International Journal of Research Publication and Reviews

Unveiling the Psychological Dimensions of Cyberbullying: A Comprehensive Bibliometric Study

Suhail Shehjar

GDC-Nobra, Ladakh

ABSTRACT

Cyberbullying has emerged as a pervasive issue in the digital age, profoundly impacting individuals' mental health and well-being. This study delves into the psychological dimensions of cyberbullying through a comprehensive bibliometric analysis, mapping the landscape of existing research to uncover trends, key contributors, and influential works in this critical field. The United States leads in research productivity, with Spain demonstrating the highest impact per paper. Influential journals like *Computers in Human Behavior* and *Cyberpsychology, Behavior, and Social Networking* play central roles in disseminating key findings, underscoring the interdisciplinary nature of this field. Prominent researchers such as Vandebosch H and Ortega-Ruiz R have made substantial contributions, focusing on themes like victimization and self-esteem in cyber contexts. Notably, Smith PK's seminal work on the impact of cyberbullying in secondary school pupils has shaped much of the current understanding in the field.The thematic evolution of research keywords highlights an increasing focus on the psychological impacts of cyberbullying, including connections to mental health issues like depression, anxiety, and suicidal tendencies. The shift in themes from general online behavior to more specific issues like peer victimization and social media's role in cyber aggression reflects the field's progression towards understanding the deeper, more complex dynamics of online interactions. These findings emphasize the urgent need for continued research and comprehensive interventions to mitigate the psychological harms of cyberbullying.

Introduction

The world is currently facing an exponential surge in cybercrimes, with some of the most frequently reported types including phishing, cyberbullying, stalking, personal data breaches, identity theft, and spoofing (Statista, 2022a). According to a 2021 report, approximately 56% of internet users globally have experienced some form of cybercrime (Statista, 2021). Among the countries most affected, India stands out with a staggering 76% of surveyed internet users reporting encounters with cybercrimes. Following India are Brazil and the USA, with 69% and 59% of internet users, respectively, reporting similar experiences (Statista, 2022b). On a global scale, an average of 54% of internet users, or 54 out of every 100, have fallen victim to cybercrimes. This widespread increase in cybercrimes can be attributed to the rapid development of information and communication technology (ICT) tools. The ease of access to these technologies, the low cost of devices, the expansion of internet-based services, and improved network coverage, even in remote areas, have contributed to the rise. Furthermore, the proliferation of social media platforms, along with the customization and localization of features like language, has unfortunately also played a role in facilitating cybercrimes (Popat & Tarrant, 2022; Monteith et al., 2021).

The COVID-19 pandemic has further exacerbated this issue. The pandemic, characterized by strict lockdowns and restrictions on daily activities, pushed more people to rely on ICT tools for communication and other essential functions (Rao & Rao, 2021; Xie et al., 2020). While these tools offered significant benefits, they also created new opportunities for cybercriminals, leading to a marked increase in cybercrimes during this period (Bansal et al., 2022; Agarwal et al., 2022). Among the various forms of cybercrime that have flourished recently, cyberbullying perpetration (CBP) has become particularly prevalent (Asanov et al., 2021). Given the serious physical, emotional, and psychological consequences of cyberbullying for both perpetrators and victims, this topic has been the subject of extensive research (Barragán Martín et al., 2021).

However, despite the considerable volume of research on cyberbullying, the literature appears fragmented, leading researchers to advocate for more comprehensive bibliometric analyses (Cretu & Morandau, 2022). Bibliometric analyses are crucial as they provide a thorough understanding of the knowledge base and intellectual structure within a specific field of study, making them highly recommended for consolidating existing research. While several bibliometric studies on cyberbullying have been conducted, they often come with significant limitations. For example, the bibliometric analyses by Villanueva (2020) and Herrera-López et al. (2018) focused specifically on the Latin American context, thereby limiting their findings to that region. Velasco et al. (2016) also conducted a bibliometric analysis, concentrating on the academic performance of Spanish research on cyberbullying using the Scopus database. Manap (2022) conducted another country-specific bibliometric analysis in Turkey, which did not account for the impact of the COVID-19 pandemic and was limited to the perspective of victims. These studies, restricted to specific countries or regions, fail to offer a global perspective on cyberbullying research.

In contrast, Cretu and Morandau (2022) attempted to provide a more comprehensive bibliometric analysis from a global viewpoint. Their study examined cyberbullying from the perspectives of both victims and bullies and integrated other forms of bullying into the analysis. However, even this study had its limitations, as it was confined to the educational sector, focusing only on the cyberbullying behaviors of students and teachers. Similarly, López-Meneses et al. (2020) analyzed the "broad social and economic circumstances" influencing cyberbullying within educational environments. Another study by Cáceres-Reche et al. (2019) conducted a scientometric analysis focusing on cyberbullying among children and adolescents, but it did not provide sufficient details about the impact of COVID-19 on cyberbullying, particularly among adults or college students.

Cyberbullying is defined by Smith et al. (2008, p. 376) as "an aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and over time against a victim who cannot easily defend him or herself." This definition encapsulates the essence of cyberbullying, emphasizing its deliberate and repetitive nature, as well as the power imbalance that leaves the victim vulnerable and often helpless. Essentially, cyberbullying involves the use of electronic media or information communication technology (ICT) to harass, intimidate, or harm an individual or group who is defenseless against these online attacks. This form of bullying distinguishes itself from traditional bullying in several key ways. For instance, the anonymity provided by ICT allows perpetrators to conceal their identities, enabling them to carry out their bullying activities without fear of immediate repercussions and as frequently as they desire (Bashir Shaikh et al., 2020).

Hashemi (2021) further differentiates cyberbullying from traditional forms of bullying, pointing out that cyberbullies have the capability to target a large number of victims simultaneously, exacerbating the potential harm inflicted. Moreover, the digital nature of these attacks leaves a lasting impact on victims, often referred to as a "digital footprint," which can haunt them long after the bullying has ceased (Hashemi, 2021). Cyberbullying manifests in various forms depending on the situation. For example, "flaming" involves the use of offensive and violent language during online exchanges (Maichum et al., 2016), while "trolling" is characterized by taunting or provoking a person or group in a way that is meant to be humorous but is actually derogatory and undignified (Zsa Tajol Asanan, 2017). "Denigration" refers to the act of spreading malicious rumors or false information with the intent to damage the victim's reputation (Zainudin et al., 2016). Another form, "masquerading," involves the perpetrator pretending to be someone else, often the victim themselves, to deceive or harm others (Peled, 2019). Additionally, modern forms of cyberbullying include "outing," where private information about the victim is publicly shared, and "cyberstalking," which involves persistent and intrusive harassment online (Wright, 2018; Peled, 2019).

Despite the widespread and damaging nature of cyberbullying, it is critical to delve deeper into its impact on individuals' physical and mental health to fully understand the phenomenon. Rao and Rao (2021) argue that cyberbullying can lead to serious mental health issues, including depression (Englander, 2021), anxiety, psychological distress, and symptoms of post-traumatic stress disorder (Nochaiwong et al., 2021). The traumatic nature of cyberbullying events often leaves victims psychologically scarred and deeply wounded (Paat & Markham, 2020). This psychological toll can manifest in various ways, with victims often developing depressive symptoms, experiencing insomnia (Kim et al., 2020), and engaging in counterproductive work behaviors. Additionally, these individuals may report lower levels of job satisfaction (Kowalski et al., 2017) and reduced engagement in their work (Muhonen et al., 2017), coupled with a higher propensity for turnover intentions (Li et al., 2018).

Students are particularly vulnerable to the negative consequences of cyberbullying, making them one of the most affected groups. Research indicates that students who are victims of cyberbullying often experience higher levels of absenteeism from school, struggle with concentration (Kowalski & Limber, 2013; Kowalski et al., 2018), and suffer from feelings of shame and guilt (Ciucci & Baroncelli, 2014). These emotional challenges can also lead to anti-social behavior as students attempt to cope with the distress caused by cyberbullying (Cavalcanti et al., 2019). A longitudinal study conducted by Maurya et al. (2022) over three years reported a noticeable increase in the prevalence of cyberbullying among both female and male respondents. The study found that the rate of cyberbullying incidents rose from 3.8% to 6.4% among female participants and from 1.9% to 5.6% among male participants. Alarmingly, the study also revealed that female respondents who experienced cyberbullying were more likely to develop suicidal ideation compared to their male counterparts.

Further research by Xia et al. (2023) highlighted the significant role cyberbullying plays in the development of appearance anxiety among college students. This anxiety, often exacerbated by the social pressures and judgments prevalent in online environments, contributes to heightened levels of social anxiety. The combined effect of cyberbullying and appearance anxiety creates a vicious cycle, leading to even greater social anxiety among college students. Additionally, a study conducted in Bangladesh found that university students who had been subjected to cyberbullying during their time at university developed issues such as anger, self-guilt, and a fear of attending classes (Sheikh et al., 2023). Similarly, research focusing on Malaysian youth demonstrated that victims of cyberbullying frequently suffer from anxiety, stress, and exhaustion, which significantly increases their risk of suicidal thoughts (Sheikh et al., 2023).

Given the rising prevalence of cyberbullying and its profound impact on mental health, there is an urgent need to evaluate and understand its effects more thoroughly. The growing body of literature on cyberbullying and its associated mental health issues underscores the importance of conducting comprehensive academic analyses. In response to this need, several contemporary researchers have advocated for the use of bibliometric studies to systematically review and assess the academic performance and literature on cyberbullying and mental health. These bibliometric studies are crucial for identifying key trends, gaps, and future directions in research, ultimately contributing to a more nuanced understanding of cyberbullying and its far-reaching consequences.It is evident that most previous bibliometric studies have been limited to specific countries, age groups (such as children and adolescents), or educational settings. Additionally, many of these studies do not specifically focus on the perpetrators of cyberbullying (Gómez Tabares & Correa Duque, 2022; Mäntylä et al., 2018). Researchers have emphasized the importance of examining cyberbullying from the perspective of the perpetrators. Understanding the motivations, aspirations, and psychological profiles of those who engage in cyberbullying can provide valuable insights (Garg et al., 2022a, b). Such studies can also reveal the attitudes and behaviors of perpetrators toward harmful online activities, which could be instrumental in designing targeted interventions to address these negative behaviors (Peker & Yalçın, 2022; Fanti et al., 2012). Moreover, these studies

would shed light on the psychological impacts of cyberbullying on the perpetrators themselves, an area that has been largely overlooked in previous research. For instance, Bansal et al. (2022) reported that attitudes toward cyberbullying can lead to depressive symptoms and increased levels of weight-based teasing among those who engage in cyberbullying. Other studies have highlighted the psychological mechanisms through which cyberbullying adversely affects the perpetrators, leading to feelings of guilt, fear of legal repercussions, and depression (Gámez-Guadix et al., 2016; Bansal et al., 2023).

Cyberbullying Effects on the Self

In examining the psychological dimensions associated with cyberbullying, it is evident that both victims and perpetrators experience a range of adverse effects. Cybervictims, for instance, often endure significant psychological harm, including heightened symptoms of depression and anxiety, as well as increased emotional stress [Atak, H 2013 , Patchin, J.W 2010]. These negative impacts are profound and multifaceted, affecting not only the immediate emotional state of the victims but also their broader psychological well-being.One crucial aspect of this psychological impact is the effect on self-concept dimensions, which encompass self-image, self-esteem, and the ideal self. The self-concept is inherently dynamic and malleable, capable of being shaped and influenced by external social conditions, including the experience of cyberbullying [Estévez et al. 2019, Atak, H 2013]. When individuals are subjected to cyberbullying, their perception of themselves can deteriorate, leading to diminished self-esteem and a distorted self-image. This disruption in self-concept can have long-lasting effects, as individuals struggle to reconcile their internal view of themselves with the negative feedback they receive from their social environment.In addition to the impact on self-concept, the emotional dimensions of cybervictims' lives are also deeply affected. Cyberbullying often results in low self-esteem, dissatisfaction with life, and diminished emotional self-efficacy, which refers to the belief in one's ability to manage and respond to emotional challenges effectively. These emotional consequences can be severe, leading to feelings of loneliness and a weakened sense of self-worth [Brewer, G 2015, Ortega-Barón 2016 ,Schunk, F 2022]. Loneliness, in particular, is a common outcome among victims, exacerbated by a lack of family and social support. Many victims find themselves isolated, without friends or social networks that could offer protection or help mitigate the attacks' psychological consequences. This lack of support underscores the significant role socio-cultural factors play in the experience of cyberbullying [Bayraktar, F. 2015].On the other side of the equation, the perpetrators of cyberbullying, or cyberbullies, are not immune to psychological distress. These individuals often experience high levels of stress and anxiety, alongside a general dissatisfaction with life. This psychological turmoil is compounded by low self-control and poorer emotional empathy, both of which are significant predictors of cyberbullying behavior [Garaigordobil et al.2020, Brewer, G 2015]. The inability to regulate emotions effectively and the lack of empathy towards others' feelings can lead cyberbullies to engage in harmful online behaviors without fully considering the impact on their victims.Moreover, there is a cyclical nature to the relationship between being a victim of bullying and becoming a perpetrator of cyberbullying. Research suggests that individuals who have been victims of bullying, whether traditional or cyber, may develop an increased tendency to engage in cyberbullying themselves [Sticca F 2013, Hinduja 2008]. This cycle of victimization and perpetration indicates a complex interplay between past experiences and future behaviors, where the pain of being bullied can manifest in aggressive actions towards others. Additionally, those who have engaged in traditional forms of bullying are more likely to commit acts of cyberbullying later on, suggesting a continuity in aggressive behavior across different contexts and platforms [Kowalski, R.M 2013].Significant differences have been observed between cybervictims and cyberbullies, particularly concerning gender, self-esteem, self-control, social and family support, and levels of aggressiveness [Bayraktar, F. 2015]. These differences highlight the varied experiences and psychological profiles of those involved in cyberbullying, whether as victims or perpetrators. For example, gender may play a role in how individuals experience and respond to cyberbullying, with potential variations in the psychological impact and the coping mechanisms employed. Similarly, differences in self-esteem and self-control between cybervictims and cyberbullies suggest that these factors could influence the likelihood of becoming involved in cyberbullying, either as a victim or as an aggressor.

Overall, the psychological dimensions of cyberbullying are complex and multifaceted, affecting both victims and perpetrators in significant ways. The interplay between self-concept, emotional well-being, and social support networks highlights the importance of understanding the broader psychological and socio-cultural context in which cyberbullying occurs. By exploring these dimensions in greater depth, researchers and practitioners can develop more effective interventions to address the psychological harm caused by cyberbullying and support both victims and perpetrators in coping with its effects.

Overview of bibliometrics

The application of mathematical techniques to examine published papers in quantity and quality is known as bibliometrics. Researchers like Broadus (1987a, 1987b) and Okubo (1997) believe that bibliometrics is an essential and frequent tool used to evaluate the research activity on a specific subject. Bibliometrics deals with bibliographic data that portrays the growth, international collaboration and top-profile nations, institutes and authors. There is the leeway to present the results visually via enrichment software like VOSviewer, Pajek and CiteSpace.

Bibliometric analysis was put forward by Pritchard (1969) as "the quantitative study of physical published units, or bibliographic units, or of the surrogates for either" (Broadus, 1987a, 1987b, p. 376). While as Glanzel (2003) defined the term bibliometrics as "the application of mathematical and statistical methods to books and other media of communication". Bibliometrics is studied to assist the appraisal of published knowledge in a quantitative assessment of written communication, and bibliographical material. Bibliometrics accesses the scholarly literature quantitatively (Vitzthum et al., 2010; Rip, 1997; Broadus, 1987a, 1987b; Pritchard, 1969) and provides empirical data for a set of papers. It studies the evolution and development of literature, the links and the usage among different fields of knowledge, production, patterns of authorship and collaborations. The cross-disciplinary approach of bibliometric research takes acquired an enormous prominence (Morillo, et al., 2001). Firstly, bibliometrics was a prime research area of information science experts. Later on, bibliometric science attained a pinnacle in scientific study with the creation and growth of data science, big data and data mining. Bibliometrics became extremely pragmatic and widely available when Eugene Garfield established the "Science Citation Index" (Garfield, 1964; Garfield, 1972). Since

that date, this subject has blossomed in the widespread use of bibliometric approaches for the evaluation of "scientist", "institution", "journals" and "country" research performance, production and efficiency by creating a plethora of bibliometric indexes, algorithms and measures for scientific productivity and deduce research trends and hotspots for a topic category (Hou et al., 2015; Li and Zhao, 2015; Zheng et al., 2015). Here, it is pertinent to mention that the first step in evaluating the literature on the issue or subject is to get published papers on a given topic. Databases such as "PubMed", "Google Scholar", "Scopus" and "Web of Science" (WoS) would be used to find peer-reviewed papers on various themes. Then comes scientific techniques to drill down the data sets available for analysis purposes. To execute the process of science mapping, one should select an approach to perform the investigation. The two profound approaches are "performance analyses" and "science mapping" to examine bibliometric studies (Noyons et al., 1999a; Noyons et al., 1999b). There is enough evidence to show the usefulness of the two primary approaches of bibliometric science in literature. Researchers like Cobo (2014), van Raan (2005), Small (1999), Borner et al. (2003) and Morris and Van der Veer Martens (2008) argued that "Performance analysis" as a tool for carrying out bibliometric research evaluates the influence of academic publications in various areas and inter-disciplines. The graphically "science mapping" may also be used to portray the social, intellectual, scientific, a conceptual representation of academic literature. The "Science Map", known as bibliometric mapping, helps comprehend modern academic or scientific literature connections, patterns, genesis and dynamics. The ideas of "performance analysis and science mapping" might be regarded as an analytical method to the classification of scientific data (Cancino, 2018) based upon several factors such as "authors productivity", the "country count" and "citation linkages" (Tomaszewski, 2017). Besides expert assessments of scientific achievements throughout the disciplines, bibliometrics has often been used (Vieira and Gomes, 2010; Derrick, 2011).

In detail, our current study aims to address four research questions (RQs):

RQ1 .What is overall distribution of publication based on year, institutions and countries, sources, and authors in cyberbullying ?

RQ2 .Which are the topmost cited publications in terms of cyberbullying ?

RQ3 .Who are the top co-authorships among authors, institutions, and countries in research cyberbullying

 RQ4 .What are top keywords, co-occurrences in the field of cyber bullying ?

Data collection procedure

In the context of specific approaches within the field of cybercrime research, the Web of Science (WoS) database is recognized as "one of the largest and most comprehensive bibliographic resources covering multidisciplinary areas" (Zyoud et al., 2018, p. 2). This study utilized data from the Social Sciences Citation Index (SSCI) within the WoS database to explore various aspects of research on cybercrime victimization. The study aimed to assess the growth in publication volume, identify prominent keywords, popular topics, and highlight the most influential authors, institutions, countries, and journals within the academic community.

To gather relevant publications on cyber behavior, the study accessed the WoS database and employed two primary search terms: " cyber behavior " and "cyber victimization." and "cyberbullying"These terms were selected after a thorough process of testing and evaluating related terminology to ensure they were the most effective in capturing relevant literature. The research team also considered a range of additional search terms related to the topic, such as "online victimization," "victim of cybercrime," "phishing victimization," "online romance victimization," "cyberstalking victim," "interpersonal cybercrime victimization," and "sexting victimization." However, the results from these additional terms were not entirely suitable, as many of the retrieved papers did not contain the search keywords in their titles, abstracts, or keywords, and were not relevant to the specific focus of the study.After comparing the outcomes from various search terms, the study ultimately selected " cyber behavior " and "cyber victimization" as the most appropriate keywords for identifying relevant articles. This search yielded a total of 3,012 documents. Following this initial retrieval, the publications were further refined automatically within the WoS database using specific criteria, including timespan, document types, language, research areas, and WoS Index categories, as illustrated in Figure 1. The automatic filtering process relied on the basic bibliographic information of the articles, which are clearly categorized within the WoS system, ensuring high accuracy in the refined results. After applying these refinement criteria, the final dataset consisted of 2,426 articles.
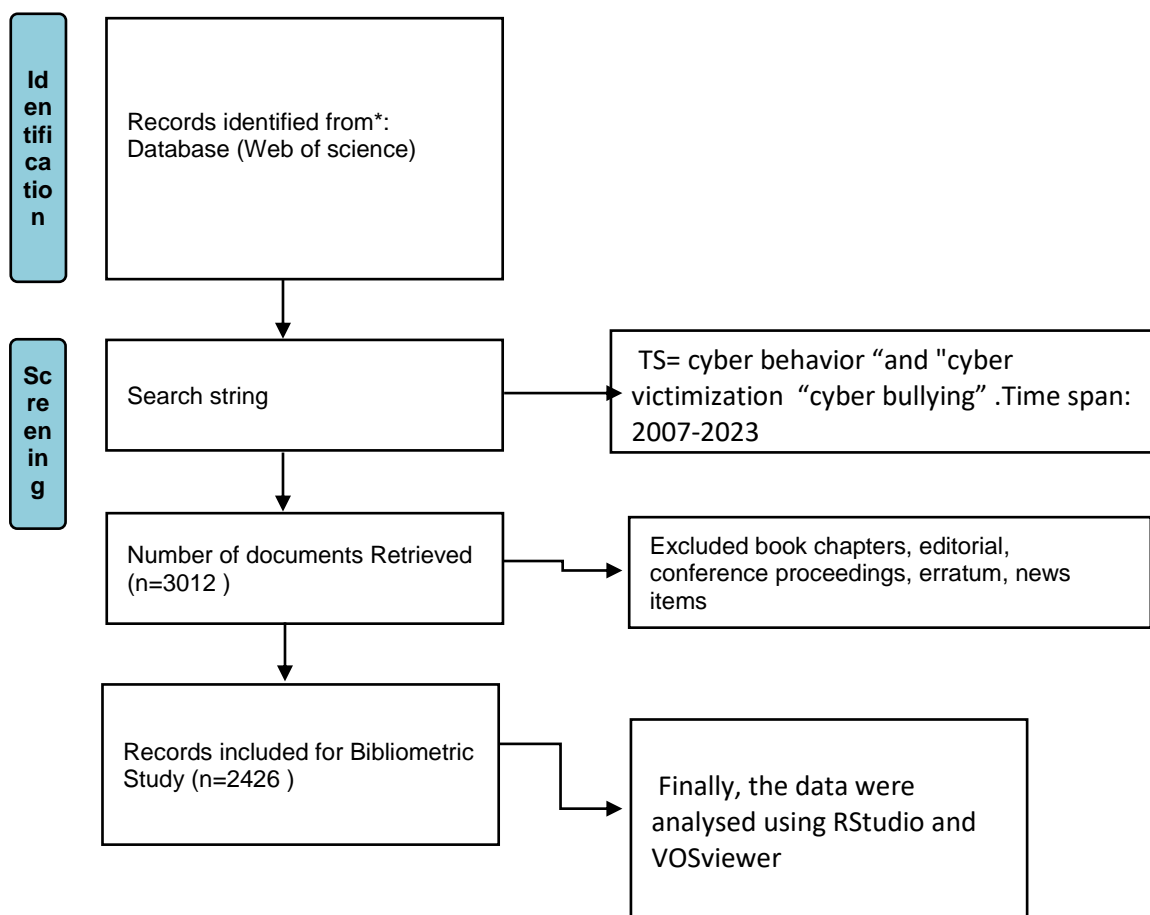
FIGURE 1: Conceptual framework for the study

Data Analysis

Distribution of publication

The figure 2 reflects significant trends in research on cyberbullying, as evidenced by the steady increase in the number of scholarly articles published from 2007 to 2023. In 2007, the field was still emerging, with only two publications focused on cyber-behavior. However, by 2008 and 2009, interest began to grow, as indicated by the rise to 11 and 16 articles, respectively. The following years saw a consistent, though gradual, increase, with 26 articles published in 2011.A turning point occurred in 2012, when the number of publications jumped to 73, marking the beginning of a more substantial research focus on cyber-behavior. This upward trend continued with 74 articles in 2013 and 88 in 2014, further solidifying the field's importance. The most dramatic growth occurred between 2015 and 2022, where the number of articles rose sharply each year, peaking at 349 in 2022. Even though there was a slight dip to 327 articles in 2023, this still represents a massive increase compared to the early years.This Figure 2 indicates a growing recognition of cyber-behavior as a critical area of study within the broader context of digital interactions and online activities, driven by the expanding impact of the internet on daily life. The sustained increase in research outputs underscores the field's rising significance in academia and its relevance to understanding the complexities of online behavior.
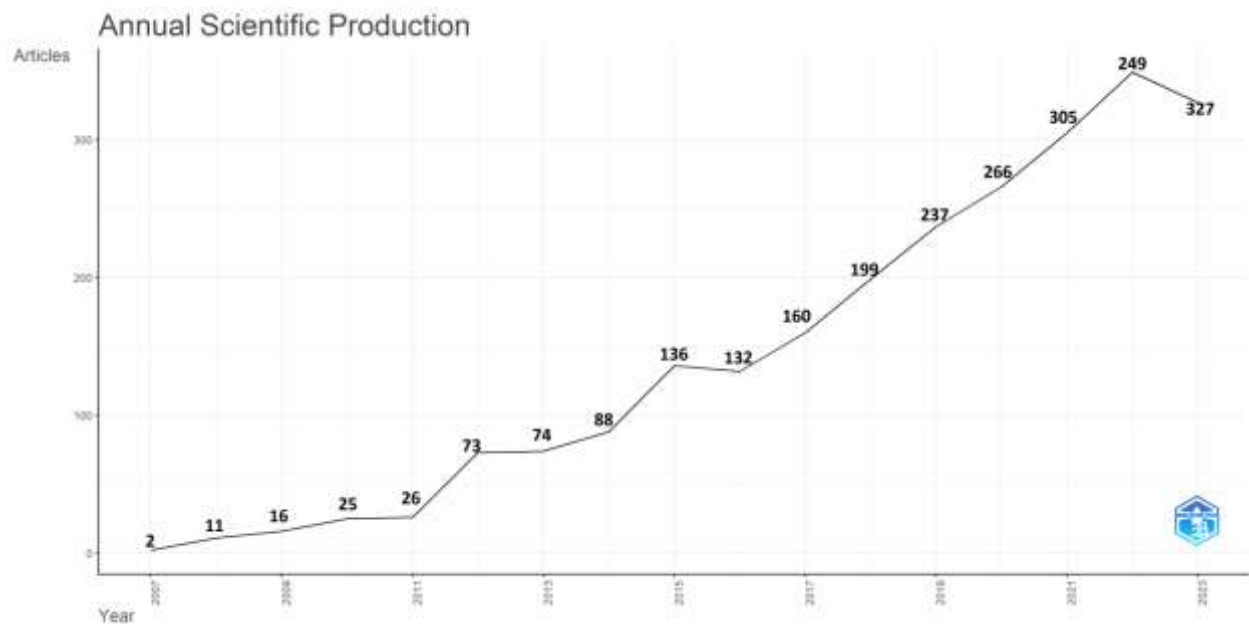
Fig. 2 Annual distribution of publications

Most influential journals in the field of cyberbullying

The Table 1 offers valuable insights into the most influential journals in the field of cyberbullying, as measured by total citations (TC), number of publications (NP), and average citations per article (AC). Leading the field is the journal *Computers in Human Behavior*, with an impressive 10,903 total citations across 176 publications, resulting in a high average of 38.2 citations per article. This highlights the journal's significant impact and its central role in disseminating research on cyber-behavior.Following closely is *Cyberpsychology, Behavior and Social Networking*, which has garnered 2,667 citations from 68 publications, with an average of 31.1 citations per article. This journal is particularly influential in studies that intersect technology and social behavior. The *International Journal of Environmental Research and Public Health* also makes a notable contribution, with 2,265 citations across 135 publications, reflecting a broad interest in the public health implications of cyber-behavior.Other important journals include *Aggression and Violent Behavior* and the *Journal of Interpersonal Violence*, with 2,919 and 1,380 citations, respectively. These journals have slightly lower average citations per article, at 21.1 and 22.2, indicating steady, though more specialized, contributions to the field.Journals like *Children and Youth Services Review* and *Aggressive Behavior* have also made substantial contributions, particularly in areas concerning youth and aggression in digital contexts. The breadth of topics covered across these journals underscores the diverse and interdisciplinary nature of research in cyber-behavior.

Journal	TC	NP	AC
COMPUTERS IN HUMAN BEHAVIOR	10903	176	38.2
CYBERPSYCHOLOGY BEHAVIOR AND SOCIAL NETWORKING	2667	68	31.1
INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	2265	135	28.5
AGGRESSION AND VIOLENT BEHAVIOR	2919	34	21.1
JOURNAL OF INTERPERSONAL VIOLENCE	1380	65	22.2
CHILDREN AND YOUTH SERVICES REVIEW	1710	68	19
AGGRESSIVE BEHAVIOR	1683	32	17.4
FRONTIERS IN PSYCHOLOGY	1151	80	13
JOURNAL OF ADOLESCENCE	1319	26	12.1
JOURNAL OF ADOLESCENT HEALTH	3208	20	10.3

Table 1. Most influential journals

The table 2 highlights the top productive authors in the field of cyberbullying, categorized by the number of articles they have published, their average citations per article (ACC), total citations (TC), and their primary research areas. Leading this list is Vandebosch H, with 46 articles primarily focused

on cyberbullying. Vandebosch's work has accumulated a total of 210 citations, with an average of 12.08 citations per article, underscoring their significant contribution to understanding cyberbullying dynamics.Ortega-Ruiz R follows with 40 articles centered on victimization, achieving an average of 11.18 citations per article and a total of 201 citations. This reflects the importance of their research in addressing the various facets of cyber victimization. Wright MF, who has published 29 articles, primarily investigates the impact of cyber-behavior on self-esteem, with a notable ACC of 13.27, the highest among the listed authors, indicating a strong influence in this area.Wang XC and Lei L have also made substantial contributions, with 27 and 26 articles respectively, focusing on mental health and cybersecurity. Wang's work on mental health in the digital context has garnered 170 citations, while Lei's research on cybersecurity issues has attracted 180 citations, highlighting the growing importance of these topics.Other influential authors include Wachs S, who specializes in digital mental health, and Del Rey R, who focuses on behavioral issues in cyber contexts. Both have published around 25 articles each, with ACCs reflecting their steady impact. Calvete E and Barlett CP contribute to the fields of cyber psychology and cognitive cybersecurity, respectively, each with over 20 publications, demonstrating the interdisciplinary nature of cyber-behavior research.Lastly, Menesini E has contributed significantly to understanding user perceptions and behaviors, with 22 publications and 98 total citations, further emphasizing the diverse range of research areas that underpin the study of cyber-behavior. This table illustrates the breadth and depth of research in the field, driven by these prolific authors.

Authors	Articles	ACC	TC	Research Areas
VANDEBOSCH H	46	12.08	210	Cyber bullying
ORTEGA-RUIZ R	40	11.18	201	victimization
WRIGHT MF	29	13.27	185	self esteem
WANG XC	27	6.22	170	Mental health
LEI L	26	5.08	180	**cyber** security
WACHS S	25	7.77	168	digital mental health
DEL REY R	24	6.50	150	behavioral issues
CALVETE E	23	5.97	120	Cyber psychology
BARLETT CP	22	9.33	120	Cognitive Cyber Security
MENESINI E	22	5.72	98	User Perceptions & Behaviors

Table 2. Top productive authors based on article count and research areas

The Table 3 highlights the most-cited publications in the field of cyberbullying, specifically focusing on cyberbullying and its impact on youth. At the top of the list is the influential study *Cyberbullying: Its Nature and Impact in Secondary School Pupils* by Smith PK, which has garnered 1,794 citations. Published in the *Journal of Child Psychology and Psychiatry*, this seminal work has significantly shaped the understanding of cyberbullying's effects on secondary school students.Following closely is the critical review and meta-analysis *Bullying in the Digital Age: A Critical Review and Meta-Analysis of Cyberbullying Research Among Youth* by Kowalski RM, with 1,509 citations. This study, published in *Psychological Bulletin*, provides a comprehensive analysis of cyberbullying research, highlighting key trends and issues in the digital age.Another highly cited work is *Following You Home from School: A Critical Review and Synthesis of Research on Cyberbullying Victimization* by Tokunaga RS, which has received 1,313 citations and is published in *Computers in Human Behavior*. This review synthesizes existing research on cyberbullying victimization, contributing to a deeper understanding of the phenomenon.

The study *Bullying, Cyberbullying, and Suicide* by Hinduja S, published in the *Archives of Suicide Research*, with 1,011 citations, underscores the severe psychological consequences of cyberbullying, including its links to suicidal behavior. This is followed by O'Keeffe GS's work *The Impact of Social Media on Children, Adolescents, and Families*, which has been cited 912 times and published by the *American Academy of Pediatrics*. This paper explores the broader implications of social media on youth and their families.Other notable publications include Slonje R's study on cyberbullying as a main type of bullying, Juvonen J's exploration of bullying experiences in cyberspace, and Kowalski RM's investigation into the psychological, physical, and academic correlates of cyberbullying. These studies have been cited between 536 and 896 times, demonstrating their impact on the field. Additionally, Valkenburg PM's integrated model of online communication among adolescents and Schneider SK's regional census on cyberbullying and psychological distress among high school students contribute valuable insights to the ongoing discourse on the risks and challenges of cyberbullying, with citations of 569 and 536, respectively.Together, these publications reflect the critical and growing body of research addressing the complex dynamics of cyberbullying and its profound effects on youth, emphasizing the need for continued investigation and intervention in this area.

Title	Author	TC	Source Title
Cyberbullying: its nature and impact in secondary school pupils	SMITH PK	1794	Journal of Child Psychology and Psychiatry
Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth.	KOWALSKI RM	1509	Journals Psychological Bulletin
Following you home from school: A critical review and synthesis of research on cyberbullying victimization	TOKUNAGA RS	1313	Computers in Human Behavior
Bullying, Cyberbullying, and Suicide	HINDUJA S	1011	Archives of Suicide Research
The Impact of Social Media on Children, Adolescents, and Families	O'KEEFFE GS	912	American Academy of Pediatrics
Cyberbullying: Another main type of bullying?	SLONJE R	896	Scandinavian Journal of Psychology
Extending the School Grounds?—Bullying Experiences in Cyberspace	JUVONEN J	707	journal of school health
Psychological, Physical, and Academic Correlates of Cyberbullying and Traditional Bullying	KOWALSKI RM	638	journal of Adolescents health
Online Communication Among Adolescents: An Integrated Model of Its Attraction, Opportunities, and Risks	VALKENBURG PM	569	journal of Adolescents health
Cyberbullying, School Bullying, and Psychological Distress: A Regional Census of High School Students	SCHNEIDER SK	536	American Journal of Public Health (ajph)

Table 3 The most-cited publications in subject of cyberbehavior

The table 4 highlights the most productive countries in terms of research or scientific contributions, measured by frequency (Freq), total citations (TC), and average citations per paper (ACC). The USA leads significantly with the highest frequency of 611 and an impressive total citation count of 22,785, indicating its dominant role in global research productivity. Although Spain has a lower frequency of publications compared to China, it boasts the highest average citations per paper (65.60), suggesting a strong impact of its research outputs. China, despite having the second-highest number of publications (309), has a relatively lower ACC of 32.20, which may indicate a broader but less impactful research output.The UK and Australia also contribute substantially, though their average citations per paper (20.30 and 38.60, respectively) suggest varying levels of influence. Canada and Italy show moderate research activity with average citations of 35.70 and 41.20, respectively, reflecting their respectable impact. Germany's research, though less frequent, has a higher impact per paper (52.80 ACC). Notably, Turkey has a strikingly high ACC of 110.20, possibly indicating a small number of highly influential publications. India, despite a lower frequency, also contributes with an ACC of 26.50, showing its growing presence in global research.

Country	Freq	TC	ACC
USA	611	22785	45.80
CHINA	309	10776	32.20
SPAIN	289	7933	65.60
UK	210	6497	20.30
AUSTRALIA	191	4549	38.60
CANADA	169	3747	35.70
ITALY	84	3296	41.20
GERMANY	62	3062	52.80
TURKEY	56	2424	110.20
INDIA	44	2068	26.50

Table 4. Most productive countries

The Figure 3 presents data on the number of articles published by various academic institutions. Both Renmin University of China and Universidad de Córdoba lead the list with 76 articles each, showcasing their strong research productivity. This is followed closely by the State University System of Florida and the University of London, each contributing 71 articles, highlighting their significant role in academic publishing.The University of Antwerp stands out with 63 articles, indicating a solid research output. The Pennsylvania Commonwealth System of Higher Education (PCSHE) follows with 61 articles, reflecting its notable contribution to scholarly work. The University of Texas System, with 58 articles, also plays a key role in the academic community, emphasizing the importance of research in the Texas higher education system.South China Normal University and the University of Toronto, contributing 56 and 51 articles respectively, demonstrate their active participation in research. Finally, the University of Sevilla, with 45 articles, rounds out the list, showcasing its commitment to academic publishing. Collectively, these institutions highlight the global distribution and varied productivity levels of research outputs across different regions and educational systems.
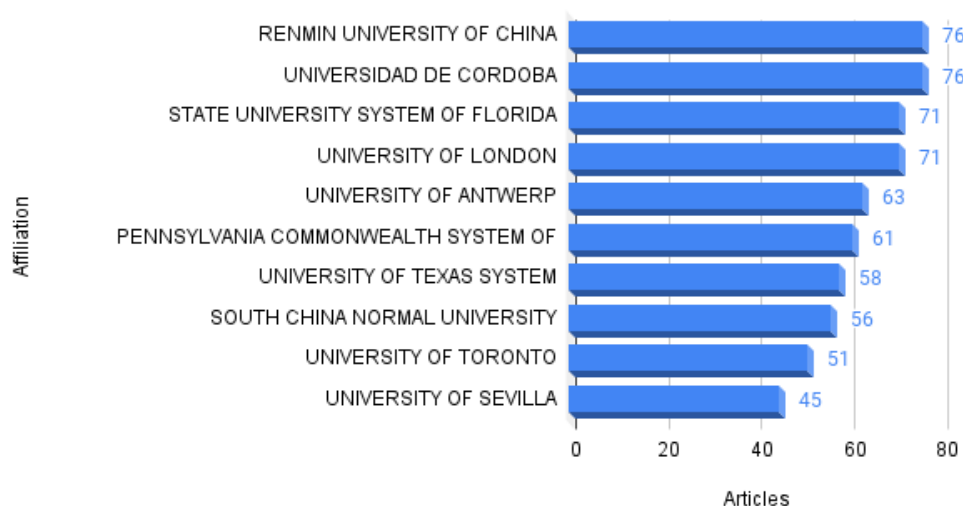

Figure 3. Most Productive Institution

The Figure 4 outlines the thematic evolution of keywords across different time periods. It presents pairs of themes ("From" and "To") and how keywords associated with these themes evolved over time. Here's a summary to help you understand the thematic progression:Key Concepts:Weighted Inclusion Index: This measures how consistently a keyword appears across the "From" and "To" periods.Inclusion Index: This reflects how often a keyword is included in the theme over time.Occurrences: The number of times a keyword appears in the dataset during the given period.Stability Index: This indicates how stable the keyword's association is with the theme over time.

From 2007-2017 to 2018-2020:Crime themes show high stability with terms like "crime," "delinquency," and "general-theory" consistently evolving into themes of "victimization" and "online."Internet themes in 2007-2017 evolve into diverse themes like "education," "peer victimization," and "victimization" from 2018-2020, showing how the internet's role has diversified.Facebook evolves into related themes in 2018-2020, with terms like "cybervictimization" and "power" indicating a shift towards understanding the platform's impact on victimization.Moral Disengagement transitions to themes involving "crime" and "peer victimization," reflecting a growing interest in the psychological mechanisms behind online behavior.From 2018-2020 to 2021-2022:Crime remains a significant theme, now including terms like "general strain theory" and "self-control," indicating a more theoretical exploration.Facebook shifts towards "social media" and "peer victimization," reflecting broader concerns about social platforms beyond just Facebook.Victimization and Peer Victimization themes continue to evolve, incorporating more specific aspects like "depressive symptoms," "social support," and "cyberbullying victimization," indicating a deeper focus on the psychological and social impacts. Narcissism evolves into "personality traits" and remains associated with "victimization," highlighting ongoing interest in the intersection between personality and online behavior.From 2021-2022 to 2023:Peer Victimization continues to expand, now associated with terms like "psychological distress," "emotional regulation," and "suicide," showing a shift towards more severe consequences and mental health aspects.Social Media retains its importance, and Twitter continues to be a distinct theme, indicating ongoing interest in specific platforms.Victimization diversifies further, connecting with themes like "addiction," "attention-deficit/hyperactivity disorder," and "cyber aggression," reflecting the broader societal concerns over digital environments.

General Trends:The themes consistently revolve around crime, victimization, social media, and psychological traits (like narcissism). These show a deepening and broadening of research interest in how online environments influence behavior, mental health, and social interactions.Social media platforms like Facebook and Twitter are significant focal points, especially regarding their impact on victimization and social behavior.Psychological impacts and personality traits increasingly intersect with themes like victimization, showing a trend toward understanding the individual differences in online interactions and behaviors.This thematic evolution reflects the growing complexity of how online behaviors, social media, and personality traits are studied, showing shifts towards more nuanced understandings of these interactions over time.

Figure 4. Thematic evolution of keywords

Keywords co-occurrence

Figure 5 The keyword analysis within the study of Cyberbullying " offers crucial insights into the landscape of contemporary research on cyberbullying, with a strong focus on its psychological aspects. The keyword "adolescents" emerges as the most significant term, occurring 570 times, and demonstrates a total link strength of 1,195, highlighting the centrality of this demographic in cyberbullying research. This suggests that adolescents are a primary focus in understanding the impacts of cyberbullying, particularly in relation to mental health and behavioral outcomes. Table 5 The term "aggression" is also prominent, occurring 299 times, with a high betweenness value, indicating its critical role as a bridge between different concepts within the literature. This reflects the emphasis on aggressive behaviors as a core component of cyberbullying dynamics.Moreover, the analysis highlights the importance of "mental-health" and "victimization," both of which are intricately linked to cyberbullying. These keywords underscore the significant psychological impact of cyberbullying on victims, particularly regarding their mental well-being. Additionally, terms like "behavior," "children," and "school" reveal the broader context within which cyberbullying is studied, emphasizing the school environment as a critical site for understanding and mitigating these harmful behaviors. This bibliometric study, therefore, provides a comprehensive overview of the psychological dimensions of cyberbullying, identifying key trends and focal points in the research, and suggesting areas for further exploration.

Figure 5 .Keyword co-occurrence Map

keyword	occurrences	total link strength	**Betweenness**	**Closeness**	**PageRank**
adolescents	570	1195	1,489.537	0.009	0.082
aggression	299	619	1,254.872	0.009	0.075
associations	189	445	296.747	0.008	0.043
behavior	329	743	190.357	0.007	0.043
children	297	725	114.276	0.007	0.03
cyber	200	558	100.585	0.007	0.029
impact	338	744	86.194	0.007	0.032
mental-health	217	491	81.573	0.007	0.032
metaanalysis	307	754	68.406	0.007	0.031
peer victimization	262	584	43.568	0.007	0.022
prevalence	389	896	34.556	0.007	0.028
school	384	926	27.691	0.007	0.023
students	256	573	27.002	0.007	0.024
victimization	647	1331	25.898	0.006	0.018
victims	220	564	17.492	0.006	0.02

Table 5. Keywords co-occurrence

The Figure 6 illustrates the frequency of collaborative research efforts between various countries. The data shows a significant volume of collaboration originating from the USA, with China being the most frequent partner, having collaborated 63 times. This strong link indicates a robust scientific or academic relationship between the two countries, likely driven by shared research interests and mutual goals in innovation and development.

Other notable collaborations include those between the USA and the United Kingdom, with a frequency of 17, and the USA and Germany, with 27 collaborative efforts. These figures highlight the USA's central role in global research networks, particularly with leading European nations. Spain's collaboration with the United Kingdom is also substantial, occurring 32 times, suggesting a strong bilateral academic partnership within Europe.Additionally, the USA's ties with Korea, Canada, and Australia, with frequencies of 27, 23, and 16 respectively, further emphasize its extensive international collaboration network. Interestingly, Germany also shows a collaborative relationship with the Czech Republic, reflecting regional European research connections. Overall, this data underscores the global nature of scientific collaboration, with certain countries emerging as key hubs of international research activity.
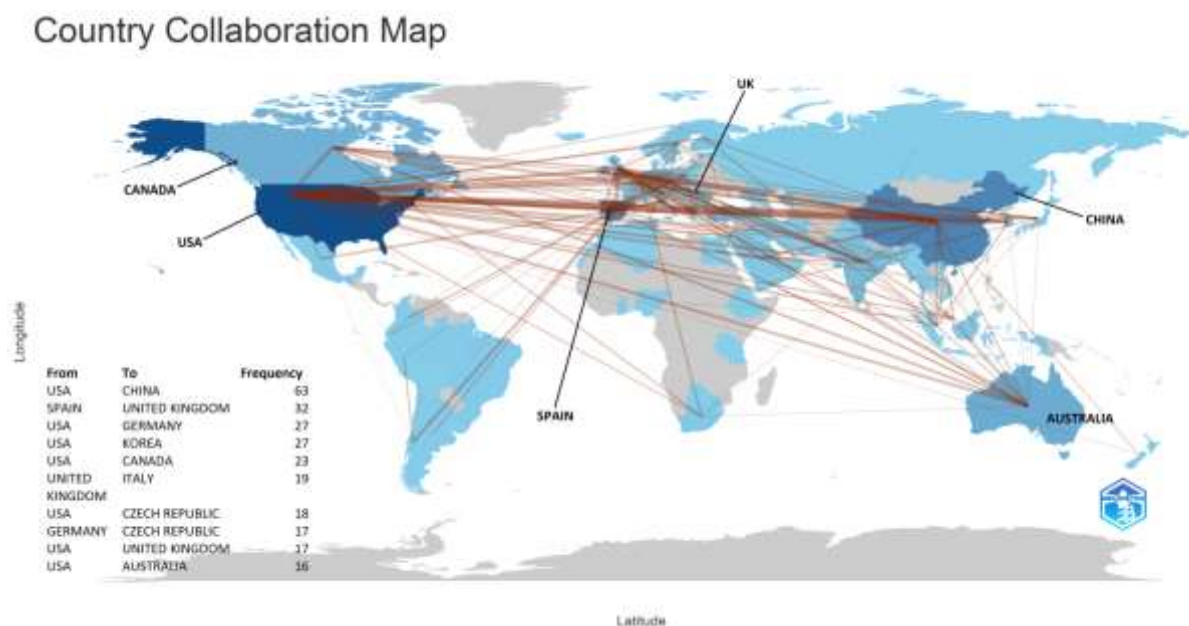

Figure 6. countries collaboration map

Figure 7 displayed a significant network containing 23 authors who were active in collaboration in detail. The displayed items in Fig. 7 are divided into seven clusters coded with distinctive colors, including red, green, blue, yellow, and purple. Each author item was represented by their label and a circle; the size of label and circle are depended on the weight of the item, measured by the total publications (Eck and Waltman 2020). The thickness of lines depends on the strength of collaboration (Eck and Waltman 2020).
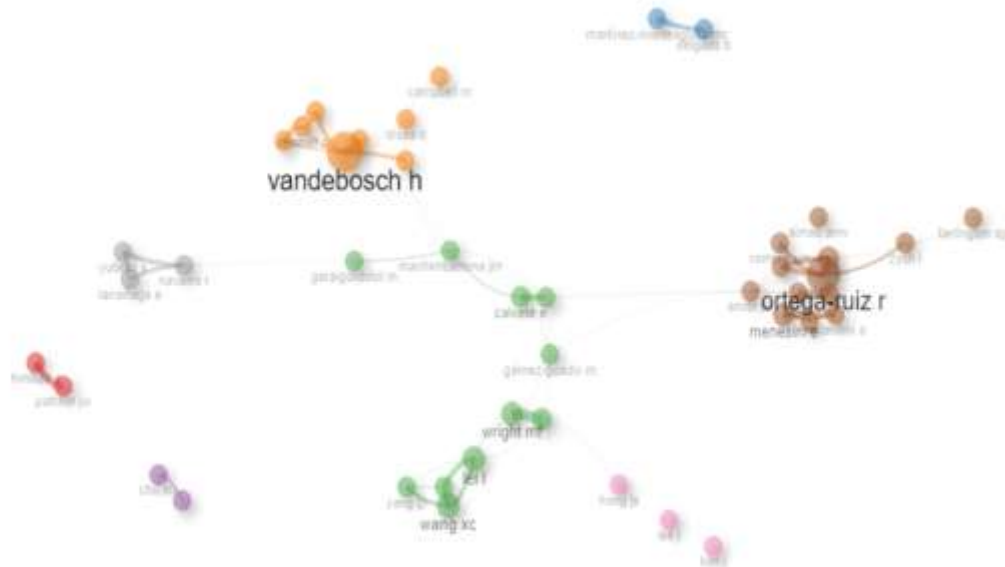
Figure 6 Collaboration among authors via network visualization

The most significant cluster was Maroon one which is comprised of Thirteen researchers: *ortega-ruiz r , del rey r, menesini e, smith pk, zych I, scheithauer h, schultze-krumbholz a, casas ja, nocentini a, simao amv, romera em, farrington dp and palladino be*. The remarked author for the Maroon cluster was *ortega-ruiz r.* whose value of total link strength is 24. He had the strongest links with orue I and calvete in green cluster. *ortega-ruiz r* Who obtained the largest number of published articles based on criteria of this study made various connections with other scholars who were from many different institutions in the world. This is also an effective way to achieve more publications.

Figure 7 In examining the collaboration networks between top academic institutions in the context of cyberbullying research, the analysis reveals that certain universities occupy central and influential positions, as indicated by their Betweenness, Closeness, and PageRank scores.**The University of Antwerp** emerges as a key node in Cluster 1, with a Betweenness score of 65.305, indicating its crucial role in bridging different academic collaborations. This university's high centrality highlights its significant influence in the dissemination and exchange of research on cyberbullying.In Cluster 2, **The University of Texas System** and **The University of California System** are particularly prominent, with Betweenness scores of 224.614 and 106.624, respectively. These institutions not only collaborate extensively within the network but also facilitate connections between other institutions, making them pivotal in advancing research.**Renmin University of China** in Cluster 3 also demonstrates a strong collaborative presence with a Betweenness score of 210.967, underscoring its importance in connecting Chinese institutions with global research networks.Finally, **Pennsylvania Commonwealth System of Higher Education (PCSHE)**, in Cluster 7, boasts the highest PageRank score of 0.049, reflecting its extensive collaborations and influence in shaping the research landscape. These institutions play crucial roles in advancing the understanding and discourse surrounding cyberbullying across different academic contexts.
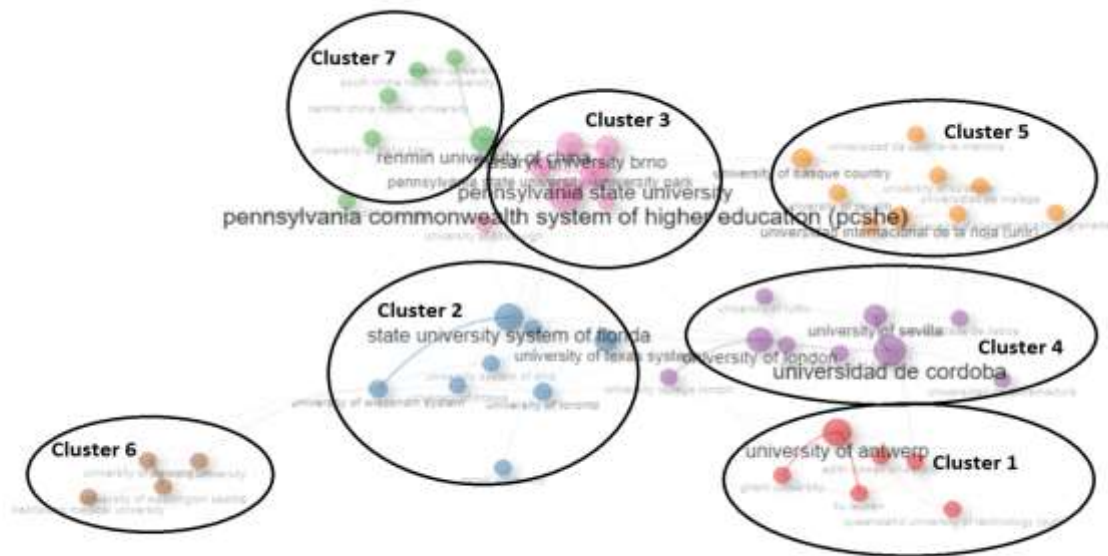
Figure 7 .collaboration networks between top academic institutions

Gender representation in authorship

Figure 8 The data on authorship across multiple documents highlights interesting gender dynamics in the context of research output. A total of 2,256 authors contributed to single-authored papers, with a significant gender disparity: 1,521 male authors versus 735 female authors. This suggests that male authors are more likely to publish independently, reflecting a potential imbalance in research independence or opportunities. As the number of co-authors increases, the gender gap narrows slightly, but a noticeable disparity remains. For instance, in documents with two authors, there are 420 male authors compared to 259 female authors. This trend continues with three-author papers, showing 140 male and 108 female contributors. Interestingly, as the number of authors increases beyond four, female representation becomes even smaller, especially in five-author papers where there are 80 male authors and only 3 female authors.The data also reveals that in highly collaborative papers with 10 authors, the gender distribution shifts dramatically, with 7 female authors and only 1 male author. This suggests that while men dominate single-author publications, women are more present in highly collaborative research.
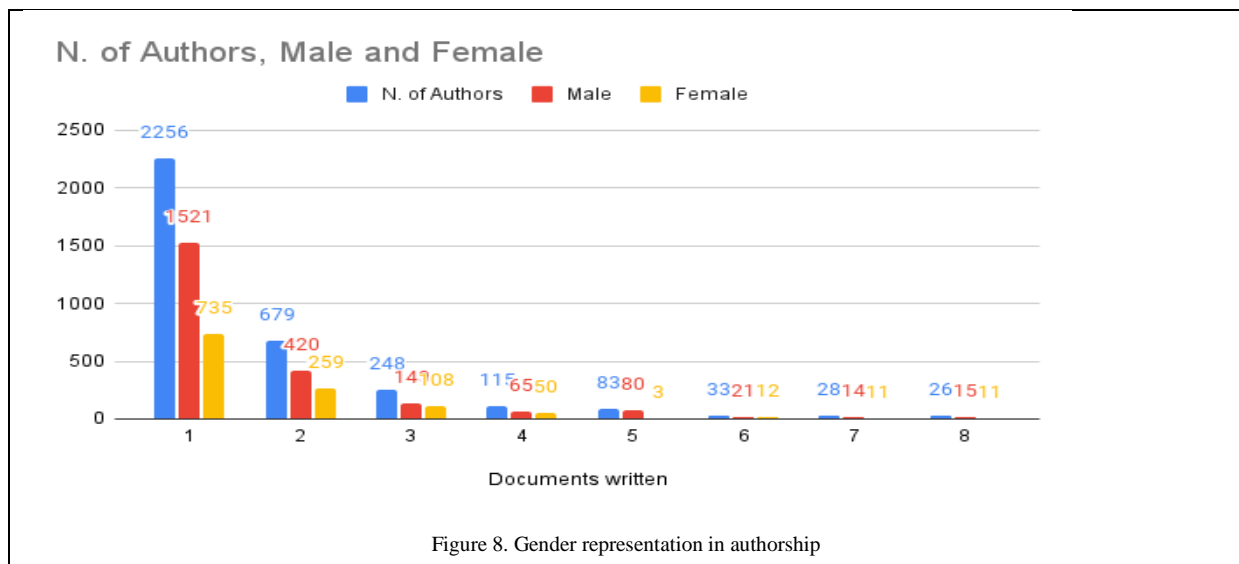

Figure 8. Gender representation in authorship

Research areas

The bibliometric study on the cyberbullying reveals a diverse array of research areas, reflecting the multidisciplinary nature of the field. Figure 9 The most frequent research domain is "psychology multidisciplinary," with 532 occurrences, underscoring the broad psychological perspectives applied to

understanding cyberbullying. This highlights the integration of various psychological theories and methodologies in addressing the complexities of cyberbullying behavior.Following closely, "public, environmental & occupational health" appears 267 times, indicating a significant focus on the public health implications of cyberbullying, including its impact on mental health and well-being. "Criminology & penology," with 257 occurrences, suggests that cyberbullying is also studied within the context of criminal behavior and legal frameworks, reflecting concerns about its potential to escalate into more severe criminal activities.The presence of "psychology developmental" (228) and "education & educational research" (224) highlights the emphasis on developmental stages and the educational environment, acknowledging that cyberbullying is particularly prevalent among children and adolescents. Additionally, "family studies" (221) and "psychiatry" (204) indicate a focus on the familial and mental health aspects of cyberbullying, exploring its impact on family dynamics and its association with psychiatric disorders.

Figure 9 . Main Research Areas on cyber bullying

Discussion

This bibliometric analysis of cyberbullying research from 2007 to 2023 offers a comprehensive overview of the field's growth, the most influential journals, leading authors, and emerging research themes. The findings provide valuable insights into the evolving landscape of cyberbullying research and highlight several key trends and implications.

Growth and Distribution of Publications

The steady increase in the number of scholarly articles on cyberbullying from 2007 to 2023 underscores the growing recognition of cyberbullying as a critical area of study. The data reveals an exponential rise in publications, particularly from 2015 onwards, reflecting a heightened academic focus on understanding and addressing cyberbullying. This growth can be attributed to the expanding impact of digital interactions and the increasing concern over the psychological and social consequences of online behaviors. Despite a slight decline in 2023, the overall trend indicates sustained interest and the field's continuing relevance in the context of digital behavior research.

Influential Journals and Key Publications

The analysis identifies *Computers in Human Behavior* as the leading journal in terms of citations and publications, emphasizing its pivotal role in disseminating research on cyber-behavior. Other significant journals, such as *Cyberpsychology, Behavior, and Social Networking* and the *International Journal of Environmental Research and Public Health*, also contribute notably to the field. The highly cited papers by Smith PK and Kowalski RM further highlight the foundational studies that have shaped current understanding of cyberbullying and its impacts. These key publications reflect a substantial body of research that has provided critical insights into the nature of cyberbullying, its effects on youth, and the broader implications for mental health and social behavior.

Top Productive Authors and Their Contributions

The analysis of top authors reveals a diverse range of research contributions. Vandebosch H leads with the highest number of publications on cyberbullying, indicating a significant contribution to the field. Ortega-Ruiz R's focus on victimization and Wright MF's work on self-esteem further underscore the varied dimensions of cyberbullying research. The notable contributions of authors like Wang XC and Lei L in mental health and cybersecurity highlight the interdisciplinary nature of cyberbullying research, integrating psychological, behavioral, and technical perspectives.

Thematic Evolution and Keyword Analysis

The thematic evolution of keywords over time illustrates a shift from early crime-focused themes to a broader exploration of psychological impacts, social media dynamics, and specific aspects of victimization. The transition from terms like "crime" and "internet" to "peer victimization" and "cyber aggression" indicates a deepening understanding of the complexities of cyberbullying. The keyword co-occurrence analysis reveals that terms related to psychological aspects, such as "adolescents," "mental health," and "victimization," are central to current research. This focus reflects the growing concern over the psychological and emotional consequences of cyberbullying and highlights the importance of addressing these issues in future research.

International Collaboration and Institutional Contributions

The analysis of international collaborations and institutional contributions underscores the global nature of cyberbullying research. The USA emerges as a central hub for research activities, with extensive collaborations with countries like China, the UK, and Germany. Institutions such as Renmin University of China and the University of Córdoba are notable for their high research output, demonstrating their significant role in advancing the field. The collaborative networks among institutions and countries highlight the importance of international cooperation in addressing cyberbullying, reflecting a shared commitment to understanding and mitigating its impacts.

Gender Representation in Authorship

The gender representation analysis reveals a notable disparity in authorship, with a higher number of male authors contributing to single-authored papers. However, the gap narrows in collaborative papers, indicating that women are more represented in multi-authored research. This trend suggests that while men are more likely to publish independently, women contribute significantly to collaborative research efforts. The gender dynamics observed in authorship may reflect broader trends in academic publishing and highlight the need for continued efforts to promote gender equity in research.

Research Areas and Multidisciplinary Insights

The research areas highlighted in this study reflect the multidisciplinary nature of cyberbullying research. The emphasis on "psychology multidisciplinary" and "public, environmental & occupational health" indicates a comprehensive approach to understanding cyberbullying from various perspectives. The focus on "criminology & penology," "education & educational research," and "family studies" underscores the importance of exploring cyberbullying within different contexts, including legal, educational, and familial environments. These diverse research areas demonstrate the complexity of cyberbullying and the need for integrated approaches to address its multifaceted nature.

Conclusion

The comprehensive analysis of the cyberbullying research landscape from 2007 to 2023 reveals a dynamic and rapidly evolving field. The significant growth in publication numbers reflects an increasing recognition of the importance of studying cyberbullying within the broader context of digital interactions and online behavior. The steady rise in scholarly articles, peaking at 349 in 2022, underscores the growing academic interest and the critical need to understand the complexities of cyberbullying and its impacts.

Key insights from the analysis indicate that journals such as Computers in Human Behavior and Cyberpsychology, Behavior, and Social Networking have played pivotal roles in advancing the field, with high citation counts highlighting their influence. The contributions of leading authors, such as Vandebosch H and Ortega-Ruiz R, emphasize the focus on cyberbullying dynamics and victimization, while the top-cited publications underscore significant research areas, including the psychological impact of cyberbullying and its connections to mental health and suicide.The international collaboration map illustrates the USA's central role in global research efforts, particularly with China and other European countries. Notably, institutions like Renmin University of China and the University of Córdoba have emerged as significant contributors to the field, highlighting the global and collaborative nature of cyberbullying research. Gender dynamics in authorship reveal a higher male dominance in single-authored papers, with women being more represented in collaborative research efforts.The thematic evolution of keywords over time shows a shift towards a more nuanced understanding of cyberbullying, encompassing various aspects such as social media platforms, victimization, and psychological impacts. This evolving focus reflects the increasing complexity of cyberbullying research, as scholars delve deeper into the intersection of online behavior, mental health, and personality traits.

Future Research Directions

Future research should further integrate interdisciplinary perspectives, combining insights from psychology, criminology, public health, and educational research. This holistic approach can provide a more comprehensive understanding of cyberbullying and its multifaceted impacts.There is a need for longitudinal studies to track the long-term effects of cyberbullying on individuals' mental health, social behavior, and academic performance. Such studies can help identify persistent patterns and emerging trends over time.Expanding research to include diverse cultural contexts will enhance the understanding of how cyberbullying manifests and is addressed across different societies. This could involve comparative studies between high and low prevalence regions to identify culturally specific factors and effective interventions.With the rapid evolution of digital platforms and technologies, research should focus on the impact of emerging technologies such as artificial intelligence, virtual reality, and new social media platforms on cyberbullying. Understanding how these technologies influence online behavior and victimization will be crucial for developing relevant preventive measures.Addressing the gender disparities in authorship and examining how gender and other demographic factors influence experiences of

cyberbullying can provide more tailored and effective interventions. Additionally, exploring how different groups (e.g., LGBTQ+ individuals, minorities) experience and cope with cyberbullying will offer a more inclusive perspective.Research should evaluate the effectiveness of existing policies and interventions designed to combat cyberbullying. This includes assessing school-based programs, legal frameworks, and online platform policies to identify best practices and areas for improvement.Further investigation into the psychological and emotional consequences of cyberbullying, including its relationship with mental health disorders such as anxiety, depression, and suicidal behavior, will help in designing targeted mental health support and interventions.

By addressing these future research directions, scholars can contribute to a more nuanced and effective understanding of cyberbullying, leading to better prevention, intervention, and policy measures to combat this growing issue in the digital age.

References

Statista (2022a), "Cyber crime encounter rate in selected countries 2021", available at: https://www.statista.com/statistics/194133/cybercrime-rate-in-selected-countries/

Statista (2021), "Crime worldwide - statistics & facts", available at: https://www.statista.com/topics/780/crime/#dossierKeyfigures

Statista (2022b), "Most commonly reported types of cyber crime 2021", available at: https://www.statista.com/statistics/184083/commonly-reported-types-of-cyber-crime/

Popat, A. and Tarrant, C. (2022), "Exploring adolescents' perspectives on social media and mental health and well-being – a qualitative literature review", Clinical Child Psychology and Psychiatry, 135910452210928, doi: 10.1177/13591045221092884.

Monteith, S., Bauer, M., Alda, M., Geddes, J., Whybrow, P.C. and Glenn, T. (2021), "Increasing cybercrime since the pandemic: concerns for psychiatry", Current Psychiatry Reports, Vol. 23 No. 4, doi: 10.1007/s11920-021-01228-w.

Rao, M.E. and Rao, D.M. (2021), "The mental health of high school students during the COVID-19 pandemic", Frontiers in Education, Vol. 6, doi: 10.3389/feduc.2021.719539.

Xie, X., Xue, Q., Zhou, Y., Zhu, K., Liu, Q., Zhang, J. and Song, R. (2020), "Mental health status among children in home confinement during the coronavirus disease 2019 outbreak in hubei province, China", JAMA Pediatrics, Vol. 174 No. 9, 898, doi: 10.1001/jamapediatrics.2020.1619.

König, C. and Frey, A. (2022), "The impact of COVID-19-related school closures on student achievement—a meta-analysis", Educational Measurement: Issues and Practice, Vol. 41 No. 1, pp. 16-22, doi: 10.1111/emip.12495.

Englander, E. (2021), "3.5 social and mental health during the COVID-19 pandemic", Journal of the American Academy of Child and Adolescent Psychiatry, Vol. 60 No. 10, S147, doi: 10.1016/j.jaac.2021.09.039.

Bansal, S., Garg, N. and Singh, J. (2022), "Exploring the psychometric properties of the Cyberbullying Attitude Scale (CBAS) and its relation with teasing and gratitude in Indian collegiates", International Journal of Educational Management, Vol. 37 No. 1, pp. 225-239, doi: 10.1108/ijem-05-2022-0198.

Agarwal, S., Agarwal, B. and Gupta, R. (2022), "Chatbots and virtual assistants: a bibliometric analysis", Library Hi Tech, Vol. 40 No. 4, pp. 1013-1030, doi: 10.1108/lht-09-2021-0330.

Asanov, I., Flores, F., McKenzie, D., Mensmann, M. and Schulte, M. (2021), "Remote-learning, time-use, and mental health of Ecuadorian high-school students during the COVID-19 quarantine", World Development, Vol. 138, 105225, doi: 10.1016/j.worlddev.2020.105225.

Barragán Martín, A.B., Molero Jurado, M.D.M., Pérez-Fuentes, M.D.C., Simón Márquez, M.D.M., Martos Martínez, F., Sisto, M. and Gázquez Linares, J.J. (2021), "Study of cyberbullying among adolescents in recent years: a bibliometric analysis", International Journal of Environmental Research and Public Health, Vol. 18 No. 6, 3016, doi: 10.3390/ijerph18063016.

Cretu, D.M. and Morandau, F. (2022), "Bullying and cyberbullying: a bibliometric analysis of three decades of research in education", Educational Review, pp. 1-34, doi: 10.1080/00131911.2022.2034749.

Villanueva, C.A.B. (2020), "Análisis de la variable acoso escolar: un aportedesde la producción científica latino americana. Propósitos Y Representaciones", available at: https://revistas.usil.edu.pe/index.php/pyr/article/view/451

Manap, A. (2022), "Türkiye' de Yapılan Siber Zorbalık Çalışmaların ın Bibliyometrik Analizi", Bartın University Journal of Faculty of Education, pp. 461-472, doi: 10.14686/buefad.1092893.

Cretu, D.M. and Morandau, F. (2022), "Bullying and cyberbullying: a bibliometric analysis of three decades of research in education", Educational Review, pp. 1-34, doi: 10.1080/00131911.2022.2034749.

López-Meneses, E., Vázquez-Cano, E., González-Zamar, M.D. and Abad-Segura, E. (2020), "Socioeconomic effects in cyberbullying: global research trends in the educational context", International Journal of Environmental Research and Public Health, Vol. 17 No. 12, 4369, doi: 10.3390/ijerph17124369.

Cáceres-Reche, M.P., Hinojo-Lucena, F.J., Ramos Navas-Parejo, M. and Romero-Rodríguez, J.M. (2019), "The phenomenon of cyberbullying in the children and adolescents population: a scientometric analysis", Research in Social Sciences and Technology, Vol. 4 No. 2, pp. 115-128, doi: 10.46303/ressat.04.02.8.

Gómez Tabares, A.S. and Correa Duque, M.C. (2022), "La asociación entre acoso y ciberacoso escolar y elefecto predictor de la desconexión moral: unarevisión bibliométrica basadaen la teoría de grafos", Educación XX1, Vol. 25 No. 1, pp. 273-308, doi: 10.5944/educxx1.29995.

Garg, N., Mahipalan, M., Poulose, S. and Burgess, J. (2022a), "Does gratitude ensure workplace happiness among university teachers? Examining the role of social and psychological capital and spiritual climate", Frontiers in Psychology, Vol. 13, doi: 10.3389/fpsyg.2022.849412.

Peker, A. and Yalçın, R.M. (2022), "Mapping global research on cyber bullying in the context of Cross-Cultural collaborations: a bibliometric and network analysis", Frontiers in Communication, Vol. 7, doi: 10.3389/fcomm.2022.768494.

Atak, H. The Effect of Personality on Cyberbullying among University Students in Turkey. Noropsikiyatri Ars. 2013, 50, 312–319. [Google Scholar] [CrossRef]

Patchin, J.W.; Hinduja, S. Cyberbullying and Self-Esteem*. J. Sch. Health 2010, 80, 614–621. [Google Scholar] [CrossRef]

Estévez, E.; Estévez, J.F.; Segura, L.; Suárez, C. The Influence of Bullying and Cyberbullying in the Psychological Adjustment of Victims and Aggressors in Adolescence. Int. J. Environ. Res. Public Health 2019, 16, 2080. [Google Scholar] [CrossRef] [Green Version]

Brewer, G.; Kerslake, J. Cyberbullying, Self-Esteem, Empathy and Loneliness. Comput. Hum. Behav. 2015, 48, 255–260. [Google Scholar] [CrossRef]

Ortega-Barón, J.; Buelga, S.; Cava, M.J. Influencia Del Clima Escolar y Familiar En Adolescentes, Víctimas de Ciberacoso. Grupo Comun. 2016, 24, 57–65. [Google Scholar] [CrossRef] [Green Version]

Schunk, F.; Zeh, F.; Trommsdorff, G. Cybervictimization and Well-Being among Adolescents during the COVID-19 Pandemic: The Mediating Roles of Emotional Self-Efficacy and Emotion Regulation. Comput. Hum. Behav. 2022, 126, 107035. [Google Scholar] [CrossRef] [PubMed]

Bayraktar, F.; Machackova, H.; Dedkova, L.; Cerna, A.; Ševčíková, A. Cyberbullying: The Discriminant Factors Among Cyberbullies, Cybervictims, and Cyberbully-Victims in a Czech Adolescent Sample. J. Interpers. Violence 2015, 30, 3192–3216. [Google Scholar] [CrossRef]

Garaigordobil, M.; Mollo-torrico, J.P.; Machimbarrena, J.M.; Páez, D. Cyberaggression in Adolescents of Bolivia: Connection with Psychopathological Symptoms, Adaptive and Predictor Variables. Int. J. Environ. Res. Public. Health 2020, 17, 1022. [Google Scholar] [CrossRef] [Green Version]

Sticca, F.; Ruggieri, S.; Alsaker, F.; Perren, S. Longitudinal Risk Factors for Cyberbullying in Adolescence. J. Community Appl. Soc. Psychol. 2013, 23, 52–67. [Google Scholar] [CrossRef] [Green Version]

Hinduja, S.; Patchin, J.W. Cyberbullying: An Exploratory Analysis of Factors Related to Offending and Victimization. Deviant Behav. 2008, 29, 129–156. [Google Scholar] [CrossRef]

Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., and Tippett, N. (2008). Cyberbullying: its nature and impact in secondary school pupils. *J. Child Psychol. Psychiatry* 49, 376–385. doi: 10.1111/j.1469-7610.2007.01846.x

Bashir Shaikh, F., Rehman, M., and Amin, A. (2020). Cyberbullying: a systematic literature review to identify the factors impelling university students towards cyberbullying. *IEEE Access* 8, 148031–148051. doi: 10.1109/ACCESS.2020.3015669

Gómez Tabares, A. S., and Correa Duque, M. C. (2022). La asociación entre acoso y ciberacoso escolar y el efecto predictor de la desconexión moral: una revisión bibliométrica basada en la teoría de grafos. *Educación XX1* 25, 273–308. doi: 10.5944/educxx1.29995

Gámez-Guadix, M., Orue, I., Smith, P. K., and Calvete, E. (2013). Longitudinal and reciprocal relations of cyberbullying with depression, substance use, and problematic internet use among adolescents. *J. Adolesc. Health* 53, 446–452. doi: 10.1016/j.jadohealth.2013.03.030

Hashemi, A. (2021). Cyberbullying phenomenon: an investigation among Afghan university students. *Cogent Soc. Sci.* 7. doi: 10.1080/23311886.2021.1988217

Kim, Y. H., Kim, Y., Maleku, A., and Moon, S. (2019). Typologies of peer victimization, depression, and alcohol use among high school youth in the united states: measuring gender differences. Soc. Work Public Health 34, 293–306. doi: 10.1080/19371918.2019.1606750

Kowalski, R. M., Giumetti, G. W., and Feinn, R. S. (2022). Is cyberbullying an extension of traditional bullying or a unique phenomenon? A longitudinal investigation among college students. *Int. J. Bull. Prevent.* doi: 10.1007/s42380-022-00154-6

Broadus, R. (1987a), "Toward a definition of 'bibliometrics'", Scientometrics, Vol. 12 Nos 5/6, pp. 373-379, doi: 10.1007/BF02016680.

Broadus, R.N. (1987b), "Early approaches to bibliometrics", Journal of the American Society for Information Science, Vol. 38 No. 2, pp. 127-129, available at: https://doi.org/10.1002/(SICI)1097-4571(198703)38:2<127::AID-ASI6>3.0.CO;2-K

Okubo, Y. (1997), "Bibliometric indicators and analysis of research systems: methods and examples", OECD Science, Technology and Industry Working Papers, No. 1997/01, OECD Publishing, Paris, doi: 10.1787/208277770603.

Pritchard, A. (1969), "Statistical bibliography or bibliometrics?", Journal of Documentation, Vol. 25 No. 4, pp. 348-349.

Glanzel, W. (2003), "Bibliometrics as a research field: a course on theory and application of bibliometric indicators", Course handouts, available at: https://www.researchgate.net/publication/242406991_Bibliometrics_as_a_research_field_A_course_on_theory_and_application_of_bibliometric_in dicators

Vitzthum, K., Scutaru, C., Musial-Bright, L., Quarcoo, D. and Welte, T. (2010), "Scientometric analysis and combined density-equalizing mapping of environmental tobacco smoke (ETS) research", PLoS ONE, Vol. 5 No. 6, p. e11254, doi: 10.1371/journal.pone.0011254.

Morillo, F., Bordons, M. and Gomez, I. (2001), "An approach to interdisciplinary through bibliometric indicators", Scientometrics, Vol. 51 No. 1, pp. 203-22, doi: 10.1023/a:1010529114941.

Hou, Q., Mao, G.Z. and Zhao, L. (2015), "Mapping the scientific research on life cycle assessment: a bibliometric analysis", The International Journal of Life Cycle Assessment, Vol. 20 No. 4, pp. 541-555, doi: 10.1007/s11367-015-0846-2.

Li, W. and Zhao, Y. (2015), "Bibliometric analysis of global environmental assessment research in a 20-year period", Environmental Impact Assessment Review, Vol. 50, pp. 158-166, doi: 10.1016/j.eiar.2014.09.012.

Noyons, E.C.M., Moed, H.F. and Luwel, M. (1999a), "Combining mapping and citation analysis for evaluative bibliometric purposes: a bibliometric study", Journal of the American Society for Information Science, Vol. 50 No. 2, pp. 115-131, available at: https://doi.org/10.1002/(SICI)1097-4571(1999)50:2<115::AID-ASI3>3.0.CO;2-J

Cobo, M.J., Chiclana, F., Collop, A., de Oña, J. and Herrera–Viedma, E. (2014), "A bibliometric analysis of the intelligent transportation systems research based on science mapping", IEEE Transactions on Intelligent Transportation Systems, Vol. 15 No. 2, pp. 901-908, doi: 10.1109/TITS.2013.2284756.

Van Raan, A.F.J. (2005), "Measuring science", in Moed, H.F., Glänzel, W. and Schmoch, U. (Eds), Handbook of Quantitative Science and Technology Research, Springer, Dordrecht, pp. 19-50, doi: 10.1007/1-4020-2755-9_2.

Borner, K., Chen, C. and Boyack, K.W. (2003), "Visualizing knowledge domains", Annual Review of Information Science and Technology, Vol. 37 No. 1, pp. 179-255, doi: 10.1002/aris.1440370106.

Morris, S.A. and Van der Veer Martens, B. (2008), "Mapping research specialties", Annual Review of Information Science and Technology, Vol. 42 No. 1, pp. 213-295, doi: 10.1002/aris.2008.1440420113.

Vieira, E.S. and Gomes, J. (2010), "Citations to scientific articles: its distribution and dependence on the article features", Journal of Informetrics, Vol. 4 No. 1, pp. 1-13, doi: 10.1016/j.joi.2009.06.002.

Tomaszewski, R. (2017), "Citations to chemical resources in scholarly articles: CRC handbook of chemistry and physics and the Merck index", Scientometrics, Vol. 112 No. 3, pp. 1865-1879, doi: 10.1007/s11192-017-2437-4.