Bibliometric Mapping Analysis of the Cyberbullying Phenomenon Among Children

Laila Fatmawati[1], Haryanto[2]
[1,2]Universitas Negeri Yogyakarta

ARTICLE INFO

ABSTRACT

Cyberbullying has become a global problem. This phenomenon is not only a trend among teenagers, but has penetrated among children. The impact is felt so significantly by both perpetrators and victims of cyberbullying. The purpose of this study is to map the trend of the cyberbullying phenomenon among children over the past decade. Data search through data-based Scopus with keywords "cyberbullying" and "children", during 2014-2023. The results showed that searching for articles using keywords resulted in 1,001 articles from journals and conference papers only. The development of cyberbullying reality publications experienced the highest increase in 2019 by 14.23%. The largest subject areas are medicine and psychology. This provides an opportunity in the field of education, that the theme of cyberbullying and its impact on the field of education still needs to be deepened in research and publication.

Corresponding Author:
Laila Fatmawati
Universitas Negeri Yogyakarta
Email: lailafatmawati.2022@student.uny.ac.id

1. INTRODUCTION

The rapid progress of information technology has brought many impacts to every element of human life. Like a fused currency, technology brings both opportunities and risks to its users. The most commonly used form of technology is social media such as Facebook, Instagram, Twitter, and so on. Social media is a place for interaction in cyberspace that is easily accessible, getting information, life style, and culture from various countries in just one touch.

The ease of internet access in various locations can be felt. Nowadays people are so easy to get internet access, even in public spaces there are many that provide free wifi facilities. As many as 66% of children and adolescents in grades 4-9 have easy access to the internet online from their beds, to play games, search, chat with friends [1].

Here another risk lurks, namely the phenomenon of cyberbullying. Cyberbullying is an aggressive act that is carried out repeatedly and intentionally with the aim of frightening, intimidating, threatening, and doing unpleasant actions through digital media [2],[3],[4]. Cyber violence behavior can be done through telephone, email, chat, online social media [5]. The most frequent cases are related to emotional problems such as heartbreak, envy, intolerance, gangs, negative experiences in social welfare, reactive behaviour that is generally inappropriate [6].

The difference between cyberbullying and traditional bullying is the presence or absence of technological devices used, usually the perpetrator and victim are not face-to-face, the perpetrator cannot see the victim's

reaction directly. The role of the observer is more complex, the audience is very wide, and it is difficult to eliminate traces or escape [7].

The people who most often get cyber violence are teenagers. Adolescence marks the transition from childhood to adolescence. Its characteristics are that each likes to be in a situation, looking for identity, trying to be accepted by their group or environment. Some adolescents can pass their adolescence well, but not infrequently those who pass their adolescence darkly, one of which is getting a cyberbullying experience [8]. In the current development, cyberbullying has also spread among children. WHO defines children as people with an age range of 0-14 years [9].

There are two types of cyberbullying, namely direct bullying and indirect bullying. Direct bullying is physically related, for example involving property such as spreading viruses on files, verbal remarks on the phone or voice notes, non-verbal such as sending threatening pictures, and social such as blasphemy through online groups. Indirect bullying such as deceiving people with other people's identities (hackers), spreading gossip through online chat or email, defaming someone through polling sites [10].

The results of the study showed that 90% of the total respondents, totalling 137 people, had experienced cyberbullying either as victims, or just spectators. In addition, 70% of the victims had experienced cyberbullying one to two times within a month and 50% of the victims did not know the perpetrators [11]. Secondly, 89% of parent participants demonstrated knowledge of issues related to cyberbullying and 89% reported having no knowledge if their child had or had not been a victim of cyberbullying. In the study, participants involving adolescents aged 12-17 years with a grouping of 726 girls and 682 boys, showed that the perpetrators of cyberbullying were more male than female [5].

In Indonesia about 80% of the participants in the study had experiences of cyberbullying. Cyberbullying is a stressful life event for both perpetrators and victims. Research results in Indonesia also show that cyberbullying is also influenced by gender factors. Boys tend to be more dominant in cyberbullying than girls [9].

The phenomenon of cyberbullying needs special attention from parents and teachers. Parents should supervise their children's socialization in cyberspace, as well as provide time limits for gadget use. Meanwhile, teachers should provide open access to counselling and protection for students who experience cyberbullying crimes.

Various research results show that the phenomenon of cyberbullying is a social problem that is increasingly complicated and urgent to find solutions. To find the best solution, it is first necessary to map the phenomenon of cyberbullying among adolescents from various published articles. From this bibliometric analysis, we will find research trends related to cybercrime and also keywords that can lead to finding solutions, or research trends that are still rarely done. It is hoped that new ideas will emerge to conduct research that is still rarely done.

This research aims to find out: (1) the development of the number of publications on the reality of cyberbullying in the world on the Scopus database from 2014-2023, (2) author productivity, (3) core journals of cyberbullying reality publications, (4) subject areas of publications on cyberbullying, (5) the most productive countries in publications and citation in the field of cyberbullying, (6) the most cited author, (7) bibliometric mapping of the development of publications on the phenomenon of cyberbullying among children..

2. RESEARCH METHODS

This research uses publication data from the Scopus database (www.scopus.com). Data search using educational keywords "cyberbullying" AND "children". Inclusion criteria in this study are: (1) descriptor article tittle, abstract, keyword, (2) period 2014-2023, (3) limited to journal articles and conference papers, (4) published in English. The data obtained from Scopus were exported in csv and Microsoft excel, then processed with VosViewer software to map the publication of the reality of cyberbullying. The search results with keywords obtained 1,001 articles with a composition of 92.3% are journal articles, and 7.7% are conference papers.

3. RESULT AND DISCUSSION
3.1. Development of the number of publications on the phenomenon of cyberbullying in children in the world.

The number of publications on cyberbullying in children has continued to increase over the past decade, as shown in table 1.

Table 1. Number of publications on the phenomenon of cyberbullying in children

Year	Article	%
2014	56	5.594405594

Year	Article	%
2015	54	5.394605395
2016	54	5.394605395
2017	77	7.692307692
2018	108	10.78921079
2019	143	14.28571429
2020	149	14.88511489
2021	164	16.38361638
2022	194	19.38061938
2023	2	0.1998002
TOTAL	1001	100

The diachronic productivity of publications on cyberbullying in children shows that most documents are concentrated in 2019 with an increase in the number of articles by 35 (14.23%), and the largest population in 2022 with 194 articles. The percentage decrease in the number of articles occurred in 2023, this is suspected because it has not yet entered 2023 so that many articles have not been published. If observed, in 2014 the number of article publications was only 56 articles and in 2022 there were 194 articles, meaning that over the past 10 years research and publications on cyberbullying have continued to experience an increasing trend. This means that the phenomenon of cyberbullying in children is increasing every year, this needs special attention so that a solution to the root cause of the problem can be found.

3.2 Author productivity.

The top 10 most productive authors in Scopus publications that raise the theme of the phenomenon of cyberbullying in children are between 9-15 articles. With the most publications, Ortega-Ruiz, R. with 15 articles, followed by Wachs, S and Wright, M.F. with 14 articles, Machimbarrena, J.M. with 13 articles, Garaigordobil, M. and Wang, X. with 10 articles, and the least with 9 articles are Calvete, E., Mishna, F., Navarro, R., Vandebosch, H.
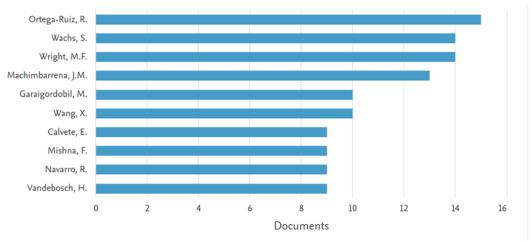

Figure 1. Author productivity

3.3 The core journal publishes the phenomenon of cyberbullying in children.

Based on the search results with the keywords "cyberbullying" AND "children" on the Scopus database, 5 Scopus journals were obtained that discussed the most about these keywords. Referring to Figure 2, publications in the International Journal Of Environmental Research And Public Health were 89 articles, Journal Of Interpersonal Violence 41 articles, Computers In Human Behavior 35 articles, Cyberpsychology Behavior And Social Networking 26 articles, Children And Youth Services Review - 23 articles. The journal can be used as a reference for authors if they want to publish their articles related to the theme of cyberbullying, or look for the most references.
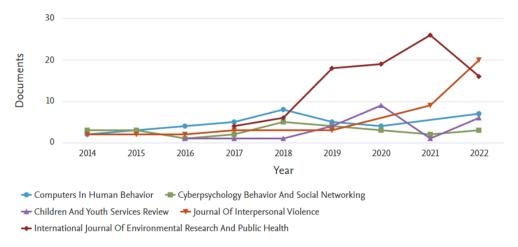
Figure 2. Core journals publishing the phenomenon of cyberbullying in children

3.4 Subject areas of publications on cyberbullying in children.

The highest percentage of publications on cyberbullying in children is in the subject area of medicine (24.6%), followed by psychology (24.5%), and social sciences (19.7%). This data is visualized in Figure 3.
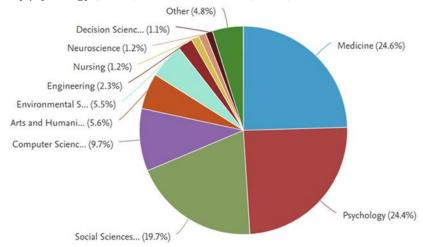

Figure 3. Subject area of publications on cyberbullying in children

3.5 Most productive countries in publications and citations in the field of cyberbullying

From the data obtained, there are 10 countries with the highest number of Scopus documents and the highest number of citations. The most productive country with the highest citation is the United States, followed by Spain, United Kingdom, Canada, Australia, Germany, Italy, Israel, and Turkey. For the number of documents and citations visualized in Figure 4. Of these 10 countries, most are developed countries in the Americas and Europe, while countries in Southeast Asia in particular still have not found many Scopus documents that discuss cyberbullying.
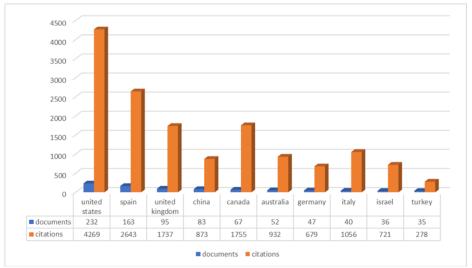
Figure 4. Most productive countries in publications and citations in the field of cyberbullying

3.6 Most cited author

        Of the 1,001 articles that have been filtered, there are 19 articles that are most often cited more than 100 citations. This shows that this article announces ideas that are the subject of discussion to be developed by other researchers and also its quality is very credible because it has a useful impact on scientific renewal [12]. The following data presents the most cited articles in table 2:
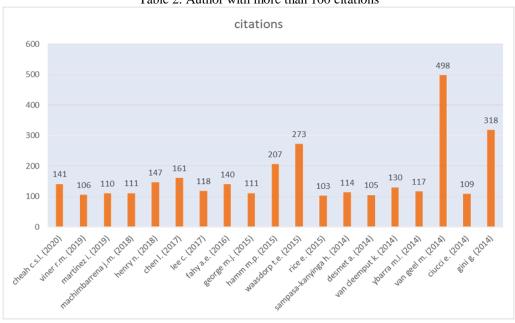
Table 2. Author with more than 100 citations

3.7 Bibliometric mapping of publication development of cyberbullying reality
a.   Co-Word Network Mapping Visualization

        The network map between keywords reflects the resulting relationships with other topics directly related to cyberbullying and children. The size of the word indicates the frequency of its occurrence and more connections with other descriptors. In this case, cyberbullying in children is related to different clusters of descriptors exemplified by different colours. There are 5 clusters where cluster 1 (24 items) is related to crime victim, peer group, risk factor, self-concept. Cluster 2 (17 items) is related to child, student, male, female, parent, awareness, parenting. Cluster 3 (16 items) related to aggression, anxiety, cross sectional study, mental health, depression, social behaviour. It is known that cyberbullying is associated with various adverse mental and physical health problems [13]. Cluster 4 (12 items) is related to computer crime, cyberbullying, social

media, social networking, education, teacher. Cluster 5 (7 items) bullying, school, student, violence. The co-words in each cluster are keywords for the dominant aspects or variables in cyberbullying among children.
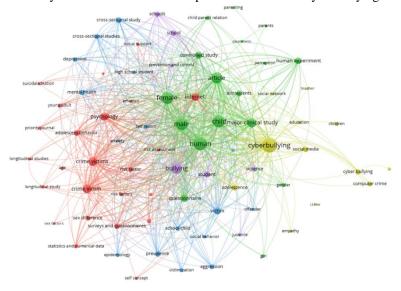

Figure 5. Co-Word Network Mapping Visualization

b.   Overlay Visualization of Co-Word Map

Based on the results of the Overlay Visualization software frame in Figure 5, it shows the trend of the theme of writing articles in Scopus indexed journals based on the novelty of the year. Old years are marked with dark colors, purple, dark blue, dark green. The newest year is marked with a bright color of light green and the most recent with yellow. The yellow color highlights the themes of human experiments, cross sectional studies, controlled, stucy, social media are hot themes that will be a trend in the next few years and are interesting to research. Cyberbullying and social media are two things that are closely related, often making social media a means of cyber bullying [14],[15]. Four categories of cyberbullying through text messages, emails, phone calls, and images/video clips [16].
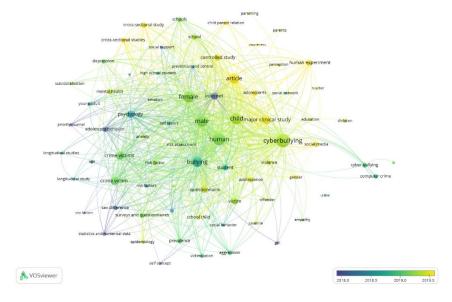

Figure 6. Overlay Visualization of Co-Word Map

c.   Co-word Map Density Visualization

The density visualization illustrates the density of the research themes. The brighter the color means that the theme is closer and has been researched a lot, the darker and farther it means that the theme is rarely researched. When viewed from Figure 6, the themes that have been widely researched are gender, both male and

female, human, bullying, cyberbullying, child, major clinical study. For themes that are rarely researched are schools, parenting, longitudinal studies, suicide ideation, depression. Self-concept, aggression, victimization, empathy, crime, teacher, parent. Many themes around education still need to be studied. This is an opportunity for education researchers to examine the relationship between the impact of cyberbullying on education. The results showed that cyberbullying and education are two things that are related. Cyberbullying in the school environment impacts the quality of the school environment, affects academic and social outcomes, causes emotional and psychological trauma, and even serious violence [17]. Teachers, parents, school curricula, school policies are important components to stop the phenomenon of cyberbullying [18],[19]. Programs for the prevention of cyberbullying should be incorporated in the school curriculum and include thorough instruction on internet safety [20],[21].
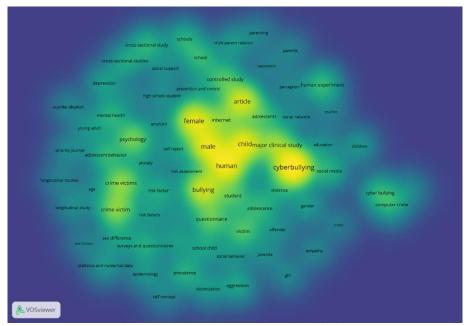

Figure 7. Co-word Map Density Visualization

4. CONCLUSIONS

The results showed that searching for articles using keywords resulted in 1,001 articles from journals and conference papers only. The development of cyberbullying reality publications experienced the highest increase in 2019 by 14.23%. The highest author productivity is Ortega-Ruiz, R. The author with the most citations is Van Gell M. The most productive core journal is the International Journal of Environmental Research and Public Health. The largest subject areas are medicine and psychology. Mapping the publication of the phenomenon of cyberbullying among children analysed with the Vos viewer application showed 5 clusters with 76 theme items.

REFERENCES

[1]   E. Notar, C., Padgett, S., & Roden, J. : Cyberbullying: A Review of the Literature. Universal Journal of Educational Research, 1(1), 1–9. https://doi.org/10.13189/ujer.2013.010101 (2013).

[2]   Menesini, E., Nocentini, A., Palladino, B. E., Frisén, A., Berne, S., Ortega-Ruiz, R., Calmaestra, J., Scheithauer, H., Schultze-Krumbholz, A., Luik, P., Naruskov, K., Blaya, C., Berthaud, J., & Smith, P. K.: Cyberbullying definition among adolescents: A comparison across six European countries. Cyberpsychology, Behavior, and Social Networking, 15(9), 455–463. https://doi.org/10.1089/cyber.2012.0040 (2012)

[3]   Englander, E., Donnerstein, E., Kowalski, R., Lin, C. A., & Parti, K. : Defining Cyberbullying. In PEDIATRICS (Vol. 140). http://pediatrics.aappublications.org/ (2017)

[4]   Müller, C. R., Pfetsch, J., & Ittel, A.: Ethical media competence as a protective factor against cyberbullying and cybervictimization among german school students. Cyberpsychology, Behavior and Social Networking, 17(10), 644–651. https://doi.org/10.1089/cyber.2014.0168

[5]   Calvete, E., Orue, I., Estévez, A., Villardón, L., & Padilla, P. : Cyberbullying in adolescents: Modalities and aggressors' profile. Computers in Human Behavior, 26(5), 1128–1135. https://doi.org/10.1016/j.chb.2010.03.017 (2010)

[6]   Hoff, D. L., & Mitchell, S. N.: Cyberbullying: Causes, effects, and remedies. Journal of Educational

Administration, 47(5), 652–665. https://doi.org/10.1108/09578230910981107 (2009)

[7]   Smith, P. K. : The nature of cyberbullying and what we can do about it. Journal of Research in Special Educational Needs, 15(3), 176–184. https://doi.org/10.1111/1471-3802.12114 (2015)

[8]   Malihah, Z., & Alfiasari, A.: Perilaku Cyberbullying pada Remaja dan Kaitannya dengan Kontrol Diri dan Komunikasi Orang Tua. Jurnal Ilmu Keluarga Dan Konsumen, 11(2), 145–156. https://doi.org/10.24156/jikk.2018.11.2.145 (2018)

[9]   Haryanto, Wahyuningsih, H., & Nandiroh, S. : Sistem Deteksi Gangguan Depresi Pada Anak-Anak Dan Remaja. Jurnal Ilmiah Teknik Industri, 14(2), 142–152 (2015).

[10]   Vandebosch, H., & van Cleemput, K.: Cyberbullying among youngsters: Profiles of bullies and victims. New Media and Society, 11(8), 1349–1371. https://doi.org/10.1177/1461444809341263 (2009)

[11]   Wong-Lo, M., & Bullock, L. M.: Digital Aggression: Cyberworld Meets School Bullies. Preventing School Failure: Alternative Education for Children and Youth, 55(2), 64–70. https://doi.org/10.1080/1045988x.2011.539429 (2011)

[12]   Ellegaard, O., & Wallin, J. A. : The bibliometric analysis of scholarly production: How great is the impact? Scientometrics, 105(3), 1809–1831. https://doi.org/10.1007/s11192-015-1645-z (2015)

[13]   Moore, S. E., Norman, R. E., Suetani, S., Thomas, H. J., Sly, P. D., & Scott, J. G. : Consequences of bullying victimization in childhood and adolescence: A systematic review and meta-analysis. World Journal of Psychiatry, 7(1), 60. https://doi.org/10.5498/wjp.v7.i1.60 (2017)

[14]   Akrim, A., & Sulasmi, E. : Student Perception of Cyberbullying in Social Media. Talent Development & Excellence , 12(1), 322–333. http://www.iratde.com (2020)

[15]   Whittaker, E., & Kowalski, R. M.: Cyberbullying Via Social Media. Journal of School Violence, 14(1), 11–29. https://doi.org/10.1080/15388220.2014.949377 (2015)

[16]   Slonje, R., & Smith, P. K. (2008). Cyberbullying: Another main type of bullying?: Personality and Social Sciences. Scandinavian Journal of Psychology, 49(2), 147–154. https://doi.org/10.1111/j.1467-9450.2007.00611.x (2014)

[17]   Mason, K. L.: Cyberbullying: A preliminary assessment for school personnel. Psychology in the Schools, 45(4), 323–348. https://doi.org/10.1002/pits.20301 (2008)

[18]   Cabra Torres, F., & Marciales Vivas, G. : Cyberbullying and education: A review of emergent issues in Latin America research. In Cyberbullying Across the Globe: Gender, Family, and Mental Health (pp. 131–147). Springer International Publishing. https://doi.org/10.1007/978-3-319-25552-1_7 (2015)

[19]   Beale, A. v., & Hall, K. R. : Cyberbullying: What School Administrators (and Parents) Can Do. The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 81(1), 8–12. https://doi.org/10.3200/tchs.81.1.8-12 (2007)

[20]   Von Marées, N., & Petermann, F.: Cyberbullying: An increasing challenge for schools. School Psychology International, 33(5), 467–476. https://doi.org/10.1177/0143034312445241 (2012)

[21]   Bauman, S.: Cyberbullying in a rural intermediate school: An exploratory study. Journal of Early Adolescence, 30(6), 803–833. https://doi.org/10.1177/0272431609350927 (2010)