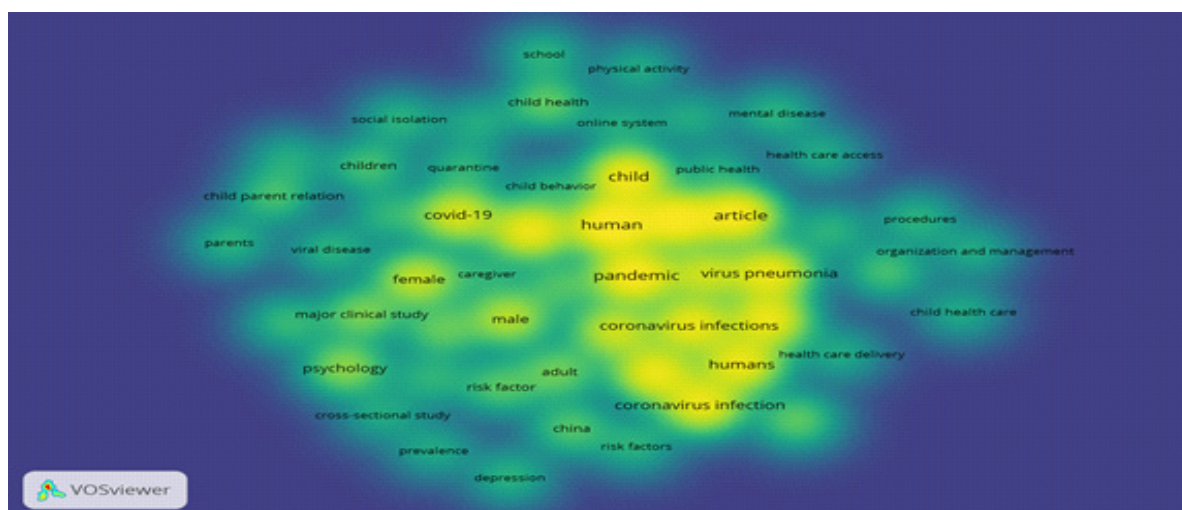


Figure 3. Visualization of density in GS data base

4.2 Authors and co-authorship relations

Analysis of joint authors and networks related to collaboration patterns between individuals can be seen in Figs. 3. In this network, each node represents the author in his writing connection. This analysis can integrate many dimensions to visualize groups and associations between dimensions or time changes. For example, figure 4 shows an analysis of the author's network from the year the authors were together. There was no relationship between them.



Figure 4 . Visualization of overlay Authors and co-authorship relations on the Scopus database

Discussion and Conclusion

Nearly a year, the Covid-19 pandemic has attacked human civilization in the world. Along with the pandemic, related scientific studies are certainly needed. Scientific articles with the keyword 'mental health during the Covid-19 pandemic' have received the attention of scientists to be researched or discussed scientifically according to their scientific background. In just one year, in 2019-2020, there are 32 articles related to this keyword, published in journals that have an excellent international reputation in the form of articles, notes, reviews, editorials, and letters. There are several reasons why this topic is interesting to research. There are more than 2.2 billion children in the world who constitute approximately 28% of the world's population. Those aged between 10 to 19 years make up 16 % of the world's population (Unicef, 2019). COVID-19 has impacted the lives of people worldwide, including children and adolescents, in an unprecedented manner. Throughout the world, essential modus of prevention from COVID- 19 infection has been isolation and social distancing strategies to protect from the risk of infection (Shen et al., 2020). There are many explanations to be worried about because extended school closure and home quarantine during pandemic might negatively affect children's physical and mental health. Maybe a more vital but easily ignored issue is the mental impact on children and adolescents (Wang et al., 2020). Stressors in children and adolescents such as fear of infection, frustration and boredom, incomplete information, not being met with friends, and teachers, inadequate home space, inadequate supplies such as food, water, clothes, and disruption to family finances can lead to their extended mental health problems (Brooks et al., 2020). Mental health in children and adolescents is strongly influenced by the surrounding environment (such as schools and health care facilities), family (such as a parent, family members, and the economic state of the family), domestic violence and child maltreatment, and quarantine-associated risks (J M Fegert, 2020) This pandemic will undoubtedly affect all children and adolescents around the world, but of course, those who should get special

attention are children and adolescents at high risk, those whose parents are losing their jobs, low socioeconomic status, and children and adolescents with chronic diseases (Seppälä et al., 2020).

The most relevant contribution in this study is the number of citations. Based on table 2, the highest citations indexed by Scopus are articles from Liu,J.J et al. in 2020. This article discusses Mental health considerations for children quarantined because of COVID-19 (J. J. Liu et al., 2020). This article is cited in 69 research articles. She is a lecturer at Savaid Medical School, University of Chinese Academy of Sciences, Beijing, China, and she actively publishes his articles in the field of health and has more than 2000 articles published in Scopus with h- index 105 (Scopus, 2021). So, it is natural that the article is the most citation article by researchers around the world because reputable international authors write it and topics discussed relevant to other research topics.

Meanwhile, one publisher has the highest frequency of citation based on the data, namely Elsevier. In addition, the publisher who contributed the most articles to this study was also analyzed. In 32 articles published, 11 were published from significant publishers, namely Elsevier, followed by NLM 4 articles, Biomed Central 3 articles, Springer 3 articles, and American Psychological Association Inc 2 articles. An average of 1 article is published on this topic for other publishers. The top five publishers who published the most articles on mental health in children during the pandemic are reputable and listed in Scopus.

In addition to the number of articles per publisher, it is also analyzed based on the journal's relevance. The results were obtained in the top 4 journals that contain this topic. In addition, some journals have the most citations, namely Child and Adolescent Psychiatry and Mental Health. This shows that articles related to mental health children are scattered in specific journals, although there are other journals. For example, the journal shown in table 4 is a journal that has quartile one based on SJR (Scimago Journal and Country Rank) only one journal that has not been found in SJR that is possible because the journal has been removed from

the Scopus database in 2020 while previously it was still a reputable journal.

Analysis overlay visualization and density visualization are used to identify key themes in each study or scope of mental health. This result is done by measuring the co-occurrence of keyword pairs (Z. Liu et al., 2015). The analysis was made with the help of Vosviewer software. It can be identified that each. Based on VosViewer's visual analysis, the keyword Covid-19 is often associated with quarantine, child, child behavior, and relationships between children and parents in cluster 1 in red. The keyword blue is often associated with school, physical activity, and child health in the second cluster. At the same time, the third green cluster is often associated with infections and pandemics. In figure 2 describes what topics have been studied marked in yellow. The research topics that have been widely studied related to the keywords used are pandemic, child, pneumonia virus, and Covid-19 infection while; we can see also the topics that are still rarely studied are the relationship of children and parents, physical activity, access to health care facilities and depression. So based on that, we can analyze what topics need to be researched based on the lack of researchers discussing the topic, although overall research on the topic of mental health in children in the pandemic is still needed to overcome all problems arising from this pandemic.

Network analysis also allows identification of the author's authority (Bilik et al., 2020). Joint author analysis is a widely used bibliometric research technique that investigates authors conducting joint research from a particular field. VosViewer analysis based on collaboration between authors and mental health topics in children during the Covid-19 pandemic is still not found, this is likely because this topic is still new and the impact of this pandemic requires all citizens of the world to maintain physical distance so that research collaboration between researchers is still hampered.

Suggestion and limitation

This study has three limitations. First, this study is generally based on a limited set of keywords and potentially limited by the

narrow database (Scopus) used for article collection. Second, although this study uses formal software as tools (PoP software, VOSviewer, Mendeley, and Microsoft Excel), the subjective assessments of the author occur and still possibly lead to errors. Moreover, the last one, this bibliometric study, also has a short time for 2019-2020, so there may still be many articles that cannot be detected because of the pop year because 2020 is still running. Therefore, future studies are recommended to use a larger sample by expanding the time and the more accessible databases.

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