CYBERBULLYING: ASSESSING THE OTHER SIDE

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(2K21/PHDUSME/02)

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CANDIDATE'S DECLARATION

I, Suhans Bansal, hereby certify that the work which is being presented in the thesis entitled Cyberbullying: Assessing the Other Side, in partial fulfilment of the requirements for the award of the Degree of Doctor of Philosophy, submitted in the Department of University School of Management and Entrepreneurship, Delhi Technological University is an authentic record of my own work carried out during the period from 2021 to 2024 under the supervision of Dr. Naval Garg (Supervisor, Assistant Professor, University School of Management and Entrepreneurship, Delhi Technological University) and Dr. Jagvinder Singh (Co-Supervisor, Assistant Professor, Department of Operational Research, University of Delhi).

The matter presented in the thesis has not been submitted by me for the award of any other degree of this or any other Institute.

Candidate's Signature

CERTIFICATE BY THE SUPERVISOR(s)

Certified that Suhans Bansal (2K21/PHDUSME/02) has carried out their search work presented in this thesis entitled “Cyberbullying: Assessing the Other Side” for the award of Doctor of Philosophy from Department of University School of Management and Entrepreneurship, Delhi Technological University, Delhi, under our supervision. The thesis embodies results of original work, and studies are carried out by the student himself, and the contents of the thesis do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.

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ABSTRACT

The current study aimed to explore the relationship between cyberbullying and depressive symptoms among cyberbullies due to their act of cyberbullying others. The study was divided into four phases. Phase 1 reviewed the academic performance of the research documents on cyberbullying from the perpetrators' perspective and cyberbullying and mental. For this, two independent bibliometric studies were conducted that used science mapping and performance mapping to analyse the literature on the said research domains. Phase 2 reviewed the literature to select and validate a scale that is best suited to the Indian context. The Cyberbullying Attitude Scale by Barlett et al. (2016) was adapted and validated in India. The statistical tools used during this phase were exploratory factor analysis, confirmatory factor analysis, reliability and validity. Softwares used were IBM's SPSS and AMOS. Phase 3 explored the generational and demographic differences that cause variations in cyberbullying attitudes. These differences were explored using Analysis of Variance and t-test in IBM's SPSS. In the last phase of the study, we explored the relationship between cyberbullying and depressive symptoms and the mediation effects of guilt and fear on the said relationship. Data was collected from Indian collegiates and working professionals. A longitudinal and multi-study design was adopted. It was found that cyberbullies can develop depressive symptoms out of their act of cyberbullying others. Also, this relationship was explained by guilt and fear, as they significantly mediated the proposed relationship.

LIST OF PUBLICATIONS

Title of Paper	Name of the Authors	Name of the Journal	Indexing / Ranking of Journal (with proof)	Published / Accepted / Under Review	Publisher	DOI
Exploring the psychometric properties of the Cyberbullying Attitude Scale (CBAS) and its relation with teasing and gratitude in Indian collegiates	Suhans Bansal, Dr. Naval Garg, Dr. Jagvinder Singh	International Journal of Educational Management	ESCI, Scopus, ABDC - B	Published	Emerald	10.1108/IJEM-05-2022-0198
Perpetrators' perspective on cyberbullying: a qualitative systematic review with bibliometric analysis	Suhans Bansal, Dr. Naval Garg, Dr. Jagvinder Singh	Library Hi Tech	SSCI, Scopus	Published	Emerald	10.1108/LHT-06-2023-0265
Cyberbullying and mental health: past, present and future	Suhans Bansal, Dr. Naval Garg, Dr. Jagvinder Singh, Prof. Freda Van Der Walt	Frontiers in Psychology	SSCI, Scopus, PubMed Central	Published	Frontiers Media	10.3389/fpsyg.2023.1279234
Generation and demographic-based differences in cyberbullying attitudes of cyberbullies	Suhans Bansal, Dr. Naval Garg, Dr. Jagvinder Singh	International Journal of Technological Learning, Innovation and Development	Scopus	Accepted	Inder-Science	10.1504/ijtlid.2025.100664 37
Generational and demographic variations in general cyberbullying characteristics and harmful cyberbullying attitudes	Suhans Bansal, Dr. Naval Garg, Dr. Jagvinder Singh			Under Review		
Do cyberbullies develop depressive symptoms? A longitudinal multi-study	Suhans Bansal, Dr. Naval Garg, Dr. Jagvinder Singh			Under Review		

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Sincerely,

Suhans Bansal
(2K21/PHDUSME/02)

DEDICATION

This thesis is dedicated to:

My teachers

My parents and Grand Parents

and

My Friends

Forever Thankful for their support and mentorship

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CHAPTER 1

INTRODUCTION

1.1 Introduction to the Problem

A common saying goes, ‘We live in a small world.’ Physically, Earth may be massive and land distances may be large between nations and cities. But, with the advent of the internet and advancements in information and communication technology (ICT), these distances have been reduced to a national concept only (Agarwal et al., 2022; Kizhakkethil, 2020). Information and communication technology (ICT) encompasses a wide range of technologies used to manage, process, transmit, and share information. It includes a variety of hardware, software, networks, and services that allow for data collection, storage, retrieval, modification, and distribution (Lubbe & Singh, 2009). Moreover, it encompasses technologies such as computers, smartphones, tablets, servers, networking equipment, software applications, internet services, and telecommunications infrastructure, which work together to improve communication, information access, task automation, and the development of digital solutions for a variety of applications (Liu et al., 2021). ICT plays an important part in modern society, revolutionising almost every element of human existence, including communication, education, healthcare, commerce, entertainment, transportation, and governance. It enables individuals, businesses, and communities to access information, communicate and collaborate more efficiently, automate chores, increase productivity, create sustainable agriculture, and foster innovation and economic progress (Bahrini & Qaffas, 2019; El Bilali & Allahyari, 2018; Roztocki et al., 2019). Studies from the medical world indicate that one of the ICT applications, i.e., assistive technology, has helped patients suffering from dementia by improving their time orientation and memory (Nishiura et al., 2019). Fotteler et al. (2023) also suggested that technology has the potential to provide benefits to community-dwelling older adults. Studies from the business and management suggest that the ICT revolution has helped firms in ensuring data privacy, manage increasing expenditures, have digitalised economies, and help in better decision-making through advanced data interpretations (Kraus et al., 2021; Barlow, 2007).

Further, the advancements in ICT have helped developing countries like India achieve their economic goals and create advanced economies. Although the elements of ICT came to India with the setting up of the first tar line by the British rule (pre-independence) and subsequent advancements through the introduction of modern personal and enterprise computers in the late 1980s (post-independence), the nation

has seen an immense adoption and advancements of ICT since recent past (Agarwal & Panda, 2018). The present government stressed the importance of the nationwide adoption of ICT, its rapid advancements and digital India in 2014 (Anand & Khemchandani, 2019). Since then, the Government of India (GOI) has introduced various schemes to transform India into a Digital India. One such step was to promote a cashless economy through online payment applications. Initially, the major challenge faced by the GOI was the lack of infrastructure to support such transactions and imparting knowledge to people from rural areas on how to participate in such transactions (Anand & Khemchandani, 2019). To tackle this challenge, GOI created Payment and Settlement Systems in India: Vision-2021, which focussed on improving digital infrastructure and reducing the digital divide among Indian citizens (Lele & Dharia, 2019). ICT is further enabling India to achieve its digitalisation goals through a) supporting agricultural assessment via satellites and drone technology, b) introduction of high-speed and low-cost internet for better communication, and c) India has seen a tremendous growth of fintech and edtech firms that have further strengthened the vision of digital India ("Digitalisation and Development," 2020). However, the benefits of ICT are not without its side effects. One of such challenging and worrisome detrimental side effects of misuse of ICT is *cyberbullying*.

The ways in which individuals are bullied have evolved with the advancements in ICT (Kowalski et al., 2014). Researchers have used various terminology to describe bullying in cyberspace, like the internet, online, and electronic bullying. However, the word cyberbullying is widely used among researchers and practitioners (Chan et al., 2021; Chan et al., 2019). Cyberbullying has emerged as a significant problem for internet users, especially the ones who spend longer periods of time in digital space, whether it is for recreational activities like watching reels or interacting on social networking sites (SNS) or due to office work (Bansal et al., 2022). Researchers have referred to cyberbullying as an act of deterring harm to individuals, groups of individuals, or even organisations using ICT and digital technologies. However, the key point to focus upon is that these individuals or groups of individuals are incapable of defending themselves from the instances of cyberbullying.

The instances of cyberbullying have degraded the situation of its victims. The victims of cyberbullying tend to suffer from various mental, physical, and medical issues (Bansal et al., 2022). Bullied people show higher anxiety, depression, stress, loneliness, powerlessness, and anger (Zhu et al., 2021). It also leads to poor self-esteem, resilience, confidence, and optimism (Larrañaga et al., 2018; Waasdorp & Bradshaw, 2015). Although cyberbullying has severe physical and psychological impacts on people of all ages, students are more prone to online victimisation (Zhu et al., 2021). Impulsiveness, lack of guidance and experience, sensation and thrill-seeking attitude, the heat of passion, and peer pressure make young students easy targets of cyberbullying (Zhu et al., 2021; Reyna & Farley, 2006). However, majorly studies have focused on victims, largely ignoring perpetrators' perspective.

To conclude, the use of technology in the workplace, academic institutions, and personal life has surely reaped many benefits. However, its negative consequences have attracted global attention. Social scientists, policymakers and practitioners have emphasised on studying: how humans use ICT, are these interactions according to societal norms and conducts, and what are the implications of such interactions. Apparently, the use of ICT in the field of bullying has given birth to what is called *'cyberbullying'*. Cyberbullying refers to the negative and repeated use of ICT and allied technologies to attack others.

1.2 Background

With swelling rates of population, India is among the top two most populous countries in the world. According to a report published by Internet World Stats (2022), the number of active Internet consumers in India has soared by 13060% within the past two decades. Further, the COVID-19 Pandemic recorded a spike in active internet users as approximately 742 million Indians started using the internet and made their presence in the digital space (Digital 2022: India). However, studies have highlighted the COVID-19 pandemic also acted as a golden opportunity for cyberbullies (Bansal et al., 2022). The COVID-19 pandemic started in India around the middle of March 2020. After that, India witnessed three major coronavirus waves till March 2022, which created significant changes in individuals' lives. One such considerable transformation is the digitalisation of all activities, including academic and office. The pandemic forced educational institutions to arrange classes, examinations, assignments, internships, and even offices were forced to adopt work from home model and conduct every business meeting in online mode. Although this sudden shift to digital platforms allowed individuals to continue their studies or render their services, it put some serious challenges for policymakers, leaders, teachers, working professionals and students (Haddad et al., 2021). The situation is more critical for people from developing countries like India, which are at a crucial juncture of technological advancement.

With India progressively moving towards the digital era marked by technology shaping every aspect of human lives, there is an ever-increasing chance of dangerous cyberbullying. Nowadays, access to the internet through a computer, tablet, or mobile phone has grown exponentially (Sayeed et al., 2021). The COVID-19 pandemic and the subsequent shift to online studies have accelerated the internet penetration rate among Indians (Madhukalya, 2020; Garg et al., 2022). Since most of these people comprise of students who are first-generation internet users, they fail to get any parental guidance in dealing with instances of cyberbullying (Chen et al., 2020). Also, India is a peculiar country with a considerable power distance. It leads to limited communication and discussion among parents and children (Shah & Nakhat, 2018). The rigid Indian hierarchical family structure often restricts the free flow of communication, ideas, and feelings (Chadda & Deb, 2013).

Further, digital transformation is in the initial phase in India; cyberbullying is a relatively new phenomenon for Indians. In a survey conducted by Mallory (2018), 37% of the Indian respondents failed to recognise cyberbullying because of little to no understanding of the intricacies of cyberbullying. Victims of cyberbullying do not recognise that they are being bullied as it is normalised within the digital space and thereby lose their opportunity to report and seek redressal. Besides, people are unaware of the legal options to deal with cyberbullying crimes, which leads to underreporting of online harassment and bullying incidents (Maheshwari, 2020). Also, policies in both the workplace and educational institutions are in line with the laws in India and give impetus to them as an intervention against physical bullying (Sandhu & Kaur, 2022). The government also gives organisations a free hand in framing anti-bullying policies according to their needs. For instance, students at the college level are mandated to provide an anti-bullying affidavit stating that they will never indulge in bullying and ragging others, failing which the individual will face repercussions from being debarred to being sued in court (Gautam, 2020; University Grants Commission:: Ragging Related Circulars, 2009). The Medical Council of India also supports eradicating bullying and ragging from medical colleges in India (Medical Council of India, 2018). However, the policies and rules regulating physical and verbal bullying in educational institutions and workplaces in India do not meet international standards and are limited to meeting specific criteria only (Jain, 2018). For instance, foreign schools regularly evaluate the effectiveness of anti-bullying policies and amend them as per the need (Pearce et al., 2011). The administration of the school tries to create a conducive environment that supports the school's culture against bullying and encourages students to come forward and talk freely about their bullying experiences during school (Farrington, 2011; Farrington, 1993). Also, as a part of their policies, many schools educate parents regarding cyberbullying and other forms of bullying and their dire consequences, appoint peer monitors to keep a vigil on victims and educate students on cyberbullying (Hutson et al., 2017).

Moreover, regretfully, India lacks any specific laws and policies to regulate cyberbullying. Although a few sections of the Information Technology Act, 2000 and the Indian Penal Code (IPC) lay down provisions for penalising the act of cyberbullying, they fail to address cyberbullying as a crime as these provisions are just guiding in nature. Consequently, not having adequate policies and laws and limiting them to physical and verbal bullying has aggravated the problem of cyberbullying in India. For instance, cases of cyberbullying and cyberstalking of women or children increased by 36% in 2018 compared to 2017 (Maheshwari, 2020). A study conducted by Ipsos in 28 countries reported that the menace of cyberbullying is particularly problematic for India, with the highest rate of parents (37%) confirming instances of cyberbullying and regular occurrence of the same (Mallory, 2018; McCarthy, 2018). With impending digital transformation, researchers and practitioners expect an increase in the rate of cyberbullying (Jain et al., 2020). Further, being a recent phenomenon for Indian, the quantum of research is also inadequate. When compared on the amount of research papers published by the countries, specifically on cyberbullies' perspective, India lags behind other countries. For instance, a bibliometric study on the research papers published specifically on

cyberbullying perpetration revealed that India contributed only 16 research papers, China, had contributed 40 research papers and the USA topped the list with 102 research papers on cyberbullying perpetration till the year 2022 (Bansal et al., 2023). Moreover, another bibliometric study revealed that there were only 7 studies from India, 25 from China and 162 from the USA on cyberbullying and mental health till 2023 (Bansal et al., 2024). Fourth, there exists a digital divide among Indians. Studies have shown that various factors affect ICT adoption and its usage. One such study was conducted by Asrani (2021). The author suggested that there exists a digital divide in India, and this divide has been triggered by numerous factors, such as socioeconomic and demographic factors. The author further highlighted that people with high incomes and better education were more likely to adopt newer technologies, and such people belong to a cohort of 14 to 29 years. Thus, policymakers and academicians encourage scientific and empirical exploration of cyberbullying in the Indian context.

However, previous studies have focused on studying the impacts of cyberbullying on victims. Thus, this has created a void from the perspective of bullies (Bansal et al., 2023). We believe that solely studying the problem from victims' perspectives does not guarantee a proper solution, as the perpetrators may not always be deliberate offenders. Situations like peer pressure or, past experiences or lack of awareness may have contributed to the rising cases of cyberbullying (Kowalski, 2017). Also, we believe that perpetrators may also develop health issues out of their act of cyberbullying others, just like victims do. Such health issues, specifically mental health issues, may stem from the realisation at the perpetrators' end that they have done or acted in a way that was morally and socially wrong.

The current study's contributions are constituted by four objectives. Firstly, the study explores the past and current status of the literature on cyberbullying. Secondly, since cyberbullying is a new concept in India, this study explores the existing psychometric scales to measure such phenomena, or if no such scale is found, then it tries to develop a scale in the Indian context. Thirdly, the study explores the generational and demographic differences that may cause the variations in cyberbullying attitudes among Indians. Lastly, the study explores the mechanism that may explain the development of mental health issues, like depressive symptoms, among cyberbullies due to their act of cyberbullying others.

1.3 Problem Statement

The rising cases of cyberbullying pose a significant challenge to researchers, medical practitioners, and society across the globe. The present study aims to contribute to previous findings, intriguing questions and added research. It is to be noted that ICT, which enables the bully to commit cyberbullying, is vastly controlled by humans. Thus, the usage of ICT and its consequences are bound by human activity. As stated in the Laws of Technology, technology itself is neither good nor neutral or bad; it is the human activities that determine the nature of technology as

good, bad, or neutral (Kranzber, 1986; Pitt et al., 2021; Verma & Garg, 2022). Therefore, technology either harms or helps others depends on ethical and unethical actions of its users. Also, the consequences of such acts affect not only the victims but also the doers and are determined by the nature of the acts. Moreover, past literature has vastly studied the victims' side, but there exist few studies that have opened the stage to discuss the bullies' side. Though these studies have made a significant contribution to the literature, the quantum of studies is not enough to adequately understand the bullies' side. Further, as discussed earlier, the technological advancements in India are at a nascent stage, due to which Indians seem to be not much aware of technology's potential destructive use and its repercussions. Consequently, studying cyberbullying from bullies' perspective will a) allow a better understanding of the phenomena, b) help the policymakers, managers, and educational institutions create awareness about cyberbullying and its consequences, and formulate policies to tackle the instances of cyberbullying, c) allow cyberbullies to talk about their situation and mental health. Despite the fact that numerous studies on cyberbullying have highlighted that it is a serious issue, they have not adequately explored a mechanism that can explain the development of mental health issues, specifically in cyberbullies. On these grounds, this study shall add to the existing literature on cyberbullying.

1.4 Purpose of the Study

This study seeks to understand the side of cyberbullies. While doing so, this study explores the existing literature and assesses psychometric tools that can be used to predict cyberbullying attitudes among Indians. Moreover, with the help of the tool, this study investigates how generational and demographic differences can cause variations in cyberbullying attitudes of Indians. Lastly, this study tries to establish a mechanism which can be helpful in establishing a relationship between cyberbullying and depressive symptoms. In this way, this study makes the following contributions:

- Adopt and validate a cyberbullying attitude scale and gain insights into the field by comparing the generational differences currently missing from the literature.
- Help provide a mechanism that explains the advent of mental health issues in cyberbullies due to their act of cyberbullying others.

1.5 Significance of the study

To the best of our knowledge, no previous study has explored the impact of cyberbullying on cyberbullies. The current study is the first of its kind due to the following reasons. First, limited studies have been conducted in multicultural settings like India, considering that India is at a crucial juncture of technological advancements and people in India lack awareness of cyberbullying and its consequences. Second, cyberbullying itself is a new term for the world since its widely accepted definition was proposed in the year 2008. Third, the study tries to explore cyberbullying from the perspective of cyberbullying, which has been

inadequately explored in the literature. Fourth, it explores generational and demographic differences that cause the variations in cyberbullying attitudes of bullies. Fifth, it explores the mechanism that can explain why and how cyberbullies' mental health is affected by their acts of cyberbullying others. Lastly, the current study adopts a longitudinal and multi-study research design that not only mitigates the limitations of a cross-sectional study but also better explains interactions between variables.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The existing literature on cyberbullying and mental health helps in creating a sound understanding of the status of research on the topic and the development of future agendas. The literature review helps in discovering and answering a) where it is, and b) in which direction does its future is. The current study focuses on advancing the knowledge on cyberbullying and mental health. Hence, the literature review will allow us to develop insights into a) the existing body of literature, b) gap identification, c) assess existing theories, d) develop new hypotheses, if required, and e) assess and validate the quality of current literature. Simply put, literature review guides in working to identify gaps, irregularities, and disagreements (Kraus et al., 2020).

This chapter provides an insight into the definitional, conceptual, and dimensional facets of bullying using technology (cyberbullying). The chapter further highlights the related concepts like generational and demographic variations in cyberbullying attitudes.

2.2 Cyberbullying

Cyberbullying is a form of bullying using information communication technology (ICT) (Baso et al., 2021). It has sprouted due to advancements in technology and sciences (Anderson, 2022). Smith et al. define cyberbullying 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" (2008, p. 376). Many attributes of cyberbullying are derived from this definition. These attributes present cyberbullying as an intentional and repetitive act requiring electronic media to attack an individual or group that cannot defend itself from the attack (Doane et al., 2014; Didden et al., 2009). The literature demarcates the dissimilarities between traditional and cyberbullying on further exploration (Barlett & Coyne, 2014; Low and Espelage, 2013). The span of cyberbullying does not confine it merely to "neighborhoods, streets, communities, schools, colleges and universities" (Shaikh et al., 2020, p. 148032). Instead, a cyberbully can bully victims hiding anywhere worldwide (Gao et al., 2020; Choi & Park, 2019). Hence, it allows the bully to enter the victim's social, personal, and

work environments (Choi & Park, 2019; Cross et al., 2015a). Unlike traditional bullying, the use of ICT as the medium of cyberbullying also allows the cyberbully to hide their identity and allows them to bully the victim "24 hours a day and 365 days a year" (Avçin& Can, 2021; Shaikh et al., 2020; Slonje & Smith, 2008). Also, cyberbullying can impact a larger audience at once and may leave a digital footprint as a long-lasting scar on the victim's memory (Anderson, 2022; Hashemi, 2021; Cross et al., 2015b). Cyberbullying can occur in many forms. These forms include flaming, which is the use of violent and vulgar language via online communications (Li et al., 2019); trolling (Zsa et al., 2017); and denigration, which is the spread of falsified information about a person to damage their reputation (Yin et al., 2021; Zainudin et al., 2016). In modern times, cyberbullying also includes masquerades, which means hiding the original identity and pretending to be someone else (Anderson, 2022; Zickuhr, 2010), outings (Wang et al., 2019; van Dijk et al., 2021), and cyberstalking (Stevens et al., 2021; Peled, 2019).

2.3 Attitude Formation and Cyberbullying

Social psychology describes attitude as a learned tendency to evaluate things in a specific way (Mehta et al., 2022). It affects human behaviour and can also substantially predict future behaviour (Walrave & Heirman, 2010; Heirman & Walrave, 2012), specifically when attitudes have high affective-cognitive consistency (Glasman & Albarracín, 2006; Cavalcanti et al., 2021). The *theory of reasoned action* (TRA) states that one's attitude leads to behavioural intentions, which ultimately convert into action (Ajzen & Fishbein, 1980). Since attitude generally precedes action, examining one's attitude might forecast their future intentions and actions (Albarracín & Shavitt, 2018). Therefore, it is suggested to assess the cyberbullying attitude of people in advance as if these attitudes go undetected, perpetrators can attack their victims in future. Previous researchers also associate aggressive attitudes with violent behaviours (Blinkhorn et al., 2016). In the context of cyberbullying, previous research has found that the attitude of apathy and indifference toward cyberbullying has aggravated the issue (Avçin & Can, 2021). Researchers like Barlett (2015) and Barlett and Gentile (2012) have also linked involvement in cyberbullying to a positive attitude towards bullying. Barlett et al. (2016) found a positive association between favourable attitudes mediating the relationship between aggressor-perceived anonymity and cyberbullying.

2.4 Impact of Cyberbullying on Victims

Cyberbullying is a dreadful act, and its adverse impact on an individual's physical and mental health necessitates an in-depth understanding of this phenomenon. Rao and Rao (2021) are of the view that cyberbullying may result in the development of mental health issues, depression (Englander, 2021), anxiety, psychological distress, and post-traumatic stress symptoms (Nochaiwong *et al*., 2021). The events of cyberbullying are traumatising and psychologically wounding (Paat & Markham, 2020). Victims of cyberbullying may develop depressive symptoms and insomnia (Kim *et al*., 2020) and may also show lower engagement (Muhonen et al., 2017) and higher attrition intentions (Li *et al*., 2018). Students are

among the worst affected victims (Kowalski *et al*., 2013). They suffer from negative consequences such as higher absenteeism, lack of concentration (Kowalski *et al*., 2018), feelings of shame and guilt (Ciucci & Baroncelli, 2014), and engaging in anti-social behaviour (Cavalcanti *et al*., 2019). Maurya et al.'s' (2022) three-year longitudinal study reported that the rates of cyberbullying had increased from 3.8% to 6.4% in female and from 1.9% to 5.6% in male respondents over the study period. Also, their study suggested that female respondents have developed a high rate of suicidal ideation compared to male participants due to experiencing cyberbullying. Furthermore, Xia et al. (2023) report that cyberbullying was one of the major reasons for the development of appearance anxiety in college students, which has further exaggerated their social anxiety. The authors further reported that the combined effect of cyberbullying and appearance anxiety has caused higher social anxiety levels in college students. Additionally, a study from Bangladesh revealed that university students who experienced cyberbullying during their tenure at the university had developed anger issues, self-guilt, and fear of attending college (Sheikh et al., 2023). Likewise, a study on Malaysian youth revealed that victims of cyberbullying had developed anxiety, stress, and exhaustion, which have resulted in an increase in suicidal ideations among them. Moreover, Kowalski et al. (2017) mention that cyberbullying can also lead to the development of low job satisfaction levels. Kalyar et al. (2020) have highlighted that cyberbullying distracts and distorts mental states. Shaikh et al. (2020) associate cyberbullying with the development of depression, stress, loneliness, and a sense of seeking revenge, along with other issues. Research conducted by Emirtekin et al. (2019) associated past cyberbullying experiences of an individual with becoming a victim or cyberbully in the present scenario. It also results in school dropouts (Waasdorp & Bradshaw, 2015). However, the current literature has majorly focused on analysing the impact of cyberbullying on its victims, largely encompassing students and adolescents, and analysing its repercussions on their mental health, including the development of stress, anxiety, and depression.

2.5 Impact of Cyberbullying on Cyberbullies

As far as bullies are concerned, a plethora of studies have focused on determining the intention behind indulging in cyberbullying perpetration. A small number of studies have hinted at the negative repercussions of cyberbullying on cyberbullies. For instance, Sourander et al. (2010) reported that cyberbullies experience various psychological problems, such as antisocial behaviours, hyperactivity, and frequent urges for substance abuse. Albdour et al. (2019) report that cyberbullying is also likely to cause psychological problems like anxiety in cyberbullies. Furthermore, studies link the development of post-traumatic stress symptoms in bullies (Mateu et al., 2020). Somatic problems like sleep deprivation and degraded academic performance are strongly associated with cyberbullying among cyberbullies (Kowalski & Limber, 2013). Additionally, contemporary studies report an increase in self-harm, including increased suicidal thoughts and attempts, among adolescent cyberbullies (Patchin et al., 2022). Although these studies attempt to examine the psychological impacts of cyberbullying on cyberbullies, an in-depth study is still warranted. Also, these studies do not investigate the mechanism through

which cyberbullying leads to severe psychological repercussions like depressive symptoms among cyberbullies. Thus, it is imperative to explore the direct linkage between the two variables. Therefore, it is crucial to study cyberbullies' side of the story to fill the literature gap.

2.6 Depressive Symptoms

With increasing concerns over the rising global health crisis, mental health issues have also attracted the attention of medical practitioners and the research community worldwide (Wang et al., 2021). Although mental issues start with minor symptoms, if left untreated, significant damage can occur to an individual's physical and psychological well-being (Ohrnberger et al., 2017). One such issue is depressive symptoms (Gao et al., 2020), which have been extensively studied by social scientists and medical (Santomauro et al., 2021). It is defined as "through an array of symptoms that last for more than two weeks, including moodiness that is out of character; increased irritability and frustration… loss of interest in pleasurable activities" (Ussher, 2014, p. 387). Today, experts on mental health issues consider depression one of the major health indicators. For instance, Wang et al. (2021) have suggested that depression is a significant independent health factor that leads to the development of 'coronary heart disease and, in a majority of cases, leads to the triggering of other 'cardiovascular diseases.' Velly and Mohit (2018) have also associated increased pain sensitivity among patients suffering from depression. Similarly, Troubat et al. (2020) associated depression as one of the major causes of neuroinflammation. According to the World Health Organization's (WHO) report, around 3.8% of the global population suffers from depressive symptoms (WHO, 2021) and among the affected population, 5% were adults (WHO, 2021). The report on depression by WHO (2021) also revealed that its symptoms could cause a person to commit suicide if not treated on time, noting that "suicide is the fourth leading cause of death in 15-29-year-olds" (WHO, 2021). Depressive symptoms differ from other psychological problems like anxiety (WHO, 2021). Unlike depressive symptoms, other psychological problems like mood swings and anxiety are typically transient (WHO, 2021). This means that other mental health disorders are comparatively short-lived (Smith et al., 2022), and depressive symptoms can remain pertinent over a long period of time. Further, previous researchers like Bansal et al. (2024) have suggested that people who are shamed based on their weight and body type can develop depressive symptoms. Giacolini et al.'s' (2021) study indicated that asymmetrical development of the subcortical areas can lead to neuro-hormonal and psychological changes with change in the care system. However, any pre-existing tendency or personality trait can be one of the causes of developing mental health issues like depressive symptoms (Bansal et al., 2024; Giacolini et al., 2021). Furthermore, it has been found that psychological health conditions like work and academic-related stress (Zhang et al., 2022), neuroticism, emotional blockage, negative self-perception, among others (Remes et al., 2021), and biological health conditions like inflammatory diseases and cancer (Remes et al., 2021) can lead to the development of depressive symptoms in individuals. In addition, the reporting of depressive symptoms rose during the COVID-19 pandemic (Santomauro et al., 2021), with the younger population being particularly affected (Varma et al., 2021).

This was mainly due to the lack of physical activities and social isolation (Rao & Rao, 2021). As discussed in the preceding section, digital activities spiked, leading to an increase in internet consumption (Bansal et al., 2022). This was a golden period for cyberbullies to increase their bullying activities, which resulted in increased cases of mental health issues like depression and anxiety (Santomauro et al., 2021).

2.7 Cyberbullying and Depressive Symptoms Among Cyberbullies

The proposed relationship between cyberbullying and depressive symptoms is theoretically premised on the cognitive dissonance theory, which posits that individuals may experience psychological discomfort (cognitive dissonance) when their attitudes and behaviours contradict their concept of self (Festinger, 1957). The theory further suggests that this psychological discomfort occurs when an individual perceives that their actions are inconsistent with their moral self (Maftei et al., 2023). Therefore, in light of this theory, we propose that the acts of cyberbullying others can lead to cognitive dissonance as these acts are not in line with moral values or self-image. In other words, a cyberbully is susceptible to developing depressive symptoms when they realise that their acts of cyberbullying others do not confer with them. It is often argued that employees and college students are not always deliberate perpetrators; instead, factors like past experiences, social outlook, group dynamics, and envy may cause them to become cyberbullies (Troubat et al., 2020; Kowalski et al., 2022). They might have indulged in cyberbullying out of ignorance or for fun. However, upon realising their misdeeds, they may become stressed or develop anxiety due to various factors: a) realising that their actions will lead to harmful consequences, b) fear of being caught, c) adverse effects on their careers, d) social exclusion or e) backlash from family, friends, teachers or organisation. Cyberbullies are also prone to develop depressive symptoms due to shame, guilt, remorse, fun, anger, or frustration, and fear of being caught retaliated against or socially excluded (Agnew, 2014; Ciucci & Baroncelli, 2014). Sometimes, individuals unintentionally get involved in the act of cyberbullying out of ignorance, leading to anxiety about realising their mistakes (Bansal et al., 2022). Furthermore, college students and employees have long careers ahead of them, and the fear of being caught and facing subsequent punishment might also lead to stress and depression (Ussher, 2014). Moreover, Jolliffe et al. (2019) reported psychological disorders among attackers owing to their offending behaviours. Offending behaviours lead to a variety of deviant behaviours like substance abuse and other mental health issues, including depression, anxiety, and stress (Cunha et al., 2023). Similarly, Campbell et al. (2013) also highlighted mental health issues among Australian school students due to their acts of cyberbullying. Kowalski and Limber (2013) and Skilbred-Fjeld et al. (2020) created cohorts of subjects as bullies, victims, and bullies/victims (ones who are both victims and bullies) among school students. The authors have highlighted the development of several mental health issues, such as anxiety, depressive symptoms, and self-harm behaviour among bullies too. Cyber perpetrators are likely to develop mental health issues, such as lower emotional intelligence and higher levels of perceived stress, once they realise that their actions may have adversely affected others (Estévez et al., 2019).

2.8 Guilt and Cyberbully

Tracy and Robins (2004) conceptualised guilt as a negative emotion from self-consciousness. Guilt is a negative emotion said to occur when an individual has internalised societal or group norms and assesses their actions for which they are to be held accountable as unfit or wrong (Teo, 2014). This means that when a person commits a crime and realises that their actions were against societal norms, guilt arises within them. Consequently, this leads to the development of a guilt complex. According to Cherry (2021), a guilt complex occurs when an individual realises that they have committed a wrong action or is going to commit one. Therefore, this persistent guilt feeling leads to stress and anxiety in that person (Cherry, 2021), which, left untreated, leads to the development of depressive symptoms. For instance, Tilghman-Osborne et al. (2011) suggested an association between feeling guilt and the development of depressive symptoms in children aged between 7 to 16 years. Luck and Luck-Sikorski (2020) reported that depression in adults is highly correlated with a higher level of guilt as compared to adults without guilt. Similarly, Wagner et al. (2021) highlighted that feeling of guilt plays an important role in aggravating and complicating psychological issues. Authors asserted that guilt acted as a catalyst leading to the development of PTSD and depression in the respondents (Wagner et al., 2021). Hence, the authors of this current study hypothesise that causing harm to others, primarily through cyberbullying, can evoke a strong feeling of guilt in cyberbullies upon realising that their actions may have caused harm to the victims. This feeling of guilt can become a source of psychological discomfort, including the development of depressive symptoms. Therefore, based on the theoretical premises, it is proposed that guilt mediates the nexus of cyberbullying attitude and depressive symptoms.

2.9 Fear and Cyberbully

Likewise, cyberbully may become fearful of being caught or socially excluded due to the potentially harmful consequences of their wrong actions. This fear is based on the ‘law of karma,’ also called the ‘law of cause and effect’ or the ‘law of causation’ (White et al., 2018). According to the law of karma, an individual shall reap the fruits in accordance with the actions done by them (The Bhagavad Gita; Reichenbach, 1988). A person is bound to perform actions, and every action has either positive or negative consequences depending on the action done initially (Upadhyaya, 2018; Garg et al., 2022). Scholars have highlighted karma’s effects, especially moral evolution and its development in an individual (Brown, 2014). Karma takes the locus of control in ethical studies by fostering positive behaviours (Willard et al., 2020; White et al., 2018). Other researchers suggest that people are afraid to perform harmful actions when they know the karmic law. If individuals perform adverse actions, then fear of negative consequences haunts them (Mulla et al., 2014). Moreover, Lord Krishna in the Shrimad Bhagawad Gita has highlighted that all individuals reap the fruit (outcome) of their actions. The nature of actions determines the nature of the outcome; that is, if the actions were good, then positive would happen, and vice versa. Therefore, we propose that, initially, cyberbullies may engage in bullying others without considering the potential repercussions of their

acts. However, upon realising that their actions were not in line with their self-image and have caused harm to their victim, and now their negative karma will reap its fruits, accordingly, cyberbullies may develop a fear of the negative consequences of bullying others. The negative consequences may include legal actions, losing a job, and getting rejected by friends, family, and society.

2.10 Generational and Demographic Variations in Cyberbullying Attitude

Since the beginning of the 21st century, there has been an increase in scientists' interest in studying generational differences. Kupperschmidt has defined a generation or cohort as an "identifiable group that shares birth years, age location, and significant life events at critical development stages" (2000, p. 66). This definition provides a theoretical premise for *generational cohort theory.* The theory places great importance on the concept of shared experience (Kupperschmidt, 2000; Mannheim, 1952). Accordingly, a generation refers to a cohort of individuals who have experienced similar significant sociological and historical events, resulting in the formation of shared collective memories and experiences that mutually forge the attitudes, behaviours, values, and beliefs of individuals (Mannheim, 1952; Parry & Urwin, 2017). For instance, researchers have suggested that significant events like wars or assassinations generally have a long-lasting impression on youths (Schuman & Corning, 2011). People who went through World War 1 and 2 will have stronger nationalist values, and they would prefer staying in their mother/fatherland and working for its betterment, will have more family-oriented values because they may have seen families getting destroyed, as compared to the current generations who have not been through such hardships (Verma & Garg, 2022). Ng and Parry (2016) further suggest that such similarities experienced by people of the same generation influence the development of informal collaboration among them. Moreover, the theory of reasoned action suggests that individual's attitude affect their actions (Ajzen, 1980). Therefore, people in each generation will act according to the circumstances they have been through, and their actions and attitudes towards a particular stimulus will differ from those of other generations.

In addition, generations are generally differentiated based on their birth year (Verma & Garg, 2022). Gordinier defined Generation X as those born between 1960 and the 1980s (2008). Horovitz (2012) suggested Generation Y as people born between the 1980s and 1996. Dimock (2019) suggests that individuals born after 1996 belong to Generation Z. The younger generation has begun to enter the workforce with great passion and vigour. Some individuals are eager to commence their entrepreneurial endeavours. In 2020, there has been a significant shift in the proportion of generations in the global workforce. Generation Y now makes up 35%, Generation X accounts for 33%, Baby Boomers represent 18%, and Generation Z comprises 11% (Alferjany & Alias, 2021). Therefore, the modern workplace is called a multigenerational workplace because employees from different generations work in the same place. However, their attitudes regarding the use of technology differ based on their demographics and may be seen in contemporary problems like cyberbullying. Moreover, younger generations, such as Generation Y and Z, have

been brought up in a technology-enriched environment. Hence, they have positive attitudes toward adopting newer technologies, including the Internet. However, their adoption of newer technologies (such as newer social media platforms) will result in an increase in the time spent on those technologies by the people of these generations. Hence, in our case, the increase in internet consumption will create internet use disorder. Various studies have linked internet use disorder with increased cyberbullying behaviour (Floros & Mylona, 2022). However, such studies have also indicated that older people are less likely to indulge in cyberbullying activities as they find it hard to adapt to newer technologies. Also, technological progress in India has kept older generations out of touch with newer technologies. Hence, we believe that instances of more favourable cyberbullying attitudes would be seen among younger generations.

Apart from producing ambiguous results based on demographic variables (used as control variables), no previous study has assessed how demographic differences vary among different generations, i.e. generations X, Y, and Z, and cause variations in cyberbullying attitudes in cyber-perpetrators. Many past studies have focused on understanding cyberbullying and associated factors from the perspective of school and university students or the point of view of victims (Chen et al., 2016). For instance, in their book chapter, Whittaker and Kowalski (2014) explored the demographic differences that determine whether an individual is a victim or perpetrator of cyberbullying. However, their book chapter was based on previous studies focusing on school students. A study from China explored the factors that can predict and categorise adolescents into ‘traditional bully-victims’ and ‘cyber bully victims’ (Ding et al., 2020). Further, a study explored factors such as age, gender, and father’s age, to name a few, that can predict the development of cyberbullying attitudes in Turkish adolescents (Beyazıt et al., 2017). Furthermore, a study from Nigeria suggested that socio-demographic factors such as gender, age, field of study, year of study, and religion can categorise undergraduate students as victims, bullies, and victim-&-bullies combined (Olubode et al., 2023). Lastly, authors such as Estrada-Vidal et al. (2022) and Ogolla et al. (2022) have aimed to identify factors that predict cyberbullying victimisation in adolescents and university students, respectively.

Further, demographic variable-based variations have been of great interest among researchers (see Aldowah et al., 2017 and Kowalski et al., 2019). There have been a few studies on gender-based differences in cyberbullying. For instance, Cosma et al. (2022) reported that males have higher odds of perpetrating both traditional and cyberbullying. Females are more cyberbullied than males (Zhu et al., 2021; Wang et al., 2019; Kowalski & Limber, 2007). Other studies have indicated higher bullying among schoolboys (Carlyle & Steinman, 2007). Lowry et al. (2016) found that females are less likely to indulge in such activities. As an indirect form of aggression, cyberbullying is more likely to attract girls (Barlett & Coyne, 2014; Chisholm, 2014). Studies on cyberbullying are plagued with ambiguous results on age and demographics (Chan et al., 2021). In this background, the current study

investigates cyberbullying attitudes among Indian men and women. It seems essential to conduct the study in a country like India, which is traditionally a male-dominated society' however, female participation is growing exponentially in every sphere of life.

Although, to the best of our knowledge, no previous study has explored income level-based variations in cyberbullying, we believe that, like generations from the same economic status, they are likely to share similar social, psychological, and technological experiences (Kim & Park, 2020). For instance, people in the very high-income bracket can easily avail sophisticated devices, high internet speed, paid subscriptions, anti-viruses, and tutorials. A report published by the OECD in 2001 suggested that income is one of the two prominent factors that define the digital divide, so it would be interesting to see whether cyberbullying attitude varies with the income levels of respondents (OECD, 2001). As per OECD's (2001) report on 'understanding the digital divide,' education is the second pivotal factor leading to the digital divide. A higher level of education means greater accessibility to ICT tools, more excellent knowledge and understanding of the intricacies of internet usage and cyberbullying, and greater sensitivity towards probable consequences of cyberbullying. In a rare study, Estell et al. (2009) reported that academically gifted students are less likely to bully or be bullied than general education students. This study also examines the variations in cyberbullying based on the respondents' professions and daily usage of ICT tools. The underlying logic behind such explorations is that cohorts with similar social and technological experiences may develop similar attitudes and behavioural intentions. Moreover, previous studies from various domains have suggested assessing demographic differences in multiple social sciences phenomena to better understand those phenomena (Adelowo & Akinwale, 2022; Saatçi & Ovaci, 2020). Therefore, drawing upon the theory of reasoned action and generational cohort theory, our study aims to assess how the intergenerational differences and demographic differences within these generations affect the development of cyberbullying attitudes among cyberbullies, specifically in the Indian context.

2.11 Previous Bibliometric Studies

Although the research volume on cyberbullying is quite adequate, it appears fragmented, so researchers have encouraged the research community to conduct bibliometric analysis (Cretu & Morandau, 2022). The bibliometric analysis provides a comprehensive knowledge base and intellectual structure of a field of study; thus, such studies are highly recommended. There are several bibliometric analysis studies on cyberbullying, but limitations mar these studies. For instance, Villanueva's (2020) and Herrera-López et al. (2018) bibliometric analyses focused on cyberbullying in Latin America. They emphasised studies conducted in the Latin American context. Velasco et al. (2016) explored the academic performance of Spanish research in cyberbullying using the Scopus database. Manap (2022) conducted another country-specific bibliometric analysis (2022) in Turkey. The author did not include the impact of the Covid-19 pandemic and presented literature from the victims' perspective only.

These studies were restricted to a specific country or region, so they failed to offer a global perspective of cyberbullying research. Cretu and Morandau (2022) conducted a comprehensive bibliometric analysis from a global point of view. Their research also studies cyberbullying from the perspective of victims and bullies and amalgamates other forms of bullying. However, the authors restricted their study to educational setup only. Their bibliometric study was confined to cyberbullying behaviours of students and teachers only. Similarly, López-Meneses et al. (2020) analysed "broad social and economic circumstances" affecting cyberbullying in educational setups. Cáceres-Reche et al. (2019) conducted a scientometric analysis of cyberbullying in children and adolescents. Their study did not provide adequate details regarding the impact of COVID-19 on cyberbullying, especially in adults or college students. It is clear that previous bibliometric studies were mainly confined to a specific country, age-group (children and adolescents) (Barragán Martín et al., 2021), and educational setup. Moreover, the majority of these studies do not delineate studies focusing specifically on cyber perpetrators (Tabares & Duque, 2022; Mäntylä et al., 2018).

Additionally, other studies have focused on victims of cyberbullying (e.g., Gómez Tabares & Correa Duque, 2022; López-Meneses et al., 2020; Mäntylä et al., 2018), educational setting (Moreno & Piqueras, 2020), or have been location-specific, such as those conducted in Turkey (Manap, 2022), Spain (Andrés et al., 2016) and Latin America (Villanueva et al., 2020); (Herrera-López et al., 2018). Finally, Kim et al. (2021) studied literature focusing on workplace cyberbullying in medical and hospital setups. Therefore, our study will cover the highlighted gap and present a fresh perspective on the impact of cyberbullying on mental health.

2.12 Tools to Measure Cyberbullying

Previous researchers have developed and tested specific scales to measure the attitude toward cyberbullying (Barlett et al., 2014; Barlett & Gentile, 2012; Boulton et al., 2012; Doane et al., 2016; Heirman & Walrave, 2012). Barlett & Gentile (2012) developed a nine-item scale to measure cyberbullying attitude. However, the scale was later criticised for low internal consistency and outdated items. Heirmann and Walrave (2012) proposed a four-item scale, but it was also criticised for the lack of construct validity indices (Cavalcanti et al., 2019). Later, Doane et al.'s (2014) scale was also discouraged for the low internal consistency of items. After a deliberate review of the existing measures, Barlett et al. (2016) developed a new scale that addresses the fallibilities of previous scales. The scale was referred to as the Cyberbullying Attitude Scale (CBAS) (Barlett et al., 2016). It has good internal reliability and concurrent and predictive validity. This nine-item self-reported CBAS scale has been developed taking into view the changing landscape of the virtual world, resulting in an updated, brief measure with good scale properties (Barlett et al., 2016). The scale measures two facets of cyberbullying: Harmful Cyberbullying Attitudes (HCA; five items) and General Cyberbullying Characteristics (GCC; four items). The general cyberbullying characteristics (GCC) is the dimension that indicates that an individual perceives cyberbullying others as a lower intensity

bullying behaviour, whereas harmful cyberbullying attitude (HCA) indicates that an individual indulges in cyberbullying intentionally and has no reservations against attacking others.

CHAPTER 3

METHODOLOGY

3.1 Introduction

Previous researchers from the West have used various research methodologies for exploring its antecedents, consequences, model and scale development, interviewing victims and subject matter experts and performing empirical testing. However, the state of research on cyberbullying is in its nascent stage in the context of India. In India, studies have tried to create a basic understanding of cyberbullying as a phenomenon and a crime. However, advancing the research on cyberbullying in India is a need of the hour. As highlighted in the earlier sections, the a lack of a) studies on scale validation or even development in India, b) studies understanding the generational and demographic variations in cyberbullying at a global level, c) studies exploring the impact of cyberbullying on the mental health of the cyberbully at global level, and d) studies utilising longitudinal data collection and multi-study research designs, indicate substantial research gaps in the field of cyberbullying. Hence, the current study employs various research methodologies to bridge the identified gaps. Since the current study seeks to explore and establish a mechanism that can explain the impact of the act of cyberbullying others on bullies' mental health, the study is tools both qualitative and quantitative approaches to explore the current state of the literature on cyberbullying and mental health from bullies' perspective, validate an existing psychological scale or propose a new one in the Indian context.

3.2 Research Design

This study uses qualitative and quantitative research designs to formulate research objectives and propose hypotheses. Initially, we used a mixed-method approach to understand the current state of the literature on the topic, ascertain gaps, and evaluate the possible future scope of research on cyberbullying. Further, based on the other objectives of the study, we followed a quantitative research design to validate a scale to measure cyberbullying in India and explore intergenerational and demographic variations in cyberbullying attitudes. Lastly, the study uses the longitudinal multi-study exploratory design to explore the relationship between cyberbullying and depressive symptoms and the mechanism that establishes this relationship. In light of the limitations of a cross-sectional study, a longitudinal multi-study exploratory design was deemed fit for this study. Researchers have suggested that cross-sectional studies generally do not follow people over a period of

time, due to which the interplay between variables is hard to judge (Wang et al., 2020). Further, researchers have suggested using a longitudinal study when variables concern with the health of an individual. Furthermore, researchers have suggested that to better generalise and produce acceptable results, it is necessary to replicate studies in different or diverse work settings (Kowalski et al., 2022). Therefore, for our final objective, this study incorporated a longitudinal and multi-study research design.

3.3 Research Questions

This study contributes to the literature on cyberbullying and mental health by developing and examining the impact of cyberbullying on mental health from the perspective of cyberbullies. The model development in this study aimed at exploring the mechanism that explains that cyberbullies are also affected by their acts of cyberbullying others. Further, observing the scarcity of such research on the topic, the present study seeks to bridge these insufficiencies in every possible aspect.

The main research question of the study is:

"Do cyberbullies also develop mental issues out of their act of cyberbullying others?"

The research objectives for the study can be stated as follows:

1. To explore and understand the concept of cyberbullying (from bullies' perspective)
2. To identify the future themes in the field of cyberbullying
3. To assess the psychometric properties of the Cyberbullying Attitude Scale in India
4. To assess the effects of generational and psychographic differences on cyberbullying attitudes
5. To explore the relationship between cyberbullying and depressive symptoms among cyberbullies
6. To explore a mechanism that explains the relationship between cyberbullying and depressive symptoms among cyberbullies

3.4 Research Hypotheses and Framework

Various hypotheses pertaining to cyberbullies were assessed in this study. The objective is to test the reliability and validate the cyberbullying attitude scale in India, explore the variations being caused in cyberbullying in Indians due to their generational (Generation X – Premillennial, Generation Y – Millennial, and Generation Z – Post Millennial) and demographic differences (gender, income, education level, profession, and daily internet usage), and to explore the mechanism that can explain the development of mental health issues (depressive symptoms)

among cyberbullies out of their act of cyberbullying others. This research was carried out in four phases that are discussed below:

To discuss the ideas related to cyberbullying and its impact on the mental health of cyberbullies, each phase of the study was accompanied by a research question that acted as the guiding light to reach the final conclusion. Therefore, the research gaps were addressed by answering the following questions:

1. What is the current body of knowledge and future trends in cyberbullying from perpetrators' perspective and cyberbullying and its impact on mental health?
2. Is there a scale present to assess the cyberbullying attitude in India?
3. How do generational and psychographic differences affect the cyberbullying attitude of cyberbullies?
4. Is there a mechanism that can explain the development of mental health issues in cyberbullies out of their act of bullying others?

3.4.1 Phase 1

In this phase, two independent bibliometric studies were conducted that helped uncover the knowledge base of a) cyberbullying from the perpetrators' perspective and b) cyberbullying and its impact on mental health. Therefore, this phase was based on two objectives:

Objective 1: To explore and understand the concept of cyberbullying (from bullies' perspective) and identify the future themes

A bibliometric analysis aimed to explore the theoretical and knowledge development and analyses the future research agenda in cyberbullying perpetration from cyberbullies' perspective was conducted. The study was based on the following questions:

What are the trends in article publication under cyberbullying perpetration?

Which nations are actively publishing articles related to cyberbullying perpetration?

Which journals are publishing research articles in cyberbullying perpetration domain?

Which are the influential research articles on cyberbullying perpetration?

What themes on cyberbullying perpetration were popular in the past, are popular in the present, and will be popular in the future?

Objective 2: To explore the past, present and future of literature on cyberbullying and mental health

This object was fulfilled by conducting a bibliometric analysis study. This study aims to address these limitations by conducting a comprehensive analysis of the global literature on cyberbullying and mental health. It was too guided by its own set of research questions:

What are present trends in research publications, citations, and research areas?

What are countries' performance and authors' performance on the topic?

How are the journals performing on the said topic?

How are articles performing? and

What are widely used keywords and emerging topics?

Apart from a general study of these questions, this study explored (a) emerging countries and countries where research on the topic has not been done yet, (b) emerging journals, and (c) top publications on the impact of cyberbullying on people's mental health published during the past five years.

3.4.2 Phase 2

In this phase, we explored all the present cyberbullying scales that assessed the cyberbullying scores of an individual. As indicated in the literature review section, each scale had its own demerits, and generally, most of them were uni-dimensional scales. Therefore, after an extensive literature review, we found a suitable scale which assessed the general cyberbullying characteristics and harmful cyberbullying attitudes in an individual. This scale was the Cyberbullying Attitude Scale and was developed by Barlett et al. (2016). Therefore, in this phase, we tested the reliability of the scale and validated it in the Indian context. The object and hypothesis of this phase are:

Objective 3: To assess the psychometric properties of the Cyberbullying Attitude Scale in India

3.4.3 Phase 3

This phase of the study aimed to explore the variations caused in the cyberbullying attitudes of people based on their generational and demographic differences. A confirmatory factor analysis was conducted, followed by ANOVA and t-test. Objectives and Hypotheses of this phase are:

Objective 4: To assess the effects of generational and demographic differences on cyberbullying attitudes

H1: Cyberbullying attitudes vary based on generational differences.

H2: Cyberbullying attitudes vary based on gender differences.

H3: Cyberbullying attitudes vary based on income differences.

H4: Cyberbullying attitudes vary based on education levels.

H5: Cyberbullying attitudes vary based on differences in professions.

H6: Cyberbullying attitudes vary based on daily ICT usage.

H7: Cyberbullying attitudes vary based on Locality.

H8: Cyberbullying attitudes vary based on Family Structure.

3.4.4 Phase 4

This last phase marked the end of the study. In this phase, we conducted an empirical study that examined the relationship between cyberbullying and depressive symptoms among cyberbullies via two dimensions of cyberbullying, i.e., hostile cyberbullying attitudes (HCA) and general cyberbullying characteristics (GCC). Finally, the mediating effects of guilt and fear were examined. This study was based on the longitudinal and multi-study design. Various hypotheses were examined by grounding the study in the cognitive dissonance theory, which was extended by the guilt complex and the law of karma.

Based on the cognitive dissonance theory, it was proposed that cyberbullies can develop depressive symptoms when they realise that their actions are not in accordance with their moral and ethical conduct. Therefore, this difference can act as cognitive dissonance, and they will suffer from disturbed mental health. Further, as we used the bi-dimensional scale to measure cyberbullying, the relationship was tested based on the interaction of General Cyberbullying Characteristics (GCC) and Harmful Cyberbullying Attitude (HCA) with depressive symptoms. Therefore, the objective and hypotheses formulated were:

Objective 5: To explore the relationship between cyberbullying and depressive symptoms among cyberbullies

H9: GCC is positively associated with depressive symptoms.

H10: HCA is positively associated with depressive symptoms.

Figure 1 presents the proposed model and hypotheses to achieve the Objective 5.

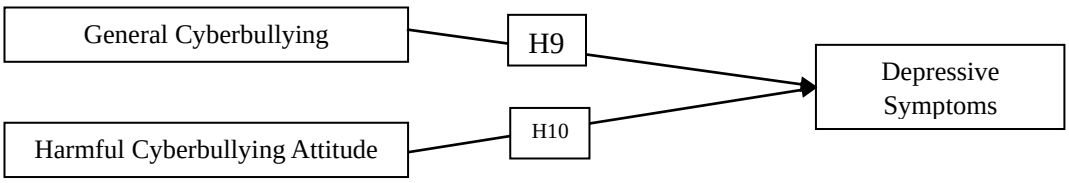

Figure 1: Proposed Model

Source: Authors' own

Although proposed and tested, this relationship was missing some depth and explanatory mechanism. Therefore, it was found that perpetrators can develop guilt for their actions when they realise that their actions might have hurt others and are not in accordance with their ethical constructs. This guilt can take the form of a guilt complex, which may lead to the development of depressive symptoms if not treated. Therefore, we proposed that guilt mediated the relationship between a) GCC and Depressive Symptoms and b) HCA and Depressive Symptoms. Consequently, based on the theoretical and literature premise, the following objectives and hypotheses were formed:

Objective 6: To explore a mechanism that explains the relationship between cyberbullying and depressive symptoms among cyberbullies

H11a: Guit mediates the relationship between general cyberbullying characteristics and depressive symptoms.

H11b: Guit mediates the relationship between general harmful cyberbullying characteristics and depressive symptoms.

It was also found that perpetrators may develop a fear of being caught, socially excluded and have negative repercussions. This fear arises from the law of karma. As discussed in Shree Bhagawad Gita and in the preceding section, a person bears the consequences of their actions, i.e., if actions are positive or good, the consequence is also positive or good and vice versa (The Bhagavad Gita; Reichenbach, 1988; Upadhyaya, 2018; Garg, 2023). Therefore, it was proposed that fear mediated the relationship between a) GCC and Depressive Symptoms and b) HCA and Depressive Symptoms. Therefore, based on the theoretical foundations and literature gaps, Objective 6 (mentioned above) and the following hypotheses were formulated:

H12a: Fear mediates the relationship between general cyberbullying attitudes and depressive symptoms.

H12b: Fear mediates the relationship between general harmful cyberbullying attitudes and depressive symptoms.

Figures 2 and 3 present the proposed model and hypotheses to achieve Objective 6.

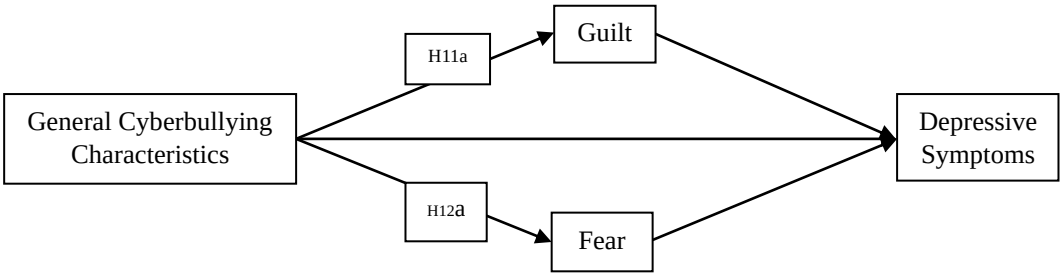

Figure 2: Proposed mediation model between GCC and Depressive Symptoms

Source: Authors' own

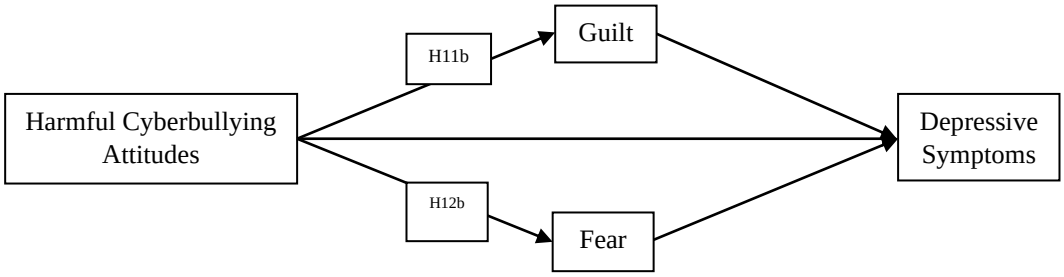

Figure 3: Proposed mediation model between HCA and Depressive Symptoms

Source: Authors' own

3.5 Sampling and Data Collection

3.5.1 Objective 1

Study 1: Bibliometric analysis of cyberbullying from perpetrators' perspective.

Bibliometric Analysis

Bibliometric analysis is an application of quantitative research techniques to the bibliometric data like units of citation, co-occurring keywords, and quantum of publication (Donthu et al., 2021; Broadus, 1987). The bibliometric analysis is

applicable in various fields, including *human resources* (Andersen, 2019), *corporate governance* (Singhania et al., 2020; Singh et al., 2021), *management* (Cui et al., 2022; Zupic & ČAter, 2014), *journalism* (Banshal et al., 2022), and *ecopreneurship* (Guleria & Kaur, 2021). The current study analyses the academic performance of the literature on cyberbullying perpetration by examining the bibliographic data of research articles on the topic using (a) performance analysis of publications, journals, countries, and research areas and determine the most influential articles and (b) science mapping for topical analysis. Finally, to validate the search strategy, we used the PRISMA model.

PRISMA Model

We used Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) model to extract the dataset. The model provides guidelines for transparent and complete reporting of systematic and bibliometric results. In addition, the model helps ensure that the methods and results of the bibliometric analysis study are clearly and fairly reported. Therefore, this reduces bias and improves the reliability of results (Page et al., 2021).

Search Strategy

Database selection

This study uses a dataset retrieved from Clarivate's Web of Science (WoS) database. Though the database of Scopus is considered vast compared to the Web of Science, it has resulted in a literature gap because most studies have used the Scopus database (Gómez Tabares & Correa Duque, 2022). At the same time, the quantum of bibliometric studies based on the Web of Science database is considerably less. Secondly, WoS is regarded as a gold standard database to analyse and assess the academic performance of research articles and scholars (García-Lillo et al., 2023). Thirdly, WoS is an older database than Scopus. Fourthly, WoS uses 68 data tags, unlike Scopus, which uses 43. Lastly, using a single database mitigates a general problem researchers face, i.e., the problem of redundant records (Harzing & Alakangas, 2015). Hence, we extracted the dataset from WoS for this study. Further, based on the accuracy of the journal classification system of WoS, this database is preferred over Scopus, suggest Guleria and Kaur (2021) and Wang and Waltman (2016).

Data Extraction

An initial review of the existing literature informed the use of various terms like *"cyberbullying," "cyber bullying," "bully," "victim," "victimization," "bystander," "cyberbullies," "cyber bullies," and "perpetration"* to present the literature on *"cyberbullying perpetration."* According to the objectives of the present study, the aim was to study literature specifically on perpetrators, meaning literature only on victims and bystanders became out of scope. Narrowing the focus of the search to cyberbullying perpetration may have omitted studies that investigated

cyberbullying perpetration with victimisation or bystanders. Therefore, the authors decided not to limit the initial search to perpetration but manually removed unwanted studies. Hence, "cyberbullying OR cyber bullying" was finalised as the search string. Accordingly, 2792 articles between 2007 and 2022 were retrieved, filtered down to 441. The following subsections highlight inclusion and exclusion criteria and data screening.

Boolean Operation Strategy

Boolean 'OR' was used. The use of OR had two purposes: (1) it was used between the two terms, i.e., cyberbullying and cyberbullying, as these are the most widely used terms to denote cyberbullying; (2) it was used between title, abstract, and author keywords fields to retrieve maximum results. It was desired to include only articles with the word 'cyberbullying' either in the title, abstract, or keywords. Such criterion ensures the listing of articles emphasising the subject matter of the study (Donthu et al., 2021)

Exclusion and Inclusion criteria

Inclusion

Results containing the words 'cyberbullying' or 'cyber bullying' in the *title, abstract, and author keywords* fields of Web of Science were considered. Results were limited to articles and review articles for this study. In addition, the language of the articles was limited to English. Consequently, the dataset was reduced to 2461 articles and review papers.

Exclusion

Generally, it is said that *conference titles* and *book series tiles* do not undergo a robust peer review (Singh et al., 2020; Light et al., 1984; Merton, 1973) and lack bibliometric information, which is a prerequisite for any bibliometric analysis study (Vlase & Lähdesmäki, 2023; Churruca et al., 2019). Hence, our study did not include them. In addition, articles from the year 2023 were excluded. Also, no grey literature was included in our study as it "is not bound by the same publishing conventions that characterise white literature and come in a variety of forms poses challenges for data management, extraction, and synthesis" (Adams et al., 2017, p. 434). Another prerequisite for a publication to qualify for our study was that it has to be published in Web of Science-listed journals. As a result, the dataset was further reduced to 2445 articles and review papers.

Screening

The screening of publications is based on the suggestions of Singh et al. (2021) and Agarwal et al. (2022). It was conducted in two stages. Initially, the titles of the publications were screened. Studies with titles pertaining only to victims or bystanders were removed. In the second stage, abstracts of the publications were

manually analysed to eliminate the ones not belonging to the study. Here, the publications on 'cyberbullying perpetration' or articles from the angle of cyberbullies were considered. Hence, we considered a dataset of 441 articles and review articles for this study. Figure 4 represents the search strategy used and the PRISMA model, while tables 1 and 2 report the PRISMA checklist and abstract checklist, respectively.

Table 1: PRISMA checklist for bibliometric SLR

Title: Identify the report as a systematic review.	Mentioned in Title
Abstract: Check List	Refer to Table 2
Rationale	Mentioned in the Introduction and Literature Review
Objective	Reported on Page 6
Eligibility criteria	Reported in: Database – Database Selection Studies – Inclusion and Data Extraction Strategies
Information sources	Reported in Database Selection
Search strategy	Reported from Pages 7 to 9
Selection process	Reported in: Database – Database Selection Data Extraction Boolean Operation Exclusion and Inclusion Screening
Data collection process	Reported in Data Extraction
Data items	Reported in: Data Extraction Boolean Operation Exclusion and Inclusion Screening
Bias	Articles and review papers were extracted from only the Web of Science database. This could have limited the number of articles studied. Documents were only in the English language, thus leaving articles from other languages.
Synthesis methods	Statistical Tools and Graphs in MS Excel were used. VoS Viewer was used to visualise the results.
Study selection	All studies had to be based on perpetrators of cyberbullying.
Study characteristics	As it is a bibliometric analysis, it is not needed.
Discussion	Everything has been provided in the discussion section.
Support	No funding was received.

Competing interests	The authors declare no conflict of interest.

Source: Authors' Creation

Table 2: Abstract checklist

Title: Identify the report as a systematic review.	**Reported**
Objectives	**Reported**
Eligibility criteria	**Reported**
Information sources	**Reported**
Included studies	**Reported**

Sources: Authors' own

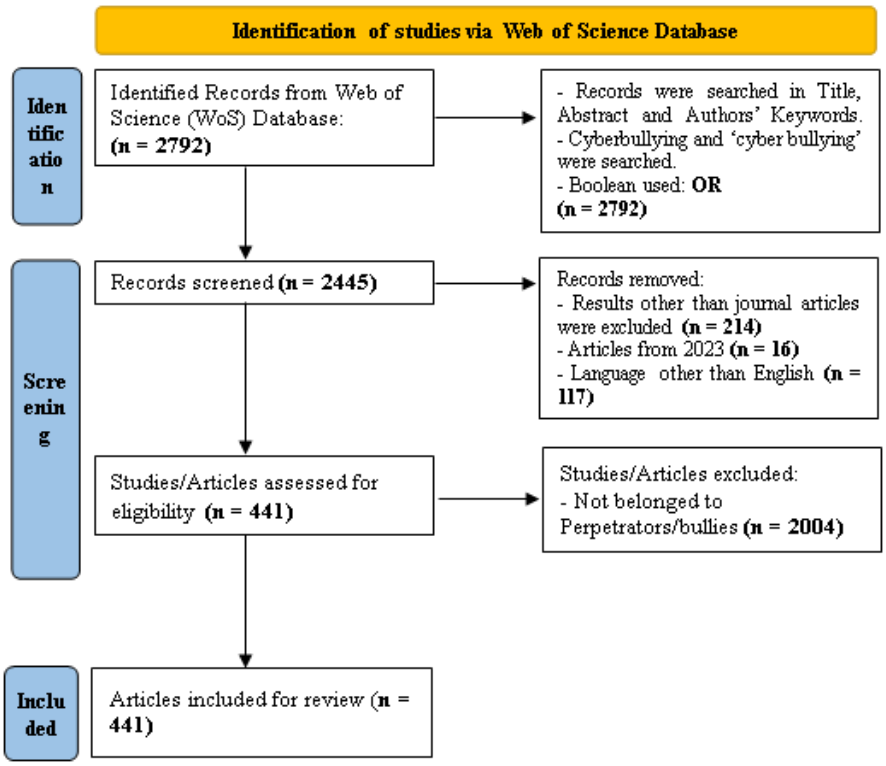

Figure 4: PRISMA Model

Source: Authors' Creation, PRISMA

3.5.2 Objective 2

Study 2: Bibliometric analysis on cyberbullying and mental health.

Database selection: The SCOPUS database was used to extract data for bibliometric analysis. SCOPUS is the largest database of peer-reviewed scientific literature, and it includes journals, books, and conference proceedings. Other databases such as

Google Scholar, Pubmed, PsycINFO, and Web of Science (WoS) are also available, but the SCOPUS database was used as it rendered results more relevant to the context of this study. Google Scholar does not provide a dataset in a format suitable for bibliometric analysis. The PubMed dataset predominantly comprises research in life sciences and biomedical topics, whilst the PsycInfo database consists of works in the field of psychology. However, cyberbullying studies are covered under several themes, such as psychology, human resources, economics, medicine, education, sociology, etc. Also, SCOPUS is the largest database, and it provides information regarding the most prominent authors, countries, affiliations, journals, and publication years, both in tabular and graphic form. Therefore, the SCOPUS database is preferred over all other available databases.

Data extraction: Previous researchers used terms such as "cyberbullying," "cyberbullying," "mental health," "bully," "victimization," "perpetration," and "bystander" in their studies. In the present study, terminology such as perpetrators or victims was not used, as it would have restricted the study to exploring mental health issues experienced either by victims or perpetrators only. Moreover, based on our previous bibliometric study on cyberbullying, it was found that (a) no bibliometric study had analyzed the literature on the nexus of cyberbullying and mental health, and (b) mental health is one of the major fields of study in collaboration with cyberbullying (Bansal et al., 2023a). Although various authors have used a vast list of keywords while retrieving a dataset on mental health (Guo et al., 2023), they have skipped many terms; for instance, ‘suicidal,’ ‘suicidal tendency,’ ‘suicide,’ ‘suicidal ideation,’ and ‘deviant behavior.’ Also, it was observed during our extensive literature review that apart from specifying mental disorders, the term ‘mental health’ was also used as one of the keywords or extended keywords. Therefore, we have used ‘mental health’ as an umbrella term to not skip any study that might have explored any one mental health problem arising out of cyberbullying. Since the objective of the study was to analyse academic knowledge on cyberbullying and mental health from both the victims’ and perpetrators’ perspectives, “cyberbullying” OR “cyber bullying” AND “mental health” were used in the search string. Consequently, 628 documents were retrieved.

Inclusion and exclusion criteria: Results that contained 'cyberbullying,' 'cyber bullying' and 'mental health' in the title, abstract and keywords were deemed fit for the study. Documents published only in English until 31 December 2022 were considered as publications for the year 2023 were over during the data exploration time frame, and time frame limiting is based on the recommendations of various researchers, including Singh *et al*. (2021) and Donthu *et al*. (2021). Boolean 'OR' was used to maximise the results, whereas 'AND' was used to limit the research results to mental health issues. Based on these inclusion and exclusion criteria, 576 articles met the requirements. Documents such as book titles and conference papers were excluded, as they are not always subjected to a rigorous peer-review process (Singh et al., 2021). This resulted in the exclusion of 108 documents. Finally, 468 documents were considered for the data screening process.

Data screening: The authors studied the abstracts of 468 documents and found that they all met the criteria. Figure 5 presents the search model.

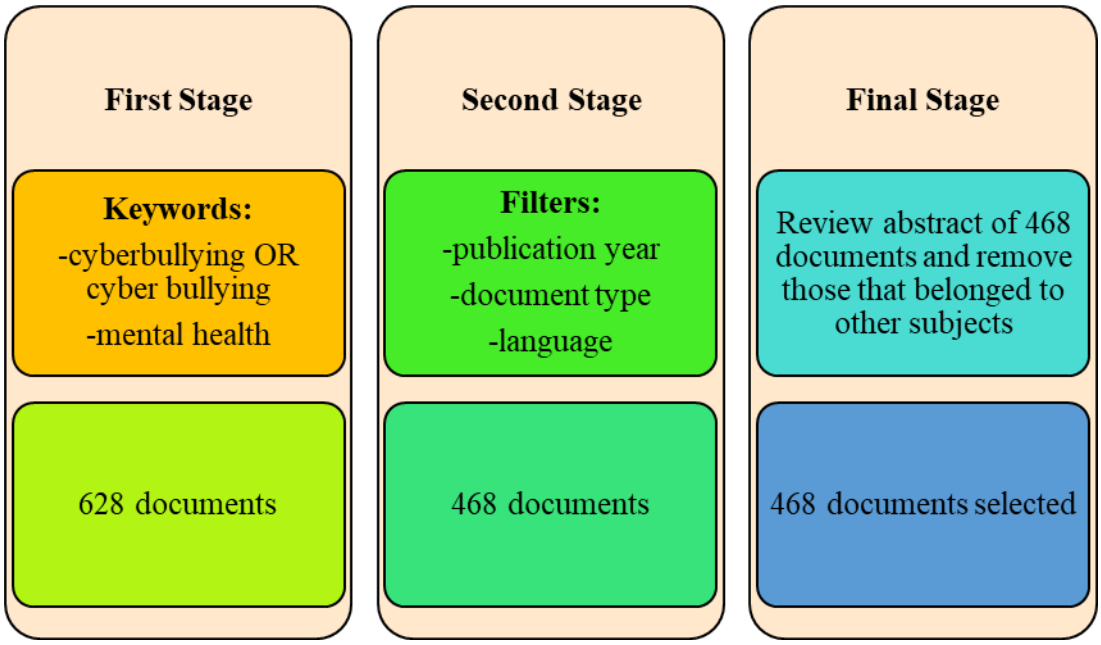

Figure 5: Search Model

Source: SCOPUS, Authors' creation

3.5.3 Objective 3

This study examined the psychometric properties of the Cyberbullying Attitude Scale (CBAS) in Indian college students with the help of two independent studies.

Study 1 – A structured questionnaire was used to collect the data. The first section assessed demographic information like gender, courses (science, commerce, or humanities), and education qualification (undergraduate, postgraduate, or doctoral). The second part of the questionnaire captured participants' bullying attitudes in cyberspace. This online survey was conducted using convenience sampling to collect the data from a sample of 435 college students of DTU by sharing the questionnaire on their official email addresses. Table 3 shows the demographic information of the respondents. Male students were 225 (51.7%), and females were 210 (48.2%). The age of students ranged between 17 to 31 years. Also, students registered in undergraduate, postgraduate, and doctoral courses were 194 (44.6%), 187 (43%), and 54 (12.4%). Of the surveyed students, 187 (43.0) were enrolled in science courses, 154 (35.4%) in commerce (including management) courses, and 94 (21.6%) in humanities courses.

Study 2 – An online survey based on convenience sampling was conducted to collect the data from 400 college students of DTU. There were 225 (56.3%) male students and 175 (43.7%) female students, of which 143 belonged to undergraduate, 237 were from postgraduate, and 20 were from doctoral courses. Also, out of these 400 students, 259 belonged to science, 72 were from commerce (including management), and 69 were from humanities courses. Table 3 also summarizes the demographic information of this sample.

Table 3: Demographic Structure

Variables	Category	Study 1		Study 2
		Subsample 1	Subsample 2	
Gender	Female	112	99	153
	Male	106	118	247
Course	Under-graduate	101	93	143
	Postgraduate	77	110	237
	PhD	40	14	20
Stream	Science	67	120	259
	Commerce (including Management)	103	51	72
	Humanities	48	46	69

Source- Primary Data

3.5.4 Objective 4

The data was collected from 844 people of different ages in both online and offline modes. A structured questionnaire was posted on social media platforms Telegram, LinkedIn, and Facebook groups. We also visited district parks and community centres to collect data, especially from older people. The demographic description of the sample is reported in Table 4.

Table 4: Demographic Data

Variable	Category	N (Study 1)	N (Study 2)
Generation	Z	154	315
	Y	411	272
	X	279	257
Gender	Male	464	464
	Female	380	380
Yearly Income	Less than INR 8 lacs	367	360
	INR 8 lacs to 15 lacs	262	255

	More than INR 15 lacs	215	231
Education level	Less than 12th or below	236	181
	Graduation	410	246
	Post-graduation & above	198	417
Profession	Self-employed	192	-----
	Government Job	220	-----
	Private Job	244	-----
	Student	188	-----
ICT Usage per day	Less than 3 hrs.	280	210
	3 - 7 hrs.	343	418
	7 hrs. or above	221	216
Locality	Town	-----	268
	Megacities	-----	389
	Rural Areas	-----	187
Family Structure	Nuclear Family	-----	384
	Joint Family	-----	294
	Extended Joint Family	-----	166

Source: Primary Data

3.5.5 Objectives 5 and 6

Previous studies have used cross-sectional research designs that have their own limitations. For instance, Wang et al. (2020) suggest that cross-sectional studies do not follow individuals over a period of time, which hinders the interplay among variables. The hindrances make it challenging to infer the causal effect of the independent variable on the dependent variable. Also, the authors suggest avoiding cross-sectional research design in studies that explore the impact of variables on the health of individuals. Moreover, replication of studies in diverse work settings is pivotal for better generalisation and acceptability of the results (Kowalski et al., 2022). Therefore, a multi-study longitudinal research design was adopted to have a more robust understanding of the interplay between variables and better-generalized results. The first study was conducted on IT college students enrolled in courses like B.Tech (IT), MBA (IT), and other IT-related courses. The second study replicated the results on employees working in various organisations in the Indian IT sector. It is believed that IT professionals have a sound technical understanding of the digital space and ICT. They are aware of the security and ethical concerns of the digital environment (Verma & Garg, 2022). Therefore, they were chosen as the participants of the study 2. Data was collected through a structured questionnaire posted on social media platforms like Facebook, LinkedIn, WhatsApp, and Telegram. All the participants were offered a free two-day workshop on bullying and mental health. The data was collected in three waves. At time T1, participants' demographic information and information on cyberbullying attitudes were sought. All respondents were given a unique code. Fear and guilt were measured after one month (at time T2). Finally, after another month (T3), data related to depressive symptoms were collected. In the first study, 668, 579, and 480 students responded at times T1, T2, and T3, respectively. In the second study, 658, 547, and 402 employees responded at

times T1, T2, and T3. Cochran (1977) suggested a sample size of 384 at a significance level of 0.05. Thus, samples from both studies seem adequate. Table 5 presents the demographic information of the participants.

Table 5: Demographic information

Variables	Category	Study 1	Study 2
Gender	Male	251	192
	Female	229	210
Age	Below 25 years	269	58
	26-30 years	176	121
	31-35 years	25	109
	Above 35 years	10	114
Education Qualification	Under-graduate	198	89
	Postgraduate	199	267
	PhD	83	46
Stream	Science	181	-----
	Commerce	190	-----
	Humanities	109	-----
Relationship Status	Single	309	159
	Committed	159	131
	Married	12	92
	Widowed	-----	20
Managerial Level	Lower	-----	275
	Middle	-----	102
	Top	-----	25

Source- Primary Data, Study 1- IT college students, Study 2- Working professionals/employees

3.6 Instruments

Since this study uses a mixed method study, objective 1 was mainly based on the review techniques adopted in bibliometric studies. However, objectives 2, 3, and 4 were based on the use of psychological scales that measured their own data. These scales were:

Cyberbullying Attitude Scale (CBAS)

Barlett et al.'s (2016) nine-item self-reported scale measured students' attitudes toward cyberbullying. It examines two forms of cyberbullying, i.e., hostile cyberbullying attitude (HCA) and general cyberbullying characteristics (GCC), rated on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). However, Bansal et al. (2022) explored the scale's psychometric properties among Indians. They recommended a seven-item scale with adequate reliability and validity in Indian settings. Accordingly, a seven-item scale was used in this study. Some

scale items are “it is fun to tease or make fun of others with offensive messages online” and “harming others using electronic means is acceptable.”

Guilt

Trauma-Related Guilt Inventory (TRGI), developed by Kubany et al. (1996), was used to measure guilt. It is a thirty-two-item scale rated on a five-point scale ranging from 1 (not at all) to 5 (extremely true). To suit the needs of this study, the statements were modified to include instances of cyberbullying. A few modified statements are “I was responsible for cyberbullying others” and “I experience intense guilt related to cyberbullying others.”

Fear

The Negative Effects Questionnaire (NEQ) (Rozental et al., 2019) was used to assess the fear among the respondents. It is a twenty-item scale rated on a five-point rating scale ranging from 0 (being minimum) to 4 (being maximum). Some statements were modified to include cyberbullying in the context of this study. A few statements are “I experienced more unpleasant feelings as I realise that I deter harm to others” and “I became afraid that other people would find out about my act of cyberbullying others.”

Depressive Symptoms

Depression symptoms were captured using the PHQ-9 scale developed by Kroenke et al. (2001). The scale is a nine-item scale used as a quick depression assessment tool amongst the respondents. It is based on a four-point rating scale ranging from 1 (“not at all”) to 4 (“nearly every day”). A few scale items are “little interest or pleasure in doing things” and “poor appetite or overeating.”

Weight-based Teasing Scale

In the third section, Eisenberg et al.'s (2003) Weight-Based Teasing Scale (WBTS) was used to measure the teasing-based victim feelings among the participants. It is a five-item scale that captures one's feelings on a five-point rating scale ranging from 0 (never) to 4 (at least once a week). A few statements of the scale are "you are treated with less respect than other people" and "you are called names or insulted."

Gratitude Questionnaire 6

The fourth section captured respondents' experience of gratitude using McCullough et al.'s (2002) Gratitude Questionnaire 6 (GQ-6) scale. It is a six-item scale that rates gratitude on a seven-point rating scale ranging from 1(strongly disagree) to 7 (strongly agree). It consists of statements like "I have so much in life to be thankful for" and "I am grateful to a wide variety of people."

Moreover, each of the questionnaires shared was in English. Indian education system promotes English as one of the languages essential for students' academic and professional success in this globalised world. English is taught from the very beginning of the student's academic life. Thus, Indian students develop a good understanding of the language till they reach college to pursue their graduation and higher degrees (Garg & Mehak, 2021). Hence, the original English version of each scale was used in this study. Also, a short description of the study was provided to the participants, and their informed consent was taken. The anonymity of the participants was promised. Also, respondents were assured of strict academic use of data (Singhania, Singh, & Aggrawal, 2022). They were also ensured that collected data would not be shared with any third party.

3.7 Methods Adopted

Table 6: Overview of methods adopted

Variables	Qualitative Phase	Quantitative Phase
Objective 1	Data Screening and science mapping	Performance analysis – Citation and Publication Trend Analysis, Country Analysis, articles' and journals' performance analysis.
Objective 2	Data Screening and science mapping	Performance analysis – Citation and Publication Trend Analysis, Country Analysis, articles' and journals' performance analysis.
Objective 3	Literature review - Analyse previous questionnaires and choose the best suited one.	Factor Analysis – EFA and CFA, and Reliability and Validity Analysis.
Objective 4	Not Applicable	Descriptive Statistics, CFA, Reliability and Validity Testing, one-way ANOVA, and t-test.
Objectives 5 and 6	Not Applicable	Descriptive Statistics, Reliability and Validity Testing, Common Method Bias, Correlation, Hierarchical Regression, and Mediation Analysis, PROCESS macro.

Source- Authors' Own

3.8 Common Method Bias

Although the last objective of the study is based on a longitudinal design, which reduces the probability of common method bias, Harman's one-factor test was conducted to assess the significance of common method bias in both studies. It was observed that factor analysis of all study items did not yield a single factor, which,

according to Chang et al. (2010), negates the possibility of significant CMV. The largest factor explains 32.81% of the variance in Study 1 and 30.27% in Study 2.

3.9 Analysis of the Data

3.9.1 Objective 1

The authors used Microsoft Excel and Vos-Viewer to explore the dataset as soon as the data was finalised. Initially, descriptive statistics were applied to create various tables and charts to explore the pattern within the dataset. The number of publications and citations, top countries, journals, most studied research areas, most cited articles, and keyword evolution were used to identify the trends in the area (Agarwal et al., 2022). Next, citation and Co-citation analysis were used to identify characteristics of cyberbullying perpetration (Singh et al., 2021; Andersen, 2019). Citation analysis was used to identify the top countries, major journals, and most influential articles. Similarly, a co-citation analysis supplemented the citation analysis by examining the two articles cited in a common article, enhancing the intellectual base (Agarwal et al., 2022; Singh et al., 2021; Small, 1973).

3.9.2 Objective 2

Microsoft Excel and VOSviewer were used to analyse the data obtained from the SCOPUS database. Specifically, descriptive statistics were applied to generate various tables and charts to explore patterns in the data. These charts and tables aided in the analysis of publications and citation trends. VOSviewer was employed to analyse the most influential articles, journals, and authors, rank nations based on their publications and citation activity, and perform keyword analysis and evolution. The study also examined the evolution of academic knowledge on the subject across different countries, authors, and journals. Citation and co-citation analyses in VOSviewer were utilised to conduct the aforementioned analyses, as suggested by previous researchers such as Singh et al. (2021) and Donthu et al. (2021).

3.9.3 Objective 3

Study 1: Factor Structure Validity

The sample was divided into two subsamples, odd and even entries. Exploratory Factor Analysis (EFA) was applied to subsample 1, and Confirmatory Factor Analysis (CFA) was applied to subsample 2. EFA and CFA were used to extract the factor structure and confirm it, respectively. EFA was conducted in IBM SPSS v21, and CFA was conducted in IBM AMOS.

Study 2: Reliability and Validity Analysis

The reliability of the seven-item Indian CBAS was verified with the help of Cronbach's alpha (Cronbach & Noronha, 2004) (CA) and composite reliability (CR) values. The Average Variance Explained (AVE) values were used to assess the convergent validity of the Indian version of CBAS. The acceptable value of Cronbach's alpha (Cronbach & Noronha, 2004) and composite reliability is 0.70 (George & Mallery, 2003), and that of AVE is 0.50 (Fornell & Larcker, 1981). The Fornell & Larcker (1981) testing system was used to judge the discriminant validity. Also, the criterion validity of the Indian CBAS was explored by examining the correlation coefficients between the Indian CBAS, WBTS, GQ-6, and PhQ-9 scores. Cronbach's alpha values and correlation coefficients (Cronbach & Noronha, 2004) were determined using SPSS 21. The composite reliability and AVE values were calculated with the help of the formulas mentioned below. Moreover, we used WBTS as a good convergent indicator because the study conducted on cyberbullying by Cavalcanti et al. (2019) suggests a positive correlation between various forms of bullying and cyberbullying in Brazil, but they did not test the correlation between weight-based teasing and cyberbullying. Furthermore, the study conducted by Jolliffe et al. (2019) also suggests psychological disorders, especially depressive symptoms, as the outcome of the crime. Moreover, the jail records and studies conducted on the inmates of Tihar Jail, New Delhi, second the recommendations of Jolliffe et al. (2019), as these records and studies have shown depressive symptoms as the result of offending in the inmates of Tihar Jail, New Delhi (Jolliffe et al., 2019; Vipassana Research Institute, 2000).

Equation 1: Composite Reliability

$$\mathrm{CR} = \frac{\sum \boldsymbol{\lambda i^2}}{\sum \boldsymbol{\lambda i^2} + \sum(\mathbf{1} - \boldsymbol{\lambda i^2})}$$

Equation 2: Average Variance Extracted

$$\mathrm{AVE} = \frac{\sum \boldsymbol{\lambda i^2}}{\mathrm{N}}$$

3.9.4 Objective 4

ANOVA and t-test in IBM SPSS v21 were used to analyse the mean variations based on intergenerational and demographic differences. Tukey's HSD was used to explore generational-based variations in cyberbullying attitudes.

3.9.5 Objectives 5 and 6

The relationships between the two dimensions of cyberbullying and depressive symptoms were examined using correlation and hierarchical regression analysis. As suggested by previous studies, gender and age have been controlled while determining the influence of cyberbullying on depression symptoms (Turliuc et al., 2020; Chu et al., 2018; Balakrishnan, 2015). The mediation effects of guilt and fear were examined using the PROCESS macro (Hayes, 2017) in SPSS 21. PROCESS differs from other tools and techniques, like structural equation modelling (SEM), in various ways. It simplifies the implementation of the various moderation and mediation models as the user needs to define roles for each variable, and the rest of PROCESS determines the path coefficients and various statistics (Hayes et al., 2017). Further, one of the significant benefits of using PROCESS for a mediation model is that it estimates the parameters of each equation of the model independently while treating the model as a whole, whereas SEM determines the estimates of the whole model only. Moreover, these estimates are bootstrapped predominantly, which is not valid for every SEM model (Hayes et al., 2017). Therefore, PROCESS was deemed suitable for this study.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the discussion and results of the analyses undertaken to achieve the said research objectives. The flow of the section is as follows. First, it presents the results of the two independent bibliometric studies conducted to understand the literary performance of the literature of cyberbullying from the perpetrator's perspective and cyberbullying and mental health. Second, the results of the psychometric property analysis of the CBAS in the Indian context are reported. Third, the results of the generational and demographic differences causing variations in cyberbullying attitudes are stated. Last, the results establishing the mechanism that explains the proposed relationship between cyberbullying and depressive symptoms are reported.

4.2 Results and Findings

4.2.1 Objective 1

Article Publication and Research Area Analysis

Figure 6 represents the volume of annual publications from 2007-2022. There were few publications in 2007, and the number of publications remained in the single digits for the four subsequent years. However, the number of annual publications exceeded 10 in 2012 and increased slowly for the next five years. The number of publications has increased exponentially during 2019-2022. The number of articles on cyberbullying perpetration during 2020, 2021, and 2022 were 64, 87, and 96, respectively. This exponential rise in the number of publications is due to a rise in the cases of cyberbullying during COVID-19 due to the rapid adoption of information and communication technologies (ICT) (Wang et al., 2019), especially in developing countries.

Figure 7 suggests that the citations of cyberbullying perpetration articles are also increasing year-by-year. These results reflect a growing interest in exploring cyberbullying phenomena from the perpetrators' perspective.

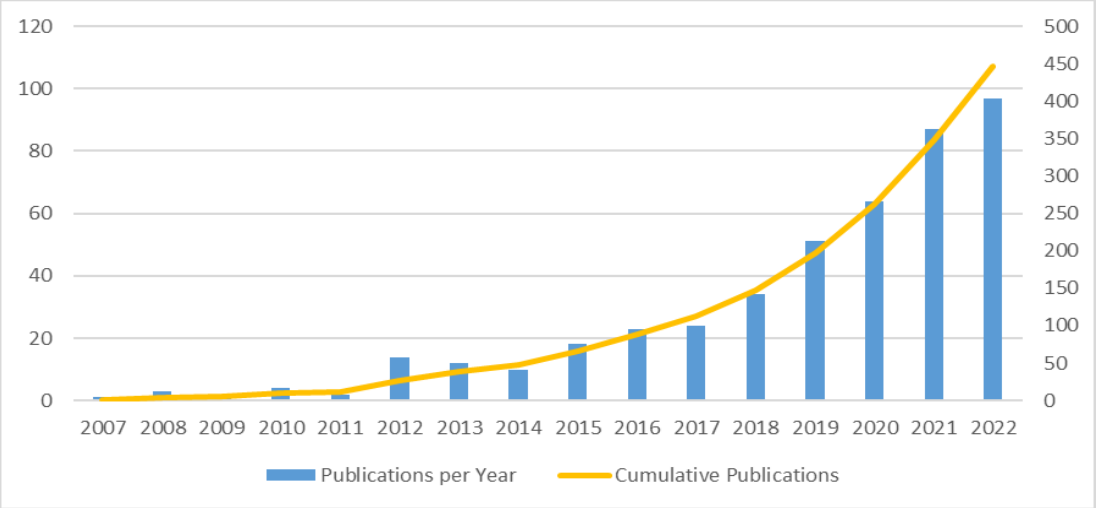

Figure 6: Publications per Year and Trend Analysis

Source: WOS Database and VOSviewer

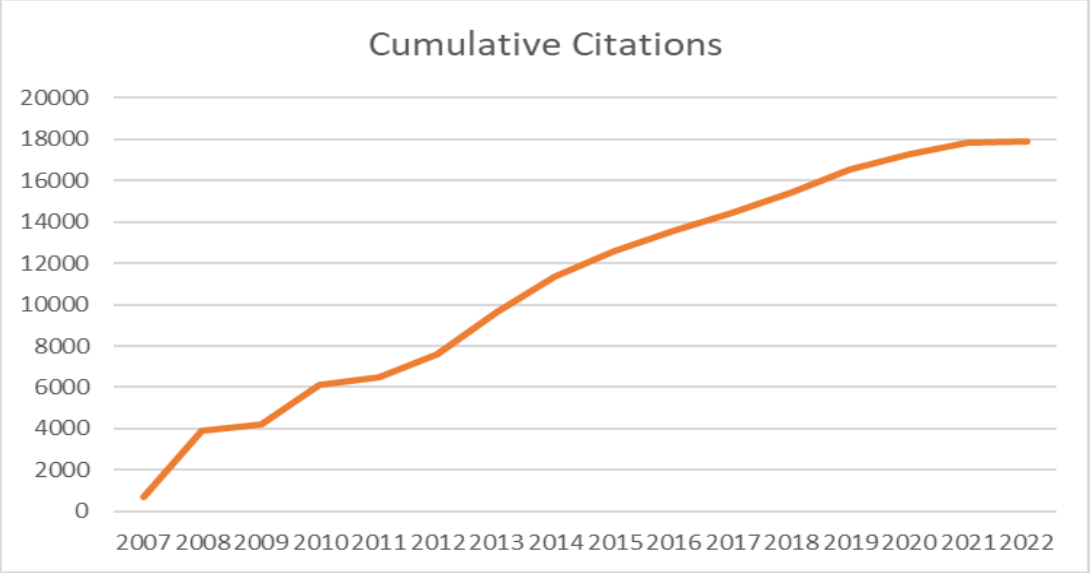

Figure 7: Citations Trend Analysis

Source: WOS Database and VOSviewer

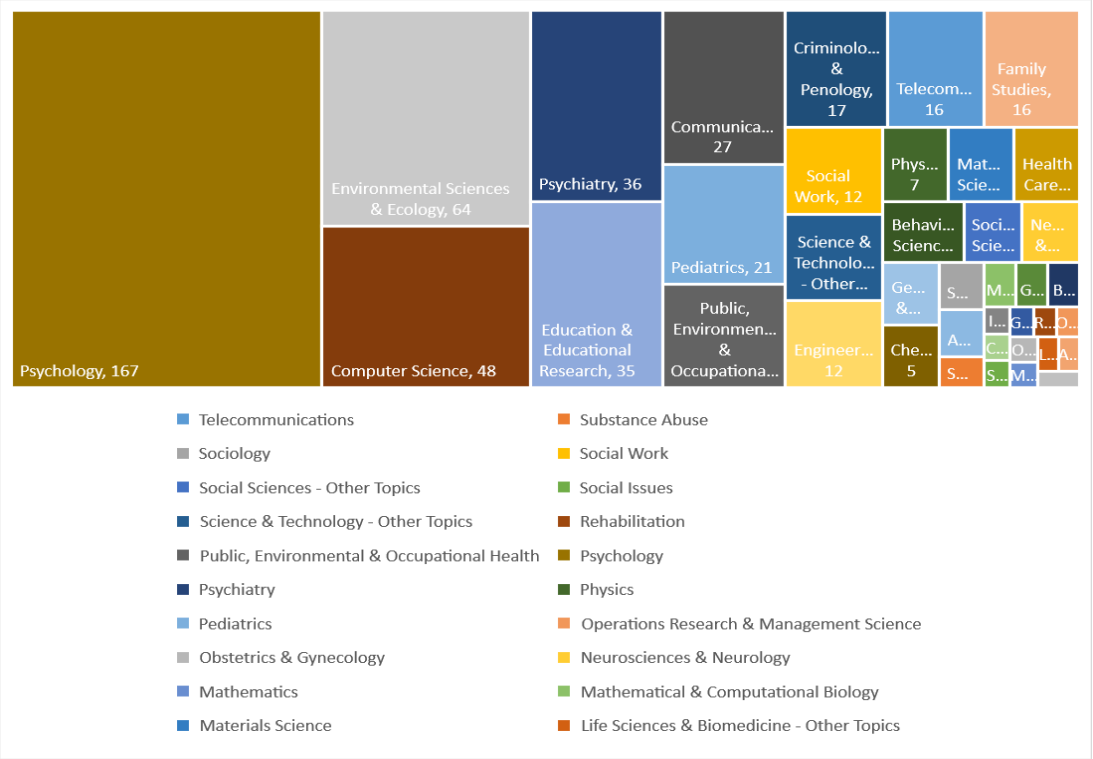

Figure 8: Research Areas Coverage in Cyberbullying Literature

Source: WOS Database and MS Excel

Figure 8 depicts a heat map of cyberbullying perpetration-associated research areas. The prominent research areas publishing cyberbullying perpetration studies are psychology (167 articles), environmental science and ecology (64 articles), computer science (48 articles), psychiatry (36 articles), educational research (35 articles), communication (27 articles), and paediatrics (21 articles). It suggests the prominence of exploration of the psychological impact of cyberbullying on cyberbullies. For instance, Bansal et al. (2022) suggested cyberbullying leads to depressive symptoms among cyber perpetrators.

Analysis of publications by countries

Figure 9 depicts the top twenty (20) nations with the highest number of publications on cyber perpetration. The USA is the leading country with 102 publications and seven thousand nine hundred and thirteen (7913) citations, trailed by Spain with 82 publications and thousand seven hundred and ninety-seven (1797) citations. However, when compared based on citations, England follows the USA with four thousand seven hundred and sixteen (4716) citations. Interestingly, the first three nations are developed nations. The ICT advancements in these countries are decades long. Hence, the researchers are more aware and active in cyberbullying perpetration. Table 7 also explores a more severe characteristic that a significant chunk (78.9%) of the articles come from developed economies like the USA (102

articles), Spain (82), and England (64). This can be because of the technological superiority and ease of technological access in developed economies. In contrast, the People's Republic of China appears to be the leading country on the list of developing economies. The nation has witnessed rapid technological advancements that might have resulted in high exposure to ICT and cyberbullying (Yin et al., 2021; Zhao & Yu, 2021).

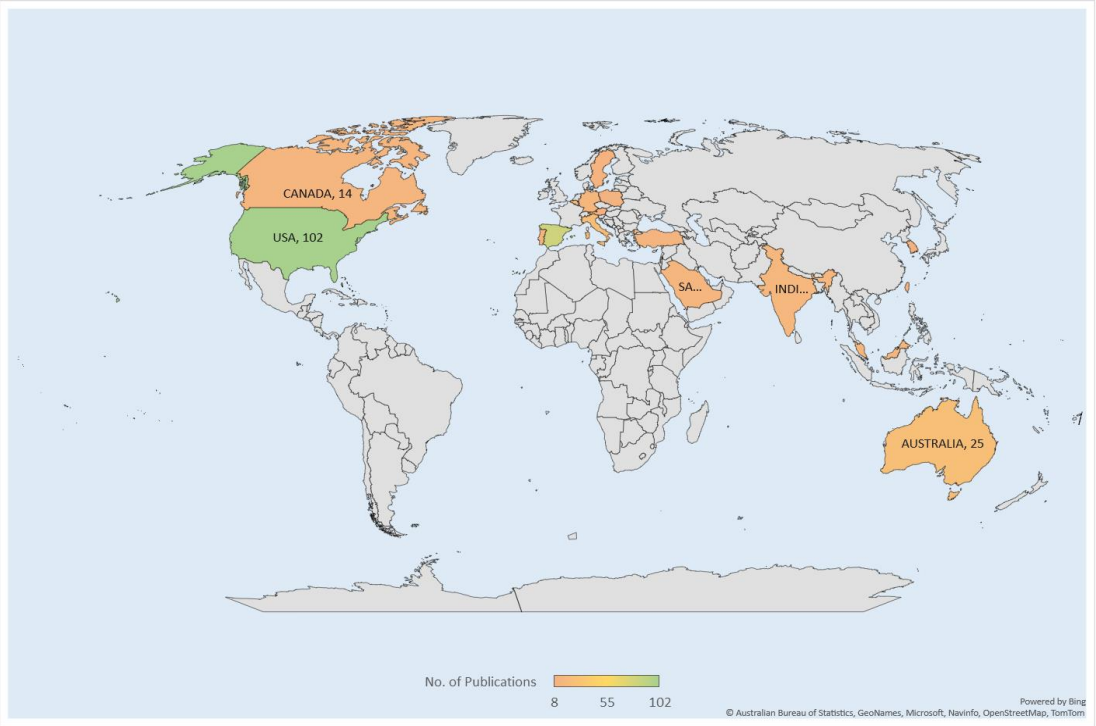

Figure 9: Publications by Top 20 Countries

Source: WOS Database and MS Excel

Table 7: Top 20 countries by publications

Countries	Publications	Citations	Type of Economy
USA	102	7913	Developed
Spain	82	1797	Developed
England	64	4716	Developed
Peoples Republic of China	40	150	Developing
Australia	25	737	Developed
Italy	23	822	Developed
Belgium	16	523	Developed
India	16	57	Developing
Germany	15	771	Developed
Canada	14	249	Developed

Malaysia	14	113	Developing
Saudi Arabia	14	95	Developing
Portugal	13	263	Developed
Turkey	13	165	Developing
Sweden	11	885	Developed
Poland	10	241	Developing
Taiwan	10	46	Developed
Scotland	9	225	Developed
South Korea	9	108	Developed
Austria	8	31	Developed

Source: Web of Science Data

Influential Journals

Table 8: Top 10 Journals as per citations

Journals	Documents	Citations	Publisher	Since	JCI
Journal Of Adolescent Health	9	1910	Elsevier Science	1980	1.91
Computers In Human Behavior	30	1446	Elsevier Science	1985	2.59
Aggression And Violent Behavior	6	531	Elsevier Science	1996	1.17
Cyberpsychology Behavior And Social Networking	9	424	Mary Ann Liebert	1998	1.31
International Journal Of Environmental Research And Public Health	64	359	MDPI	2004	0.93
Comunicar	7	289	Grupo Comunicar	1994	2.94
Frontiers In Psychology	37	240	Frontiers Media Sa	2007	1.03
International Journal Of Mental Health And Addiction	6	156	Springer	2002	2.15
IEEE Access	16	145	IEEE	2013	0.93
BMC Public Health	6	96	BMC	2001	1.02

Source: Web of Science Data

Table 8 represents the top 10 journals based on Web of Science database citations. The “Journal of Adolescent Health” by Elsevier Science ranks first with

thousand nine hundred and ten (1910) citations. The journal is multi-disciplinary and covers topics related to the well-being of adolescents and young adults. The most cited study, “Psychological, physical, and academic correlates of cyberbullying and traditional bullying”, was conducted by Kowalski and Limber (2013). The study investigated the correlation between children's and adolescents’ encounters with traditional bullying and cyberbullying. The study further investigated their effects on the health and academic performance of the understudies. It was found that children and adolescents categorised in the cyber bully/victim category had the most adverse scores on health and academic performance. The results of this category were followed by those of the cyberbully category. This journal is followed by “Computers in Human Behavior” by Pergamon-Elsevier Science Ltd with thousand four hundred and forty-six (1446) citations, followed by “Aggression and Violent Behavior” by Pergamon-Elsevier Science Ltd with 531 citations. The most cited study in Computers in Human Behavior is a review by Slonje et al. (2013), which covered the issues in the literature on cyberbullying. The findings included definitional issues, summarised the types of cyberbullying, and presented works clarifying the overlap between cyberbullying and traditional bullying. The study also discussed prevention strategies. For instance, the authors recommended that the concept of repetition in cyberbullying is complex. They suggest that even a single act of cyberbullying can get out of control because of the nature of technology. The authors then clarified the term ‘*power imbalance*’ in the context of cyberbullying by suggesting that power imbalance here refers to the internet and digital proficiency. Lastly, while discussing the types of cyberbullying, the authors highlighted that though the then literature has investigated cyberbullying from the point of view of media usage, specific use of ICT, and cyber behaviours, the future advancements in ICT and behavioural displays will further segregate the types of cyberbullying (Brewer and Kerslake, 2015). These journals were followed by “Cyberpsychology Behavior and Social Networking” by Mary Ann Liebert, followed by the “International Journal of Environmental Research And Public Health” and “Comunicar.” A seminal study from the Cyberpsychology Behavior and Social Networking journal was conducted by Menesini et al. (2012). The study was conducted in six European countries and systematically analysed the role of five definitional norms of cyberbullying. The results suggested that results clearly distinguished and categorised cyberbullying in power imbalance (category 1), intentionality (category 2), and anonymity (category 5). Though the results of the other two categories were ambiguous, a general consensus was provided on their applicability. Additionally, apart from those belonging to psychology, most of these 20 journals belong to behavioural sciences and human-computer interaction, followed by journals belonging to criminology and adolescents.

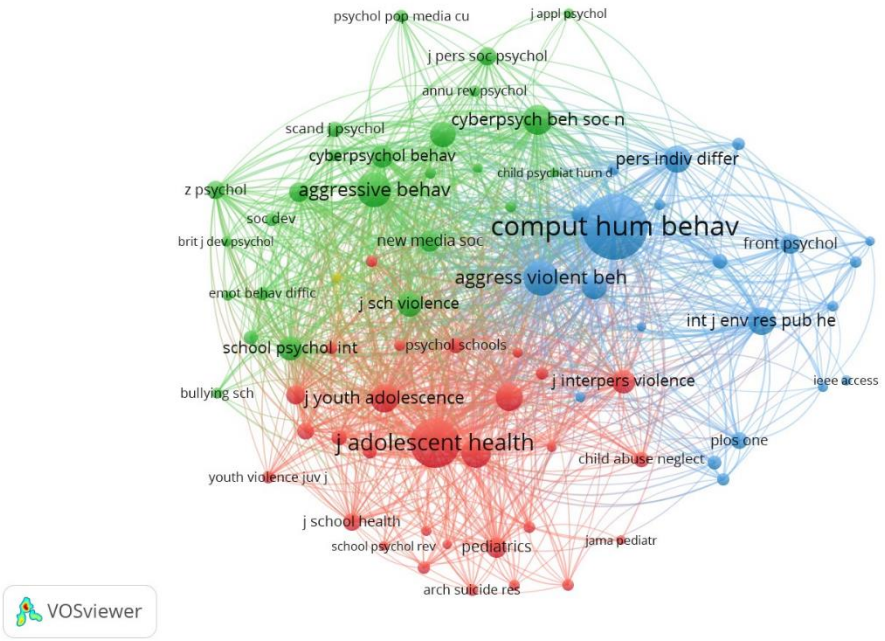

Figure 10: Journal Co-Citation Analysis

Source: WOS Database and VOSviewer

Figure 10 presents the results of the journal co-citation analysis (JCA). According to Singh et al. (2021), the various nodes presented in the JCA map "represent the number of co-citations associated with the respective journal" (p. 62). The proximity of the journals determines the frequency of their co-citation (Andersen, 2019; Zupic & Čater, 2014). The links of the nodes determine the article's co-citation as it appears in the related journals (Singh et al., 2021). Each node's colour depends on the co-citation frequency (Donthu et al., 2021; Singh et al., 2021). As a result, the colours of the nodes represent the commonality between the content published by the journals (Zheng & Kouwenberg, 2019). Consequently, our study explores that the journals presented in a) 'red colour' publish articles related to adolescents, youth, and child psychology, b) those in 'blue colour' contain articles related to human-computer interaction and individual psychology, and c) finally, those from 'green colour' publish articles relating to aggression, media use and bullying. Journals from the red cluster have published studies that have clarified the ambiguity in the literature on cyberbullying, clearly demarcated the categories in which cyberbullying can be divided, and discussed the age and gender differences in cyberbullying perpetration (Navarro et al., 2015; Slonje et al., 2013). Another study has explored the engaging behaviour of high school and middle school students in bullying and sexual harassment through online media (Leemis et al., 2018). The authors found that students with higher levels of anger, pornographic exposure, and self-esteem were significantly associated with higher sexual harassment and cyberbullying attitudes (Leemis et al., 2018). Journals from the blue cluster have published some seminal works in this field. The study conducted by Smith et al. (2008) is a highly cited work and presents primary literature on cyberbullying. It is

this research article in which the authors have provided the most widely accepted definition of cyberbullying. This definition has also been discussed in our study at various points. Smith et al. (2008) also suggested that cyberbullying is a new tool for bullies that differs from traditional bullying and has a more detrimental impact on its victims. Another seminal study from the cluster was conducted by Sourander et al. (2010). The authors found that a major percentage of understudies reported to be cyberbullies only, whereas the cyber-victims shared the least. Further, results indicated a strong positive association between cyberbullying status and hyperactivity, degraded social behaviour, and substance abuse. Finally, the results indicated a growing association between cyberbullying and psychiatric and psychosomatic problems. Lastly, the journals from the green cluster have published studies like Johansson and Englund (2020), which proposed a relationship between "cyberbullying, physical, verbal and relational bullying" (Johansson & Englund, 2020, p. 1). The results indicated significantly strong associations between cyberbullying, relational bullying, and anxiety. Another study tested bidirectional associations between cyberbullying, bonding with school and teachers (Pabian & Vandebosch, 2015). The study reported that bullying perpetration (both traditional and cyber) showed strong temporal stability with being bonded to school and teachers. Also, low levels of teacher bonding at Time 1 predicted subsequent cyberbullying at Time 2, and cyberbullying at Time 1 led to later poor teacher bonding at Time 2 (Pabian & Vandebosch, 2015). At the same time, expected longitudinal correlations between school ties and (cyber)bullying were not supported (Pabian & Vandebosch, 2015).

Influential Articles

Table 9: Top 10 Influential Articles (Citations)

Rank	Title	Authors	Type	Journal	Citations	Pub. Year
1	" Cyberbullying: its nature and impact in secondary school pupils."	" Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N."	Empirical	" *Journal of Child Psychology and Psychiatry*"	1543	2008

6	5	4	3	2
“ Cyberbullying: An Exploratory Analysis of Factors Related to Offending and Victimization.”	“ Electronic Bullying Among Middle School Students.”	“ Cyberbullying: Another main type of bullying?”	“ Bullying, Cyberbullying, and Suicide.”	“ Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth.”
“ Hinduja, S., & Patchin, J. W.”	“ Kowalski, R. M., & Limber, S. P.”	“ SLONJE, R., & SMITH, P. K.”	“ Hinduja, S., & Patchin, J. W.”	“ Kowalski, R. M., Giumetti, G. W., Schroeder, A. N., & Lattanner, M. R.”
Empirical	Empirical	Empirical	Empirical	Review
“ Deviant Behavior”	*“ Journal of Adolescent Health”*	*“ Scandinavian Journal of Psychology”*	*“ Archives of Suicide Research”*	*“ Psychological Bulletin”*
675	696	810	862	1172
2008	2007	2008	2010	2014

7	“ Psychological, Physical, and Academic Correlates of Cyberbullying and Traditional Bullying.”	“ Kowalski, R. M., & Limber, S. P.”	Empirical	“ *Journal of Adolescent Health*”	555	2013
8	“ Psychosocial Risk Factors Associated With Cyberbullying Among Adolescents.”	Klomek, A., Ikonen, M., Lindroos, J., Luntamo, T., Koskelainen, M., Ristkari, T., &	Empirical	“ *Archives of General Psychiatry*”	411	2010
9	“ The nature of cyberbullying, and strategies for prevention.”	“ Slonje, R., Smith, P. K., & Frisén, A.”	Review	“ *Computers in Human Behavior*”	378	2013
10	“ Cyberbullying and Self-Esteem*.”	“ Patchin, J. W., & Hinduja, S.”	Empirical	“ *Journal of School Health*”	309	2010

Source: Web of Science Data

Table 9 contains the ten highly cited articles based on their citations from the WoS database. The article titled “*Cyberbullying: its nature and impact in secondary school pupils*” by Smith et al. (2008) tops the list. This article offered one of the most acceptable definitions of cyberbullying. It is defined as “an aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and overtime against a victim who cannot easily defend him or herself” (Smith et al.,

2008, p. 376). Another influential research article is "*Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth*" by Kowalski et al. (2014), with thousand hundred and seventy-two (1172) citations in the Web of Science repository. The authors suggested that the 'general aggression model' offers a theoretical framework for cyberbullying studies. They reported that 'normative aggression' and 'moral disengagement beliefs' strongly correlated with cyberbullying perpetration. The third most influential article is "*Bullying, cyberbullying, and suicide*" by Hinduja and Patchin (2010). The article explored suicidal tendencies in perpetrators and victims of cyberbullying. The article is one of the pioneering articles exploring cyberbullying-induced suicidal tendencies in cyberbullies. It also suggested a stronger relationship between victimisation and suicidal tendencies (Guo, 2016).

Table 10: Top 11 most influential articles (Co-cited)

Rank	Title	Authors	Type	Journal	Co-Citations	Pub. Year
1	" Cyberbullying: its nature and impact in secondary school pupils."	" Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N."	Empirical	" *Journal of Child Psychology and Psychiatry*,"	143	2008
2	" Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth."	" Kowalski, R. M., Giumetti, G. W., Schroeder, A. N., & Lattanner, M. R."	Review	" *Psychological Bulletin*"	131	2014

7	6	5	4	3
“ Online aggressor/targets, aggressors, and targets: a comparison of associated youth characteristics.”	“ Bullying, Cyberbullying, and Suicide.”	“ Electronic Bullying Among Middle School Students.”	“ Cyberbullying: Another main type of bullying?”	“ Following you home from school: A critical review and synthesis of research on cyberbullying victimization.”
“ Ybarra, M. L., & Mitchell, K. J.”	“ Hinduja, S., & Patchin, J. W.”	“ Kowalski, R. M., & Limber, S. P.”	“ SLONJE, R., & SMITH, P. K.”	“ Tokunaga, R. S.”
Empirical	Empirical	Empirical	Empirical	Review
“ Journal of Child Psychology and Psychiatry”	*“ Archives of Suicide Research”*	*“ Journal of Adolescent Health”*	*“ Scandinavian Journal of Psychology”*	*“ Computers in Human Behavior”*
59	59	68	69	109
2004	2010	2007	2008	2010

8	Cyberbullying: An Exploratory Analysis of Factors Related to Offending and Victimization.	“ Hinduja, S., & Patchin, J. W.”	Empirical	“ *Deviant Behavior*”	56	2008
9	“ Psychological, Physical, and Academic Correlates of Cyberbullying and Traditional Bullying.”	“ Kowalski, R. M., & Limber, S. P.”	Empirical	“ *Journal of Adolescent Health*”	56	2013
10	“ Psychosocial Risk Factors Associated With Cyberbullying Among Adolescents.”	“ Sourander, A., Brunstein Klomek, A., Ikonen, M., Lindroos, J., Luntamo, T., Koskelainen, M., Ristkari, T., & Helenius, H.”	Empirical	“ *Archives of General Psychiatry*”	49	2010

Source: Web of Science Data

Table 10 reports the results of the document co-citation analysis and the top ten most co-cited research articles. Smith et al.’s (2008) “*Cyberbullying: its nature and impact in secondary school pupils*”) tops the list. The article titled “*Bullying in the digital age: a critical review and meta-analysis of cyberbullying research among youth*” by Kowalski et al. (2014) is the second most co-cited article. Tokunaga’s (2010) “*Following you home from school: A critical review and synthesis of research on cyberbullying victimization*” is the third most co-cited article. The article empirically synthesised the findings on cyberbullying victimisations. It provided the convergent and divergent areas and other characteristics of the literature review. Most of the articles presented in the DCA explore the fields relating to cyberbullying and traditional bullying, school students, technology usage, and technology interaction. Moreover, table 6 suggests the domination of the *Journal of Child Psychology and Psychiatry* and the *Journal of Adolescent Health* because these journals account for 40% (2 each) of the top 10 most co-cited articles.

Keyword co-occurrence analysis

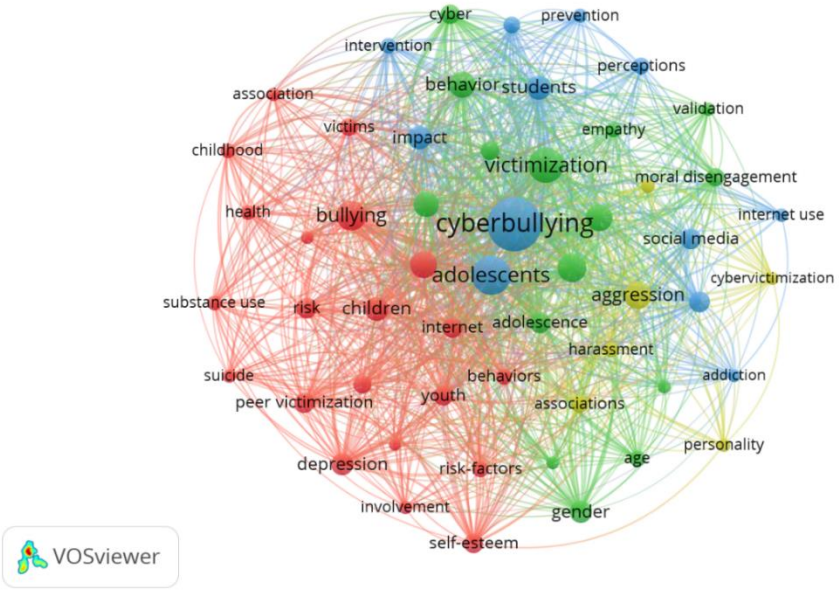

Figure 11: Keyword Network Analysis

Source: WOS Database and VOSviewer

Figure 11 presents the keyword co-occurrence network analysis. It suggests the following four clusters.

a) Cyberbullying, perpetration, and psychometric properties analysis (red colour): The red cluster was led by bullying and presented its association with other keywords like “association,” “psychometric properties,” “internet,” “behaviors,” “involvement,” and “perpetration.” This cluster presents studies that have explored cyberbullying, victim behaviour, or studies that have either developed or validated a particular scale. For instance, a study conducted by Buelga et al. (2020) aimed at exploring the psychometric properties of the “Adolescent Cyber-Aggressor Scale (CYB-AGS)” in Spain. The eighteen-item scale assesses direct and indirect cyberbullying (Buelga et al., 2020). Their study comprised two subsamples that analysed the scale's psychometric properties on sample 1 and confirmed the factor structure using the second sample (Buelga et al., 2020). Also, their study confirmed the reliability and validity of the scale in the Spanish context (Buelga et al., 2020). Another study assessed the interconnectedness between cyberbullying perpetration, social connectedness, belongingness, and problematic media usage (Kircaburun et al., 2018a). The authors suggest that though cyberbullying perpetration directly connects with problematic media usage and belongingness, it indirectly connects with social connectedness (Kircaburun et al., 2018b). Lastly, Barlett et al. (2016) developed a bi-dimensional nine-item scale to measure cyberbullying attitudes. The scale’s psychometric properties were analysed based on three studies. Study 1

extracted the factor structure using exploratory factor analysis. The second study validated the extracted factor structure using confirmatory factor analysis. Finally, the third study replicated the results of study 2 and compared the scale to other scales. Overall, the two factors extracted were General Cyberbullying Characteristics (GCC) and Harmful Cyberbullying Attitudes (HCA) (Barlett et al., 2016).

b) Cyberbullying, addiction, and interventions (blue colour): The blue cluster was led by cyberbullying and presents its association with "adolescents," "intervention," "addiction," "prevention," "internet use," and "social media." This cluster contains documents discussing interventions for and impacts of cyberbullying. Also, this cluster consists of studies that have linked various addictions to cyberbullying perpetration. For instance, Myers and Cowie (2019) suggest that facilitating emotional rehabilitation, promoting socio-motional learning, and creating awareness of the negative consequences of cyberbullying at primary and secondary schooling levels can help reduce cyberbullying perpetration in school students. Also, the authors suggest creating a legal awareness of the laws and repercussions of cyberbullying perpetration among students (Myers & Cowie, 2019) to develop them into digital citizens. Similarly, Schoeps et al. (2018) suggest developing emotional skills in adolescents to improve their quality of social relationships and use it as an intervention against cyberbullying attitudes. Another widely discussed topic in the cluster is addiction. Studies like Méndez et al.s' (2020) have focused on the mala-fied use of mobile phones and its association with cyberbullying perpetration. The authors suggest that problematic mobile phone use is significantly associated with cyberbullying perpetration in school students. On the same grounds, Van Duin et al. (2021) report a stronger association between social media addiction and cyberbullying. The authors further highlight cyberbullying as a significant predictor of social media addiction.

c) Predictors, gender, and mediation studies on cyberbullying (green colour): The green-coloured cluster was led by victimisation and presented an association of victimisation with "predictors," "mediation," "gender," "age," "empathy," and "socioeconomic." A study conducted by Kircaburun et al. (2018b) aimed at analysing the relationship between depression, problematic social media use (PSMU), and cyberbullying perpetration (CBP). The study suggests depression to be a direct predictor of PSMU and an indirect predictor of CBP. However, the authors suggest depression presents weak links with CBP (Kircaburun et al., 2018b). Another study examined the mediation effect of cyber victimisation and moral disengagement on the nexus of cyberbullying and submissive behaviour (Eraslan-Çapan & Bakioğlu, 2020). The findings of the structural equation modelling revealed that cyber victimisation and moral disengagements mediated the relationship between cyberbullying and submissive behaviour. The application of bootstrapping also confirmed that submissive behaviour indirectly affected cyberbullying through the mediators (Eraslan-Çapan & Bakioğlu, 2020). Lastly, this cluster presents studies on gender, a very debated and researched topic in cyberbullying. For instance, Musharraf et al.'s' (2019) study suggests that females report a high level of cyber-

victimization and males report higher levels of cyberbullying perpetration. In contrast, Xue et al. (2022) report insignificant differences based on gender in the relationship between low self-esteem and cyberbullying perpetrations.

d) Cyberbullying, personality, and violence (yellow colour): The yellow cluster was led by aggression and presented its association with "violence," "personality," "harassment," and "associations." This cluster represents various studies focusing on personality, aggression, harassment, and violence aspects of cyberbullying. For instance, Kowalski and Limber (2013) examined the relationship between cyberbullying and traditional bullying experiences among children and adolescents. The authors also explored the associations between psychological health, physical health, academic performance, cyberbullying, and traditional bullying (Kowalski & Limber, 2013). Their study divided the participants into four categories. These categories were "cyber-victim, cyberbully cyber bully/victim," and non (Kowalski & Limber, 2013, p. S13). The results reported high negative psychological and physical health scores and academic performance among the children and adolescents who were categorised as both bullies and victims (Kowalski & Limber, 2013). Their result indicated that high levels of violence (both as perpetrators and victims) significantly negatively affect health and academic performance. In another study, Kircaburun et al. (2018a) explored the association between dark tetrad traits and antisocial online behaviours. The authors also explored the mediation effect of cyberbullying and cyber-stalking on the proposed relationship. The results indicated a full mediation effect of cyberbullying and cyberstalking on the nexus between Machiavellianism and problematic social media usage (PSMU) (Kircaburun et al., 2018a). Secondly, the relationship between narcissism and PSMU was mediated by cyberstalking in women (Kircaburun et al., 2018a). Lastly, cyber-trolling was related to psychopathy and sadism, whereas no associations were established between cyber-trolling and Machiavellianism (Kircaburun et al., 2018a). Furthermore, Malik and Pichler (2022) have explored the relationship between perceived organisational politics and workplace cyberbullying. The results of their study suggested that perceived organisational politics lead to the development of anger and fear, which increases the inclination toward cyberbullying perpetration in the Pakistani workforce (Malik & Pichler, 2022). The results further suggest that victims of physical bullying develop favourable attitudes toward cyberbullying perpetration, meaning victims prefer indulging in cyberbullying perpetration (Malik & Pichler, 2022).

Current and future trends in cyberbullying perpetration studies

Figure 12 presents the keyword overlay analysis to depict current and future trends in cyberbullying perpetration studies. These trends are based on the keywords used in the past five years. Keywords overlay in Co-occurrence analysis in VosViewer was used to analyse the recently utilised keywords. Of 1151 keywords, 141 met the threshold criteria. These are divided into four groups based on their orders of recency. The most recently used keywords are marked in yellow, followed by parrot green, greenish-blue, and purple, respectively.

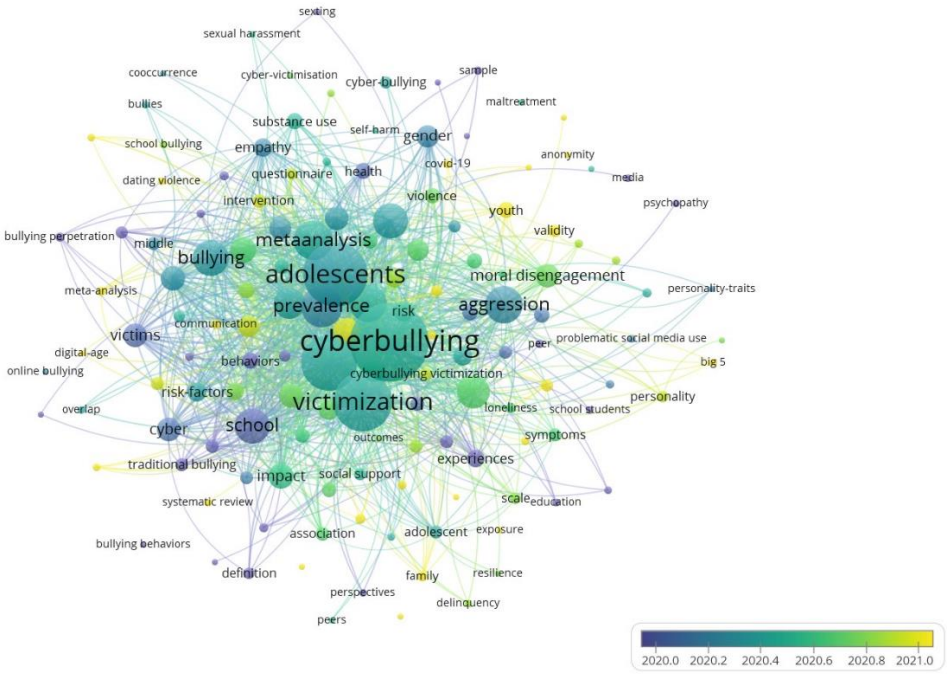

Figure 12: Current and Future Trends in Cyberbullying Perpetration

Source: WOS Database and VOSviewer

Following are the suggested clusters.

a) Most recent topics (yellow cluster): This cluster consists of keywords like "Chinese adolescents," "depressive symptoms," "dating violence," and "mental health." This cluster consists of the topics in cyberbullying perpetration that have recently gained the world's attention and will follow into the near future. A few of the most recent studies have focused on Chinese adolescents. For instance, a study aimed to analyse the reasons behind growing depressive symptoms in Chinese adolescents (Zhang et al., 2022). Though its results determined aggression and parental psychological control as a few reasons behind the growth in depression symptoms, it presented insignificant results with cyberbullying perpetration. Another study from China explored the relationship between strain and cyberbullying perpetration. The results reported that the victims of bullying became cyberbullies when the strength of strain was high (Li & Peng, 2022). Also, they suggested practising self-control to decrease the rate of indulging in cyberbullying as a strain reliever (Li & Hu, 2019). The other most recently researched topic is depressive symptoms. Studies like the one conducted by Lucas-Molina et al. (2021) suggest depressive symptoms as the outcome of cyberbullying perpetration in Spanish school students. The authors further suggest that the occurrence of depressive symptoms can be cushioned with the help of student connectedness. Another most recently studied topic is dating violence. Couturiaux et al. (2021) suggest that children with higher cyberbullying attitudes had higher odds of indulging in dating violence than those with lower to no cyberbullying attitudes. Another emerging topic is mental health.

One such study was conducted by Schodt et al. (2021). The study explored the interaction effect of 'depression, anxiety and substance use', social media usage, and gender-predicted cyberbullying behaviour in adults (Morese et al., 2022). In study 1, for male participants, depression and anxiety are significantly associated with cyberbullying perpetration (Schodt et al., 2021). In contrast, cyberbullying had an insignificant correlation with depression and anxiety in women, regardless of their social media consumption (Schodt et al., 2021). Their second study highlighted the importance of mental health as a predictor for cyberbullying behaviour.

b) Previously researched topics (parrot green cluster): This cluster contains keywords like "cyberbullying perpetration," "social media," "dark triad," and "personality." This cluster presents studies on cyberbullying perpetration focused on cyberbullying perpetration, social media, and personality. The study by Cebollero-Salinas et al. (2022) explored the influence of cyber gossip and awkward internet use on cyberbullying and cyber-victimization. The authors used control variables like 'age, gender, and age of the respondent when he/she first owned a smartphone.' The study suggested that cyber gossip significantly influenced the cyberbullying behaviour in girls between the age of 12-14 years, whereas it was reported that cyber gossip influenced the victims of age between 15-18 years. The study further suggests that the awkward use of the internet significantly influenced the cyber-victimization of the respondents aged between 12-14 years. Lastly, the authors also suggested that having a "smartphone before the age of 11 leads to a higher level of cyberbullying, explained by cybergossip and problematic Internet use" (Cebollero-Salinas et al., 2022, p. 1). Further, Calvete et al.'s' (2021) study explored the interventions that can be used to prevent cyberbullying perpetration and online grooming in adolescents. They suggest self-affirmation and the incremental theory of personality can be used to reduce sexual solicitation and online sexual interaction. The authors also suggest that these two interventions can reduce the occurrences and indulgence in cyberbullying perpetration. Lastly, the study by H. Zhang et al. (2020) aimed to determine the mediating role of moral personality on childhood psychological abuse and cyberbullying attitudes. Their study indicated that children who were psychologically abused in their childhood have positive affirmations to indulge in cyberbullying perpetration. Also, they suggest that moral personality traits such as faith and integrity mediate the proposed relationship.

c) Internet addiction, peers, and beliefs (greenish blue cluster): The third cluster in greenish blue presents keywords like "internet addiction," "bullies," "behavior," "peers," and "beliefs." This cluster presents the second earliest topics studied in cyberbullying perpetration. Researchers like Leung et al. (2018), Chen et al. (2016) and Chang et al. (2015) assessed the associations between social media, internet addiction, cyberbullying, and cyber bystanders. Results indicated that cyberbullies significantly believed that victims show assisting behaviour to cyberbullies, meaning victims help cyberbullies to bully them. Further, Lee et al. (2021) highlight that cyberbullying perpetration was significantly associated with cyberbullying victimisation and peer cyberbullying. Their study also indicated that protective

factors like morality and self-control partially reduced the effects of cyberbullying perpetration. Finally, Yudes et al. (2020) examined the predictive value of resources like gratitude and emotional intelligence and risk factors like problematic internet use (PIU) regarding cyberbullying perpetration. Their study suggested that "age, cyber victimization, problematic Internet use, and deficits in the use and regulation of emotions" best predicted cyberbullying perpetration (Yudes et al., 2020, p. 1).

d) Early researched topics (purple cluster): The last cluster in purple consists of earlier studied topics. It is comprised of keywords like "traditional bullying," "schools," "experiences," and "gender differences." The studies in this cluster have focused on analysing traditional bullying's associations with cyberbullying, cyberbullying in schools, and gender differences in cyberbullying, to discuss a few. Tosuntaş et al. (2018) replicate the results of a study conducted on university and school students. The researchers suggest that there were significant gender differences in their model. The results reported male students being more indulged in cyberbullying than females. Further, a study on Taiwanese adolescents suggested that internet addiction, abuse, and substance abuse positively correlated with being cyberbully and being a traditional bully (Wang et al., 2019). The study also indicated that, at times, cyberbullying and traditional bullying have overlapped each other (Wang et al., 2019). Moreover, the study by Govender and Young (2018) analysed the impact of socio-demographic traits on cyberbullying perpetration in South African school students. The results indicated a significant difference in cyberbullying perpetration between sixth and seventh-grade students. The sixth graders were more indulged in traditional bullying, whereas the seventh graders were more indulged in cyberbullying. Their study also revealed that parenting style was a significant predictor for both types of bullying (Govender & Young, 2018).

4.2.2 Objective 2

Publication and citation trends

For purposes of this study, 406 articles and 62 reviewed articles were studied. Annual publications on the impact of cyberbullying on people's mental health remained under 10 until 2013, reaching 30 by 2017. In 2018, the annual publications surpassed 50, and in 2022, they exceeded 100. In the last five years (2018 – 2022), there were 370 publications on this topic, accounting for 79.05% of total publications during the thirteen-year period. Over a period of time, the number of articles and review articles increased from 113 to 324 and from 23 to 46, respectively. Furthermore, there were 12322 citations from 2010 to 2022, with an average of 26.33 citations per publication. Citations from the last five years constituted 37.62% of the total citations. Figure 13 illustrates the publication and citation trends in the field of cyberbullying and mental health research, depicting a steady rise in both publications and citations. The earliest document, Wang *et al.*'s (2010) "Co-occurrence of Victimization from Five Subtypes of Bullying: Physical, Verbal, Social Exclusion, Spreading Rumours, and Cyber," examined the co-occurrence of subtypes of peer

victimisation. It assessed victimisation related to verbal, spreading rumours, social exclusion, and physical and cyberbullying. The study also found that male participants were more likely to become victims of all the subtypes of bullying.

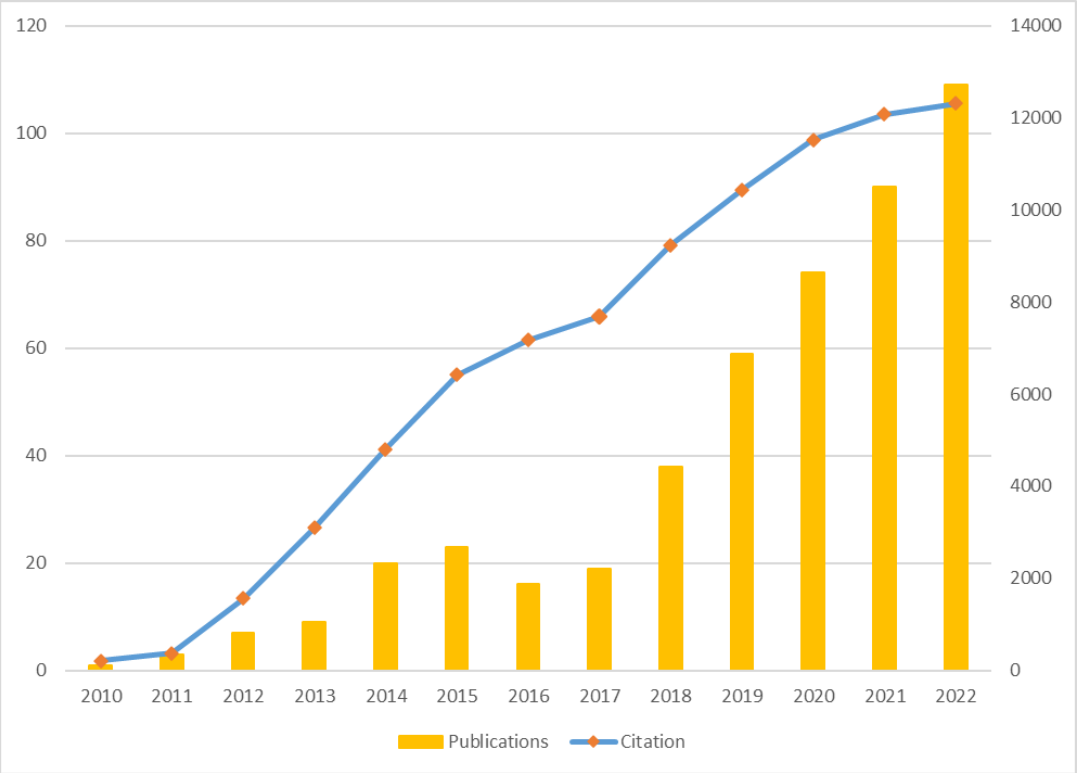

Figure 13: Publication and citation trend

Source: SCOPUS database

Journal analysis

Table 11: Top 10 most active journals

Journal	Documents	Citations	Publisher	SCOPUS cite score
International Journal Of Environmental Research And Public Health	67	703	*MDPI*	4.5
Journal of Adolescent Health	12	2016	*Elsevier*	7.1
Cyberpsychology, Behaviour, And Social Networking	12	203	*Mary Ann Liebert*	6.7
Journal Of Interpersonal Violence	10	154	*Sage*	4.5

Computers In Human Behaviour	9	302	*Elsevier*	1.2
Plos One	8	338	*Public Library of Science*	5.6
Children And Youth Services Review	6	535	*Elsevier*	3.3
International Journal Of Public Health	5	254	*Frontiers Media*	5.3
Journal Of School Health	5	215	*Wiley Blackwell*	3.3
Journal Of Child And Adolescent Trauma	5	141	*Springer Nature*	2.9

Source: SCOPUS, VOSviewer

Table 11 presents the top 10 journals based on the number of documents published. Out of 187 journals that have published at least one article on cyberbullying and mental health, only four journals had ten or more publications on these topics. The *International Journal of Environmental Research and Public Health* had the highest number of publications (67) and citations (703). It is a multidisciplinary journal covering public health, occupational health, and psychology and is published by MDPI. It is followed by the *Journal of Adolescents Health* with 12 publications and 2 016 citations. This journal is published by Elsevier and focuses on domains such as medicine, paediatrics, and public health. The third-ranked journal is the *Children and Youth Services Review*, with 535 citations. It is also published by Elsevier and has a multidisciplinary approach, primarily focusing on sociology, political sciences, and education. The majority of the top ten journals publish multidisciplinary works, with an emphasis on behavioural sciences, social sciences, and adolescents, indicating the significance of cyberbullying and mental health in these fields. The only journal with more than 1000 citations is the *Journal of Adolescents Health* (2 016 citations). It also has the highest citations per document score of 168. The journal with the second-highest citations per document score is the *Children and Youth Services Review* (89.17 citations per document). Lastly, it is worth noting that only a few studies on cyberbullying and mental health have been published in journals by renowned publishers such as the American Psychological Association (2 publications), Taylor and Francis Ltd. (2 publications), and Oxford University Press (1 publication).

A journal overlay visualisation (Figure 14) was conducted to explore the emerging journals and the earliest journals published in the field. Another aim of journal overlay analysis was to determine the shift in research areas that journals publish on. The journals marked in yellow colour are emerging journals in this field, whereas those marked in bluish-purple are the earliest journals published in the field. Journals such as the *American Journal of Health Promotion*, *Australian Psychiatry*,

BMC Psychology, and *Frontiers in Digital Health* are emerging journals in the field, to name a few.

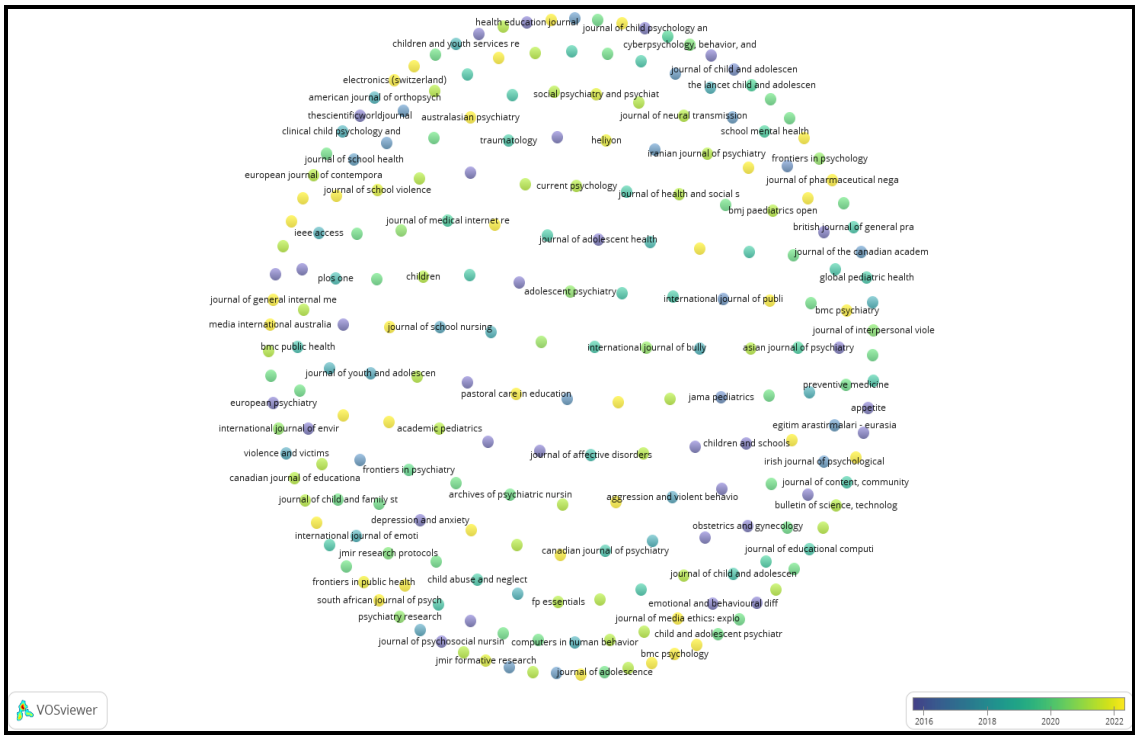

Figure 14: Journal overlay map

Source: SCOPUS, VOSviewer

Top cited publications

Table 12: Top 10 most influential publications

Title	Author(s)	Journal	Citations
Psychological, Physical, and Academic Correlates of Cyberbullying and Traditional Bullying	Kowalski & Limber (2013)	*Journal of Adolescent Health*	682
Cyberbullying, School Bullying, and Psychological Distress: A Regional Census of High School Students	Schneider, O'Donnell, Stueve & Coulter (2012)	*American Journal of Public Health*	557
Online communication, social media and adolescent wellbeing: A systematic narrative review	Best, Manktelow & Taylor (2014)	*Children and Youth Services Review*	492

Longitudinal and Reciprocal Relations of Cyberbullying With Depression, Substance Use, and Problematic Internet Use Among Adolescents	Gámez-Guadix, Orue, Smith & Calvete (2013)	*Journal of Adolescent Health*	337
Victims' perceptions of traditional and cyberbullying, and the psychosocial correlates of their victimisation	Campbell, Spears, Slee, Butler & Kift (2012)	*Emotional and Behavioural Difficulties*	246
Cyberbullying: Review of an Old Problem Gone Viral	Aboujaoude, Savage, Starcevic & Salame (2015)	*Journal of Adolescent Health*	245
Annual Research Review: Harms experienced by child users of online and mobile technologies: the nature, prevalence and management of sexual and aggressive risks in the digital age	Livingstone & Smith (2014)	*Journal of Child Psychology and Psychiatry*	234
Prevalence and Effect of Cyberbullying on Children and Young People	Hamm, NewtonChisholm, Shulhan, Milne, Sundar, Ennis, Scott & Hartling (2015)	*JAMA Pediatrics*	216
Co-occurrence of Victimization from Five Subtypes of Bullying: Physical, Verbal, Social Exclusion, Spreading Rumors, and Cyber.	Wang, Iannotti, Luk & Nansel (2010)	*Journal of Pediatric Psychology*	211
Cyber Bullying and Physical Bullying in Adolescent Suicide: The Role of Violent Behaviour and Substance Use	Litwiller &Brausch (2013)	*Journal of Youth and Adolescence*	195

Source: SCOPUS, VOSviewer

The top ten highly cited research articles in the SCOPUS database are presented in Table 12. One of these articles, "Psychological, physical, and academic correlates of cyberbullying and traditional bullying," authored by Kowalski and Limber (2013), aimed to analyse the relationship between experiences of cyberbullying and traditional bullying in children and adolescents, and their psychological and physical health as well as academic performance. They conducted a survey comprising variables such as experiences with traditional bullying and cyberbullying, depression, anxiety, physical well-being, and academic performance (Kowalski & Limber, 2013). Participants were divided into four cohorts: cyber victims, bullies, victims/bullies, and those not involved in cyberbullying. A similar division was also made for traditional bullying. It was found that students in the

victims/bullies' group had the worst scores for their psychological and physical health and academic performance, especially among male participants. In comparison, female participants were more likely to develop both traditional and cyberbullying-related anxiety. The results further highlighted that although cyber victimisation and perpetration and traditional bullying victimisation and perpetration positively correlated with anxiety, depression, lower self-esteem, suicidal ideation, absenteeism and leaving school early, victimisation in both types of bullying was more significantly associated with these outcomes than perpetration. In other words, the study emphasised that victims of traditional and cyberbullying are more likely to develop anxiety, depression, and suicidal ideation than perpetrators, especially in school learners.

The second most influential study is "Cyberbullying, School Bullying, and Psychological Distress: A Regional Census of High School Students," authored by Schneider *et al*. (2012). The authors aimed to analyse the relationship between cyberbullying and school bullying victimisation and psychological distress (Schneider *et al*., 2012). Results revealed that 59.7% of students who experienced cyberbullying were also the prey of school bullying, while 36.3% of students who experienced more school bullying were also victims of cyberbullying. Furthermore, results indicated that victims of both school and cyberbullying had significant associations with psychological distress. The tenth most influential publication, titled "Cyber bullying and physical bullying in adolescent suicide: the role of violent behaviour and substance use" is authored by Litwiller and Brausch (2013). The authors analysed the relationship between physical and cyberbullying victimisation and suicidal tendencies in adolescents, considering mediating variables such as violent and sexual behaviour. The study's findings suggested that both types of bullying are highly associated with suicidal tendencies and unsafe sexual and violent behaviours. Additionally, the study highlighted an association between both types of bullying and substance abuse. Substance abuse and violent behaviour acted as partial mediating variables. They explained "how risk behaviours can increase an adolescent's likelihood of suicidal behaviour through habituation to physical pain and psychological anxiety" (Litwiller & Brausch, 2013, p. 675).

Table 13: Top five publications in the last five years

Title	Authors	Journal	Citations
Annual Research Review: The persistent and pervasive impact of being bullied in childhood and adolescence: implications for policy and practice	Arseneault (2018)	*Journal of Child Psychology and Psychiatry*	192
Self-Harm, Suicidal Behaviours, and Cyberbullying in Children and Young People: Systematic Review	John, Glendenning, Marchant, Montgomery,	*Journal of Medical Internet Research*	185

	Stewart, Wood, Lloyd & Hawton (2018)		
COVID-19 Racism and Mental Health in Chinese American Families	Cheah, Wang, Ren, Zong, Cho & Xue (2020)	*Pediatrics*	172
Mobile Phone Use and Mental Health. A Review of the Research That Takes a Psychological Perspective on Exposure	Thomée (2018)	*International Journal of Environmental Research and Public Health*	129
Roles of cyberbullying, sleep, and physical activity in mediating the effects of social media use on mental health and wellbeing among young people in England: a secondary analysis of longitudinal data	Viner, Gireesh, Stiglic, Hudson, Goddings, Ward & Nicholls (2019)	*The Lancet Child & Adolescent Health*	116

Source: SCOPUS, VOSviewer

Table 14 illustrates the top five publications in the last five years, i.e. 2018 to 2022. At the top of the list is Arseneault's (2018) article titled "Annual Research Review: The persistent and pervasive impact of being bullied in childhood and adolescence: implications for policy and practice". The article was published in the Journal of Child Psychology and Psychiatry and was cited 192 times. The study highlighted the impact of childhood bullying on mental and physical health as well as socio-economic outcomes. It demonstrated that childhood bullying, including traditional and cyberbullying, contributes to childhood and adolescent adjustment problems and may lead to poor mental and physical health, and the development of socio-economic difficulties. The study emphasised the importance of interventions against childhood bullying that focus on reducing symptoms-based problems in young victims. Furthermore, the study highlighted a need for developing individual level-based interventions to promote resilience against bullying behaviour and reduce the risk of being vulnerable to bullying.

Country/region analysis

Table 14: Top 20 countries publishing on cyberbullying and mental health

Country	Documents	Citations	Economy
United States	162	5259	Developed
United Kingdom	55	2405	Developed
Spain	54	1111	Developed
Canada	49	1340	Developed
Australia	41	1342	Developed

China	25	380	Developing
Italy	22	244	Developed
Taiwan	21	333	Developed
Sweden	11	496	Developed
Finland	10	143	Developed
Germany	10	120	Developed
Indonesia	8	60	Developing
Ireland	8	127	Developing
South Korea	8	139	Developed
Vietnam	8	91	Developing
Hong Kong	7	120	Developed
India	7	22	Developing
Malaysia	7	12	Developing
Singapore	7	85	Developed
South Africa	7	31	Developing

Source: SCOPUS, VOSviewer

Table 14, figures 15 and 16 report the top 20 countries/regions actively publishing in the cyberbullying and mental health domain. The SCOPUS database revealed that 75 countries have published 468 documents on this topic. The large number of countries involved suggests that cyberbullying and mental health have received global coverage and attention. It is interesting to note that 13 out of the top 20 countries are developed nations (Figure 4). The United States of America (USA) tops the list with 162 publications and 5,259 citations. It is followed by the United Kingdom (UK) with 55 publications and 2 045 citations. These two countries are developed economies that have been utilising advanced technologies, especially ICT. Moreover, cyberbullying was recognised and addressed in developed countries earlier than in any other country (Bansal *et al*., 2023a). Also, the most influential authors on cyberbullying are from developed nations. P. K. Smith tops the list of most influential authors with 454 citations, followed by S. Hinduja (346) and J. W. Patchin (320). China leads the list of most active developing nations with 25 publications and 380 citations. Indonesia follows China with eight publications and 60 citations, followed by Ireland (8 publications and 127 citations), Vietnam (8 publications and 91 citations), India (7 publications and 22 citations) and South Africa (7 publications and 31 citations). While the difference in the number of publications and citations between developing and developed economies is justified by the level of ICT technology used, it does not present a clear picture of the situation. Moreover, it is not justified to conclude that developing countries like India and China are laggers in research on the topic. Therefore, VOSviewer was used for the purposes of this research to conduct a country overlay mapping to explore which emerging countries are based on their paper publication year.

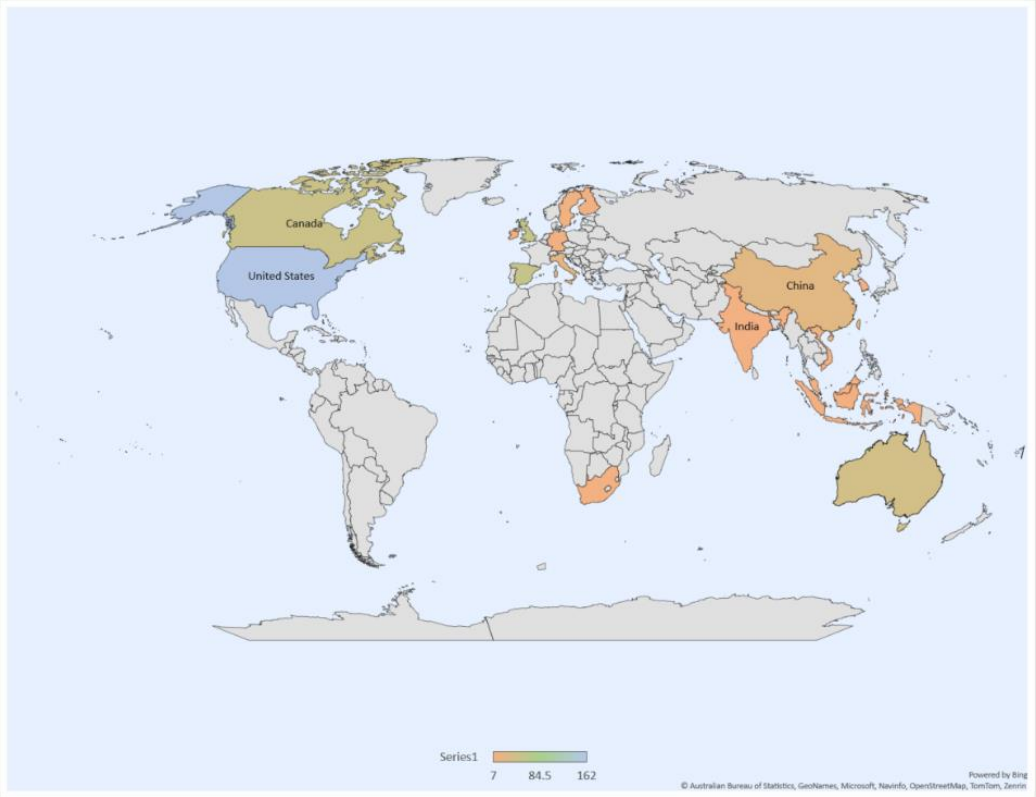

Figure 15: Country map

Source: SCOPUS, VOSviewer

The results of the country overlay mapping process categorise countries in five different colours. Dark bluish-purple presents the countries that have been active in this field for a very long time, whereas countries in yellow are the emerging countries. As expected, India and China are marked in yellow, suggesting a rise in research on cyberbullying and mental health in emerging countries. Interestingly, it also provides further insights; for example, countries marked in dark bluish-purple colour are countries with developed economies and with substantial literature based on the subject, as they have been publishing works for several years. On the other hand, countries marked in yellow represent developing economies that are emerging in this field. The ICT advances and the creation of early awareness regarding the impact of cyberbullying on mental health are a few differentiating factors between developing and developed economies. Figure 16 presents a country overlay analysis.

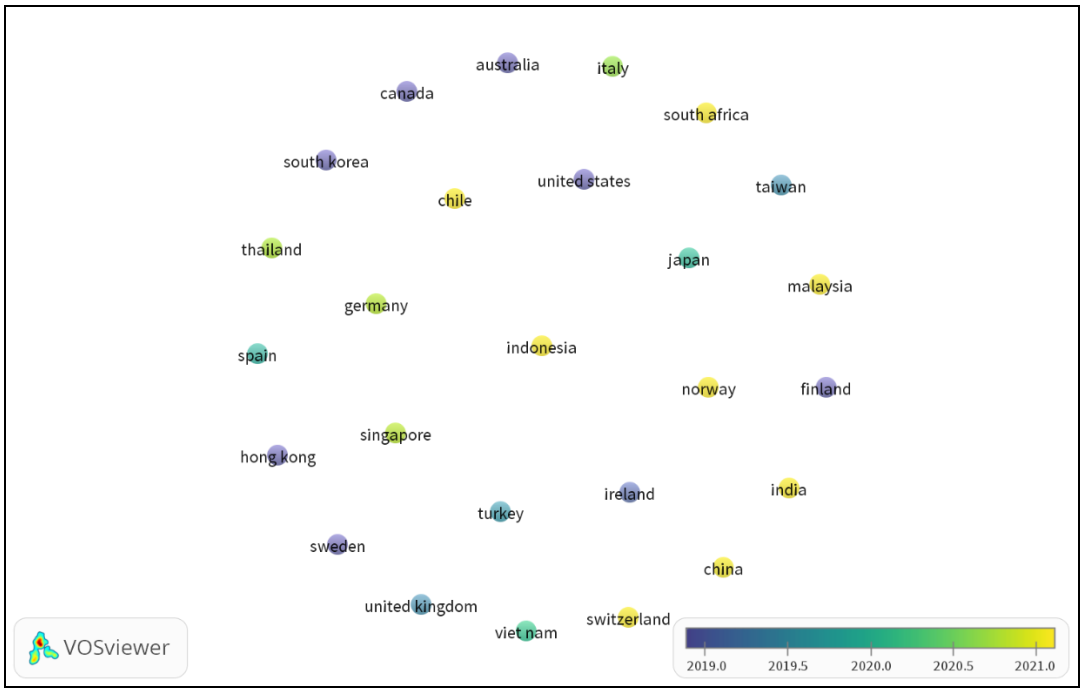

Figure 16: Country overlay map

Source: SCOPUS, VOSviewer

Research area analysis

Table 15: Research areas

Area	Overall	2019-2022	%	2010-2018	%
Medicine	294	205	69.73	89	30.27
Psychology	146	102	69.86	44	30.14
Social Sciences	117	83	70.94	34	29.06
Environmental Science	71	67	94.37	4	5.63
Computer Science	39	30	76.92	9	23.08
Neuroscience	20	17	85.00	3	15.00
Arts and Humanities	25	12	48.00	13	52.00
Nursing	18	11	61.11	7	38.89
Engineering	12	9	75.00	3	25.00
Multidisciplinary	11	8	72.73	3	27.27
Health Professions	7	5	71.43	2	28.57
Biochemistry, Genetics and Molecular Biology	8	4	50.00	4	50.00
Business, Management and Accounting	4	4	100.00	0	0.00
Agricultural and Biological Sciences	6	3	50.00	3	50.00

Energy	3	3	100.00	0	0.00
Pharmacology, Toxicology and Pharmaceutics	2	2	100.00	0	0.00
Veterinary	2	2	100.00	0	0.00
Economics, Econometrics and Finance	2	1	50.00	1	50.00
Materials Science	2	1	50.00	1	50.00
Mathematics	1	1	100.00	0	0.00

Source: SCOPUS database, % Number of papers published during the period *100/Number of papers published during 2010-2022

Table 15 presents the research areas in which studies on cyberbullying and its impact on mental health are being conducted. Medicine has the primary coverage with 36.9% of studies, followed by psychology at 19.1% and social sciences (14.9%). Other major research areas include environmental science (9.0%), computer science (4.9%), arts and humanities (3.2%) and neuroscience (2.5%), to name a few. The results suggest that although most of the studies were conducted in the medical domain, there are cyberbullying and mental health researchers in other areas, such as psychology, social sciences, environmental science, and computer science. Table 5 also reports a comparison between documents published in different research fields in two time frames, i.e. 2010 – 2018 and 2019 – 2022. It reports a percentage increase in publications from 2010-2018 to 2019-2022 in research areas such as medicine, psychology, social sciences, environmental science, computer science, neuroscience, nursing, and engineering. It also reports a percentage decline in arts and humanities research areas during the same period. The table further illustrates the emergence of new research areas, namely business, management and accounting, energy, pharmacology, toxicology and pharmaceutics, and mathematics during 2019-2022. The results suggest that contemporary researchers appear more interested in analysing medicinal and psychological aspects of cyberbullying and mental health, along with developing interests in organisational aspects.

Topical analysis

Figure 17 illustrates the topical analysis based on keywords co-occurrence analysis, which suggests that 98 out of 2 420 keyword topics met the threshold criteria of 15 co-occurrences per keyword. The prominent keywords were cyberbullying (353 occurrences), followed by human (324 occurrences), mental health (228 occurrences), adolescent (268 occurrences), and humans (265 occurrences), male (254 occurrences), and female (254 occurrences).

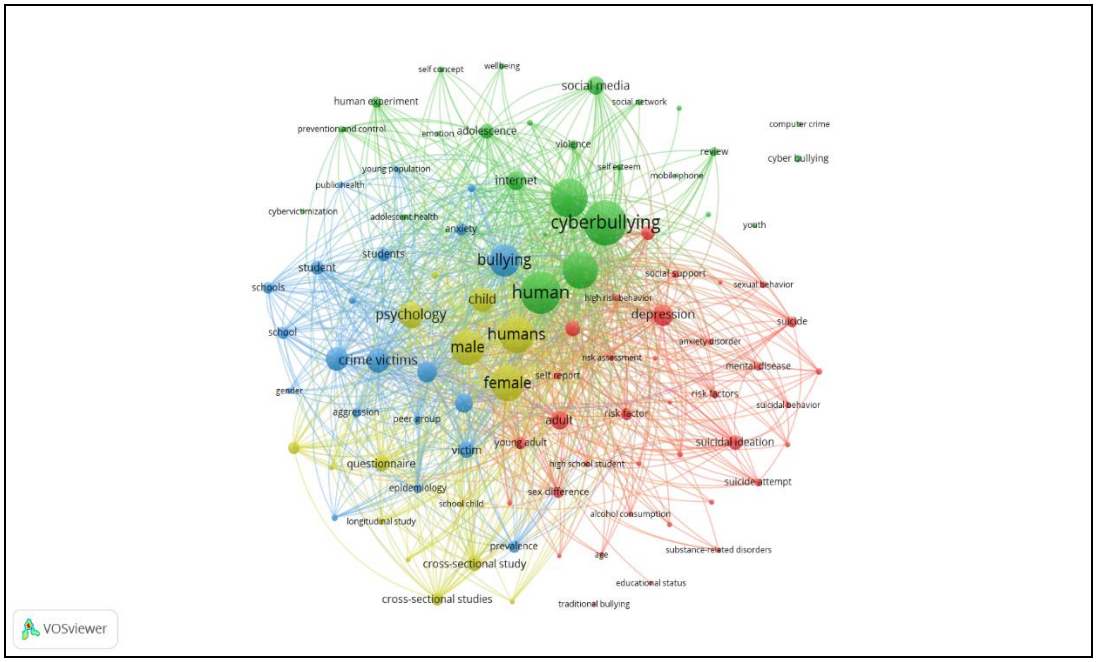

Figure 17: Keyword network visualisation

Source: SCOPUS, VOSviewer

The keyword visualisation map highlighted five major clusters based on their link to strength co-occurrence.

Cluster 1: Early studies on cyberbullying and mental health: This cluster (in green colour) includes keywords such as cyberbullying, human, mental health, adolescent, internet, prevention and control, adolescent health, etcetera. It appears to comprise early studies that theorised cyberbullying and mental health. For example, Wang *et al*. (2010) analysed and recognised cyberbullying as a subtype of bullying. Williams and Godfrey (2011) conceptualised how psychiatric-mental health nurses can recognise cyberbullying. Keung (2011) assessed the relationship between internet addiction and antisocial internet behaviour like cyberbullying in adolescents. Goebert *et al*. (2011) explored the relationship between cyberbullying, substance abuse, and mental health. Additionally, this cluster includes publications studying coping behaviours and the need to develop preventive measures against degraded mental health due to cyberbullying. For instance, school students try to cope with cyberbullying in three ways: reactive, preventive, and no way to prevent cyberbullying (Parris *et al*., 2012). Reactive coping strategies may involve ignoring or deleting bullying messages, while preventing coping strategies may involve seeking help or increasing awareness about their security. The study further highlighted that when these strategies fail, students feel defenceless and that there is no way to reduce cyberbullying. Furthermore, Sampasa-Kanyinga and Hamilton (2015) highlighted the need to develop preventive interventions against cyberbullying. Their study suggested that cyberbullying victimisation mediated the

relationship between the use of social networking sites (SNS), psychological distress and suicidal ideations.

Cluster 2: Gender in cyberbullying and mental health: The yellow-coloured cluster contains keywords such as humans (265 occurrences), female (254 occurrences), male (254 occurrences), psychology (167 occurrences), child (147 occurrences), sex factors (20 occurrences), etcetera. It seems to present studies on gender-based differences in cyberbullying and mental health, often referred to as the gender debate cluster. This cluster contains studies contributing to the ongoing gender-based debate on cyberbullying and mental health. Various researchers have presented differing views on gender-based differences affecting cyberbullying and mental health. For example, Bannink *et al*. (2014) suggested that male participants showed resilience towards cyberbullying victimisation, thereby not developing any mental health problems, whereas it was the opposite in the case of females. Merrill and Hanson (2016) also suggested higher cyberbullying victimisation in female participants than in males and that females sometimes bully other females as a way to release their mental pressure and emotional bursts. On the other hand, Kim *et al*. (2019) suggested a higher direct effect of cyberbullying victimisation on depression in males compared to females. Hood and Duffy (2018) contributed to this debate by revealing that gender differences did not affect the cyberbullying intentions of adolescents. Fletcher *et al*. (2014) also reported no association of gender with cyberbullying in school learners. Additionally, this cluster consists of longitudinal studies that examine the relationship between cyberbullying and mental health over time. For instance, one of these longitudinal studies predicts cyber victimisation in year one, followed by developing anxiety in the following year. Similar results were predicted for cybervictimization in year two and anxiety in the following year. Another longitudinal study found a significant moderating effect of perceived social support on the relationship between homophobic cyberbullying, depression, and anxiety (Wright *et al*., 2022).

Cluster 3: Clinical and criminal studies on cyberbullying and mental health: This cluster in blue colour illustrates studies related to clinical assessments and criminology on cyberbullying and mental health. Some of the keywords are bullying (219 occurrences), crime victims (147 occurrences), major clinical studies (105 occurrences), offender (24 occurrences), etcetera. One of the studies in the field of criminology suggested no significant differences in psychosomatic issues between victims of cyberbullying and traditional bullying (Beckman *et al*., 2012). Paat and Markham's (2021) review study highlighted the modern-day cyber risks teenagers face, particularly focusing on the hidden dangers associated with cyberbullying, SNSs, cyberdating, and sexting, aiming to raise awareness about these crimes. Another clinical study analysed the frequency of cyberbullying as a contributing factor to youth suicide in Canada (Cénat *et al*., 2015). Though cyberbullying was not directly associated with suicide-related deaths, the presence of other mental health issues combined with traditional bullying and cyberbullying contributed to a higher prevalence of identified mental health issues, increasing the risk of suicide attempts

and, in some cases, resulting in death (Cénat *et al*., 2015). Patchin and Hinduja (2017), two prominent authors in the field of cyberbullying, conducted a study to analyse the prevalence of digital self-harm in adolescents. They suggested that males were more likely to engage in digital self-harm activities than females. They also highlighted various factors, including sexual orientation, experience with cyberbullying and depressive symptoms, which significantly correlated with digital self-harm in adolescents.

Cluster 4: Associating cyberbullying with mental health: This cluster in red colour presents studies that have expanded the literature on cyberbullying and mental health. These studies have used more robust statistical methods to study various variables' moderation and mediation effects on the relationship between cyberbullying and mental health. Some of the keywords present in this cluster are depression (127 occurrences), adult (106 occurrences), and social support (33 occurrences). Feinstein *et al*. (2014) suggested that rumination significantly mediated the relationship between cyberbullying victimisation and depressive symptoms in women. Elgar *et al*. (2014) examined the importance of family dinners, specifically family communication and contacts, in mitigating the negative impacts of cyberbullying victimisation on mental health. They suggested that improved family communication helps alleviate mental stress and reduces suicidal tendencies, depression, and anxiety in cyberbullying victims. Sampasa-Kanyinga and Hamilton (2015) highlighted the need to explore the use of social networking sites in light of cyberbullying victimisation to prevent adolescents' mental health issues. They also suggested that cyberbullying victimisation mediates the linkages between social networking site usage and mental health issues such as psychological distress and suicide attempts. Yu and Chao (2016) suggested that internet addiction significantly moderates the relationship between cyberbullying, cyber-pornography, and mental health. They suggested that parents and academics regulate the digital behaviour of adolescents and guide them to use the internet better. Lin *et al*. (2022) indicated that people with higher resilience scores are well protected against depression resulting from cyberbullying victimisation. Hence, studies clearly showed the importance of studying individual-level interventions to protect against cyberbullying and resulting mental issues.

Recent trends

Figure 18 represents the keyword overlay map of emerging topics and evolution/shifts in topics during the last five years, i.e. 2018 - 2022. Again, clusters are formed but based on the time of occurrence of keywords.

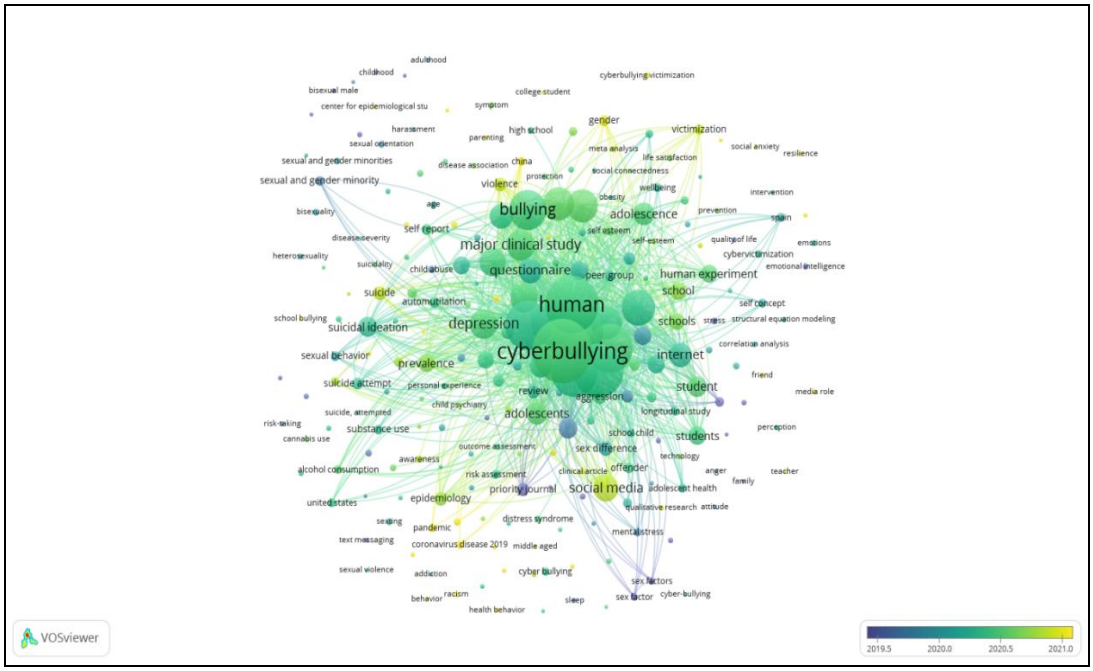

Figure 18: Keyword overlay map

Source: SCOPUS, VOSviewer

Keywords presented in yellow and light-green colours indicate the emerging topics.

Cluster 1: Most emerging cluster: This yellow-coloured cluster presents the most emerging topics on cyberbullying and mental health. This cluster has keywords such as social anxiety, racism, pandemics, physiological distress, COVID-19, college students, workplace, etc. According to Hou et al. (2022), there has been an increase in cyberbullying cases due to increased screen time during the COVID-19 pandemic. Studies on college students suggest that the unguided authority to surf the internet has made the collegiate fall prey to cyberbullies or, in some cases, become one, knowingly or unknowingly (Naik *et al.*, 2021). Bansal *et al*. (2023a) also reported a positive correlation between depressive symptoms and cyberbullying perpetration in college students. Moreover, Baiden *et al*. (2022) and Cheah *et al*. (2020) indicated that racial minorities experience online discrimination, which contributes to increased mental health issues. Cheah *et al*. (2020) further recommended that healthcare professionals pay special attention to victims of online discrimination during COVID-19.

Cluster 2: Second most emerging cluster: This parrot-green coloured cluster includes studies on the second most emerging topics. It contains keywords such as social media, prevalence, violence, epidemiology, suicide, and gender. For example, Tamarit *et al*. (2021) explored the relationship between social network sites' addiction, self-esteem and sexo-erotic risk behaviour like sexting and grooming in

adolescents. Their findings also suggest that online addiction predicts sexo-erotic behaviour, and such behaviour is moderated by self-esteem. Rakic *et al*. (2021) suggest that individual and family factors, including gender and family affluence status, predict cyberbullying exposure in Serbian school students. Marengo *et al*. (2021) examined the occurrences of cyberbullying and problematic social media use in school students. They found that the risk of being cyber-victimized was higher when problematic social media use was present, and the reports of such cases were higher in female students than in males.

Cluster 3: Interventions for cyberbullying and mental health: This cluster in teal colour contains studies on preventing the degradation of mental health due to cyberbullying. This cluster contains words such as life satisfaction, prevention, mental health, cybervictimization, interventions, etcetera. Several studies have discussed interventions aimed at preventing cyberbullying and promoting sound mental health. For instance, Yosep *et al*. (2022) and Berardelli *et al*. (2018) explored and reviewed the literature on interventions that can decrease cyberbullying incidences and mitigate their negative effects on mental health. Yosep *et al*. (2022) suggested that nursing interventions such as prevention activities, peer-group support, and resilience programs can assist in reducing the occurrence of cyberbullying incidences and help improve mental health. Further, Berardelli *et al*. (2018) found that lifestyle behaviour, including cyberbullying, substance abuse, low exercise, and poor diet, can severely affect mental health. They indicated that community-wide programs such as social skills training and psychoeducational family treatments can act as interventions against such behaviours and help elevate mental health. Myers and Cowie (2019) reviewed the fragmented literature on cyberbullying victimisation in educational institutions and suggested some helpful interventions. They emphasised that educational institutions might adopt social and emotional learning programs to enhance emotional intelligence and empathy among students. The authors also highlighted Smith *et al*.'s (2016) restorative methods to create a cooperative and positive environment in schools, fostering positive relationships and bolstering the participation of academics and students in implementing such methods.

Cluster 4: Adolescents and research techniques: This bluish-purple cluster presents studies on adolescent behaviour and data-gathering techniques. Keywords include adolescent behavior, surveys and questionnaires, psychological well-being, priority journal, internet addiction, mental disorders, sexual and gender minority. Various researchers, including Barlett *et al*. (2016), Cavalcanti *et al*. (2019), Bansal *et al*. (2022), Tanrikulu and Erdur-Baker (2021) and Reif *et al*. (2021) have explored the psychometric properties of various scales or inventories measuring cyberbullying in countries like the USA, Brazil, India, Turkey, Spain and Germany, respectively. Studies within this cluster also investigate and suggest the associations between cyber intimate partner victimisation and alcohol use (Trujillo *et al*., 2020) and the relationship between cyberbullying experiences, gender, and depression (Alrajeh *et al*., 2021). Additionally, authors like Reed *et al*. (2019) suggest that cyber sexual

harassment from unknown males is prevalent among teenage girls and negatively affects their mental well-being. Some participants from their study also reported the prevalence of cyber sexual harassment from known males.

4.2.3 Objective 3

Study 1 – Factor Structure Validation

Table 16: Factorial Structure of Indian CBAS

No.	Statements	Loadings	h^2	Eigenvalues
Hostile Cyberbullying Attitudes (HCA)				
1	I feel good about attacking others online when they deserve it.	0.564	0.318	**2.064**
2	Harming others using electronic means is acceptable.	0.643	0.413	
3	Sending malicious electronic messages to others is less harmful than face-to-face communication	0.757	0.573	
4	Attacking others online may be justified.	0.501	0.251	
5	Because I am not face-to-face with the other person when I'm online, I feel I can say what I want, even if it is evil and offensive.	0.713	0.508	
General Cyberbullying Characteristics (GCC)				
1	It's fun to tease or make fun of others with offensive messages online.	0.893	0.797	**1.711**
2	It is okay to send messages to or make offensive online posts about others.	0.956	0.914	
	Number of Items	*7*		
	Eigenvalues	*3.775*		
	Explained Variance	*56.38%*		

Source: Primary Data, *Satisfactory Factor Loadings (i.e., greater than |0.5|.), h^2: Communalities

The sample of 435 was split into two subsamples using IBM's SPSS split sample. Even responses were included in the first subsample (n_1 =218), and odd responses were added in the second subsample (n_2 = 217). EFA was applied to the first subsample, and the second sample was used to check the model fit (using CFA) of the factorial structure derived from EFA. Before EFA, the Kaiser-Meyer-Olkin (KMO) test of sampling adequacy and Bartlett's test of sphericity were conducted to

check the suitability of the first subsample for factor analysis. These tests, along with EFA, were performed using SPSS 21. The KMO test of sampling adequacy value was 0.832, which was greater than the threshold value of 0.70. Also, Bartlett's test of sphericity was significant at a 0.05 significance level. These results indicated the suitability of data for applying EFA. Subsequently, nine statements of CBAS were subjected to EFA using Principal Axis Factoring with Promax (Oblique) Rotation and Kaiser Normalization in IBM SPSS v21. EFA resulted in a two-component solution that explained 56.38% of the total variance. The results also reported that the factor loading of item 4 (I have no reservations about using technology to hurt others when they deserve it) was 0.461, and that of item 6 (school/colleges rules are inefficient for stopping cyberbullying) was 0.456, which were less than the minimum acceptable value of 0.50 (Hair et al., 2003; Chao et al., 2013; Maskey et al., 2018). Thus, items 4 and 6 were discarded. Our beliefs and values are based on the principle of "**सर्वजन हिताय, सर्वजन सुखाय**" (meaning – welfare to all, happiness to all) stops us from being deliberately indulged in criminal activities like cyberbullying. Hence, this may be one of the possibilities behind this result. Since the sample consisted of college students, this result could be due to students' incredulity regarding the effectiveness of rules and regulations laid down by educational institutions in preventing and tackling cyberbullying. Further, cyberbullying is not just restricted to educational institutions; thus, any set of rules drafted by colleges is bound to be ineffective in eliminating cyberbullying among students. It was also observed that one statement (attacking others online may be justified) was part of the GCC factor in the original CBAS; however, this statement moved to the HCA factor in the Indian version of CBAS. It looked justified as the stated statement is more about a hostile attitude, wherein respondents consider attacking others as justified. Therefore, the first factor comprised five statements and was referred to as a 'hostile cyberbullying attitude (HCA).' The second factor consisted of two statements and was labelled as 'general cyberbullying characteristics (GCC).' Table 16 presents factor loadings, commonalities (h^2), and the total variance explained by seven items of the CBAS scale in the Indian context.

This seven-item scale was subjected to CFA to confirm the factorial validity of the revised scale. CFA was applied on the second subsample of 217 students to verify the two-component factor structure enumerated through EFA. According to Şimşek (2007), acceptable values of model fit indices are RMSEA < 0.08, SRMR ≤ 0.05, GFI ≥ 0.95, and CFI ≥ 0.97, and Xia & Yang (2018) and Bentler & Bonett (1980) have further recommended TLI as another model fit indices with an acceptable value of TLI > 0.90. The two-factored CBAS indicated satisfactory values with RMSEA = 0.058, SRMR = 0.0310, GFI = 0.972, CFI = 0.983 and TLI = 0.973. Also, the $\chi^2 = 23.546$, df = 13 and the value of the p of the model are less than 0.05 (p = 0.036). Figure 19 shows the results of the CFA model of CBAS in the Indian context. The results of EFA and CFA recommended adequate factorial validity of two-factored seven-item CBAS among Indian students, which is in accordance with the recommendations of previous studies conducted by Barlett et al. (2016) and Cavalcanti et al. (2019). Subject to further reliability and validity study, this two-factored scale may be referred to as Indian CBAS.

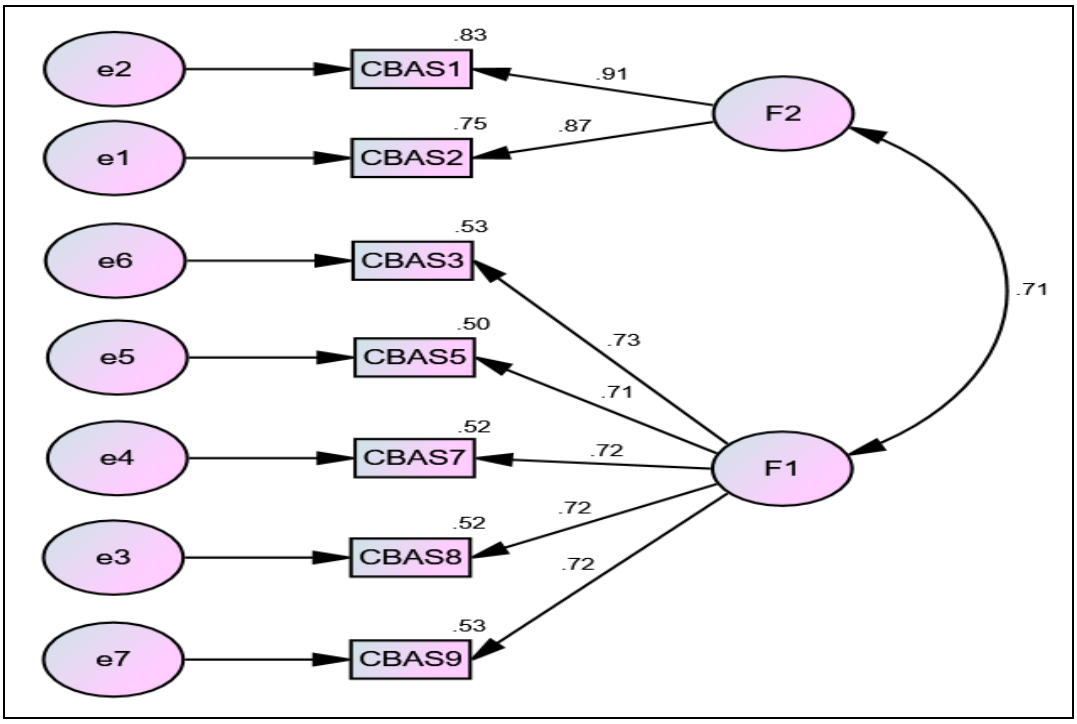

Figure 19: Factorial Structure of Indian CBAS

Source: Primary Data

Study 2 – Reliability and Validity Analysis

The results suggested that Cronbach's alpha (Cronbach & Noronha, 2004) values of the Indian CBAS, HCA, and GCC were 0.889, 0.871, and 0.858, respectively. The composite reliability values for Indian CBAS, HCA, and GCC were 0.91, 0.84, and 0.88, respectively. These values concluded the reliability of the seven-item CBAS in the Indian context. The AVE values for Indian CBAS, HCA, and GCC were 0.60, 0.52, and 0.79, respectively. These scores confirmed the convergent validity of the scale. According to Fornell & Larcker's (1981) testing system, the squared correlation of the factors should be less than their AVE values to establish discriminate scale validity.

Table 17: Fornell and Larcker testing system (FLTS)

Variables	Factor 1	Factor 2
HCA	1 **(0.52)**	
GCC	0.24	1 **(0.79)**

Source: Primary Data, AVE values in bold, HCA – Harmful Cyberbullying Attitude, GCC – General Cyberbullying Characteristics

Table 18: Correlation Matrix

Scales	CBAS	HCA	GCC	WBTS	GQ-6	PhQ-9
CBAS	1					
HCA	0.978	1				
GCC	0.843	0.714	1			
WBTS	0.362	0.331	0.304	1		
GQ-6	-0.136	-0.172	-0.142	-0.152	1	
PhQ-9	0.411	0.334	0.301	0.398	-0.172	1

Source: Primary Data, CBAS – Cyberbullying Attitude Scale, WBT – Weight-Based Teasing Scale, HCA – Harmful Cyberbullying Attitude, GCC – General Cyberbullying Characteristics, GQ-6 – Gratitude Questionnaire 6, PhQ-9 – Patient Health Questionnaire 9

Table 17 reported that AVE values were greater than squared correlations of factors, which confirmed the discriminant validity of two-factored Indian CBAS. The correlation coefficients between the scores of CBAS in the Indian context, WBTS, GQ-6, and PhQ-9 were calculated. Respondents with high cyberbullying attitudes are more likely to positively correlate with teasing and depression attitudes. Respondents with high cyberbullying attitudes are also likely to have lower gratitude levels. The results of the study revealed that WBTS scores were positively correlated with Indian CBAS ($r = 0.362$, $p < 0.01$), HCA ($r = 0.331$, $p < 0.01$) and GCC ($r = 0.304$, $p < 0.01$). Similarly, scores of PhQ-9 were also positively correlated with Indian CBAS scores ($r = 0.411$, $p < 0.01$), HCA ($r = 0.334$, $p < 0.01$) and GCC ($r = 0.301$, $p < 0.01$). In addition, GQ-6 negatively correlated with Indian CBAS scores ($r = -0.136$, $p < 0.01$) and HCA ($r = -0.172$, $p < 0.01$) and GCC ($r = -0.142$, $p < 0.01$). Table 18 reports the correlation matrix of various variables of the study. These values recommended the convergent validity of Indian CBAS.

The overall findings of the present study provide significant insights into the psychometric properties of CBAS in the Indian context and are in line with the original study and subsequent validation of the Brazilian sample. (Barlett et al., 2016; Cavalcanti et al., 2019). Psychometric properties present crucial information on the meaningfulness, appropriateness, and usefulness in a particular context. From this standpoint, the current study has validated the cyberbullying attitude scale, which befits the country's context.

4.2.4 Objective 4

Generation and individual-based variations

Table 19 suggests statistically significant generation-based differences in cyberbullying ($F\text{-value}=4.263$, $p<0.05$). Mean values of cyberbullying decreased

from Generation Z (mean=4.15) to Y (mean=3.698) to X (mean=2.325), which suggests that Generation Z has the most favourable attitude towards cyberbullying. In other words, Generation Z is more likely to indulge in cyberbullying activities, and Generation X is least likely to be involved in bullying others. Tukey's HSD test was used to conduct post-hoc analysis to better understand generational-based variations in cyberbullying attitudes, which reports significant differences among Generations X-Y, Y-Z, and X-Z.

Table 19: **Generation and individual-based variations in cyberbullying attitude**

Variable	Category	Mean	F/t-value	Sig.
Generation	Z	4.150	4.263	0.040*
	Y	3.698		
	X	2.325		
Gender	Male	4.02	8.602	0.001*
	Female	2.48		
Yearly Income	Less than INR 8 lacs	3.42	1.200	2.123
	INR 8 lacs to 15 lacs	3.35		
	More than INR 15 lacs	3.14		
Education level	Less than 12^{th} or below	2.97	3.145	0.038*
	Graduation	3.61		
	Post-graduation & above	3.16		
Profession	Self-employed	3.40	3.984	0.041*
	Government Job	2.69		
	Private Job	3.47		
	Student	3.81		
ICT Usage per day	Less than 3 hrs.	3.09	4.192	0.008*
	3 - 7 hrs.	3.86		
	7 hrs. or above	2.80		

Source: Primary Data, N-frequency, INR – Indian Rupee, *Significant at 0.05

Results also suggest that males (mean=4.02) have significantly higher cyberbullying attitudes than females (mean=2.48). It means that Indian males are more likely to bully others in cyberspace than Indian females. Also, there are no significant differences in cyberbullying based on the respondents' annual incomes. In addition, cyberbullying attitude varies statistically significantly across participants' education, profession, and daily ICT tools usage. It is reported that graduate people (mean=3.61) are more prone to cyberbullying, followed by 'PG and above' (mean=3.16) and '12^{th} or below pass' respondents (mean=2.97). Tukey's HSD post-hoc test also suggests significant differences across all three education categories, i.e., between 12^{th} or below graduation, graduation post-graduation and above, and 12^{th} or below PG and above. Also, students (mean=3.81) followed by private job holders (mean=3.47) are most likely to bully others. Additionally, government employees are least likely to indulge in cyberbullying (mean=2.69). Tukey's HSD post-hoc test reports nonsignificant variations among self-employed and private job

holders. In addition, respondents with '3 to 7 hrs' (mean=3.86) of daily ICT usage are more prone to cyberbullying, followed by 'less than 3 years' (mean=3.09). Interestingly, respondents with the highest usage of ICT tools are least likely to bully others. Further, post-hoc analysis reveals significant differences among all three categories of ICT usage.

Such results are possible because Generation Z is tech-savvy and has 24*7 unrestricted access to the internet compared to the other two generations (Nirupama & D'souza, 2021). They have a greater online reach, which increases their scope to indulge in cyberbullying. Previous researchers have also reported diluting ethical standards in younger generations (Housel, 2015; Meriac et al., 2015; Meriac et al., 2009). Verma and Garg (2022) even referred to the ethical conduct of Generation X as the 'new normal' and suggested revision in ethical standards to accommodate the views of Generation X. In addition, with age and experience, generation Z and Y acquire social and emotional maturity. They might be more aware of the ill repercussions of cyberbullying for both bullies and victims, leading to a better sense of ethical judgment. It makes them less susceptible to cyberbullying. The result seems in line with the traditional Indian notion of *four ashrams* (stage) in which human lifespan is divided into four periods: *brahmachari* (student), *grihastha* (*household*), *vanaprastha* (forest walker), and *sannyasa* (renunciation). Although it is not strictly followed, the essence of moral, ethical, and spiritual growth with age remains intact.

Table 20: Generation-based variations in cyberbullying attitude

Cyberbullying	Generation	Mean	Std. Deviation	F-Value	Sig.
GCC	Z	4.550	0.776	4.263	0.040*
	Y	4.498	0.838		
	X	4.425	0.760		
HCA	Z	4.158	0.669	5.338	0.010*
	Y	4.095	0.680		
	X	4.062	0.535		

Source: Primary Data, GCC – General Cyberbullying Characteristics, HCA – Harmful Cyberbullying Attitudes, *Sig. at p<0.05

Table 20 suggested statistically significant generational differences in GCC (F-value=4.263, $p<0.05$) and HCA (F-value=5.338, $p<0.05$), thereby offering empirical evidence for the acceptance hypotheses. Besides, the mean values for GCC and HCA decreased from generation Z (meanGCC=4.550 and meanHCA=4.158) to Y (meanGCC=4.498 and meanHCA=4.095) to X (meanGCC=4.425 and meanHCA=4.062). The results revealed that Generation Z has the most favorable cyberbullying attitudes than Generation Y and X. Tukey's HSD test was used to conduct post-hoc to better understand generation-based variations in GCC and HCA. Homogeneity of variance was explored to satisfy the statistical assumptions of Tukey's HSD test. The results of the test suggested significant variations across all three generations. Although no previous study has explored such variations in

cyberbullying attitudes, the results of the study are in line with those of Verma and Garg (2022). The authors of that study have suggested that older generations are more likely to express techno-ethics as compared to the younger generations. Similarly, our study also suggests that older generations are less likely to develop cyberbullying attitudes compared to younger generations.

Gender-based variations

Table 21: **Gender-based variations in cyberbullying attitude**

Variable	Category	Sub-category	Mean	F/t-value	Sig.
Generation	Z	Male	4.58	3.112	0.021*
		Female	3.89		
	Y	Male	3.73	2.921	0.033*
		Female	3.16		
	X	Male	2.68	4.350	0.007*
		Female	1.93		
Gender	Male	Z	4.58	7.849	0.000*
		Y	3.73		
		X	2.68		
	Female	Z	3.89	6.663	0.000*
		Y	3.16		
		X	1.93		

Source: Primary data; *Significant at 0.05

Table 21 illustrates that men of all three generations (X, Y, and Z) have significantly more favourable cyberbullying attitudes than women of different generations. This means that male respondents are more likely to indulge in cyberbullying than females of their respective generations. Also, among both males and females, people of Generation X have the lowest mean values for cyberbullying attitude ($mean_{male}$=2.68, $mean_{female}$=1.93). Also, respondents of Generation Z have the highest mean values for cyberbullying attitude ($mean_{male}$=4.58, $mean_{female}$=3.89). It clearly suggests that male of all three generations and people of Generation Z, among both males and females, exhibits a higher level of cyberbullying.

The finding seems a fit in a patriarchal society like India, where men are inherently more dominating, aggressive, and violent than women. Traditionally, Indian males were assigned the role of breadwinner, and females were confined to household tasks. Even after an increase in female labour participation, a working woman is supposed to take care of the house, children, husband, and parents. Culturally, Indian women are more sensitive, caring, and loving. Thus, they are less likely to hurt or bully anyone. Also, the National Crime Records Bureau (NCRB) of India reports that male criminals dominate nearly every crime list, including bullying and stalking. Although there is no official data on cyberbullying, the study suggests similar male-dominating trends for cyberbullying, too.

Table 22: Variations in cyberbullying attitudes based on gender

Cyberbullying	Gender	Mean	Std. Deviation	t-value	Sig.
GCC	**Male**	4.537	0.948	7.651	0.004*
	Female	4.479	0.735		
HCA	**Male**	3.788	0.872	6.841	0.009*
	Female	3.557	0.751		

Source: Primary data; *Significant at 0.05

An independent sample t-test was used to explore gender-based differences. The results reported in Table 22 showed significant gender-based variations in GCC ($t=7.651$, $p<0.05$) and HCA ($t=6.841$, $p<0.05$), and thereby, hypotheses were rejected. The mean values revealed that males have more favourable cyberbullying attitudes ($mean_{GCC}=4.537$ and $mean_{HCA}=3.788$) than females ($mean_{GCC}=4.479$ and $mean_{HCA}=3.557$). Though the results show significant variations based on gender, they also suggest that both genders develop inclinations toward GCC and HCA as the mean values are above the median value, meaning that an individual can develop positive attitudes towards cyberbullying others, irrespective of their gender. The results align with previous studies, like Chan et al.'s (2019) and Cavalcanti et al. (2019), where these authors suggested that both male and female participants were engaged in cyberbullying others, and males have higher cyberbullying attitude scores. Hence, gender does act as a differentiating variable of general cyberbullying characteristics and harmful cyberbullying attitudes in India.

Income-based variations

Table 23: **Income-based variations in cyberbullying attitude**

Variable	Category	Sub-category	Mean	F-value	Sig.
Generation	Z	< INR 8 lacs	4.33	3.117	0.047*
		INR 8 to 15 lacs	3.97		
		> INR 15 lacs	3.64		
	Y	< INR 8 lacs	3.91	1.221	0.831
		INR 8 to 15 lacs	3.72		
		> INR 15 lacs	3.27		
	X	< INR 8 lacs	2.85	0.738	2.784
		INR 8 to 15 lacs	2.48		
		> INR 15 lacs	2.10		
Income level	< INR 8 lacs	Z	4.33	2.749	0.393
		Y	3.91		
		X	2.85		
	INR 8 to 15 lacs	Z	3.97	1.739	1.840
		Y	3.72		

		X	2.48		
	>15 lacs	Z	3.64	2.530	0.738
		Y	3.27		
		X	2.10		

Source: Primary data; INR – Indian Rupee, *Significant at 0.05

Table 23 suggests that income-based variation in cyberbullying attitude is significant only for Generation Z respondents. People in the lowest income category, 'less than INR 8 lacs' (mean=4.33), showed the highest level of cyberbullying, followed by respondents with 'INR 8 to 15 lacs' (mean=3.97) and 'more than 15 lacs' (mean=3.64).

Table 24: Variations in cyberbullying attitude based on income levels

Cyberbullying	Approx. Annual Income	Mean	Std. Deviation	F-Value	Sig.
GCC	Less than 8 Lakhs	4.082	0.776	1.942	0.428
	8 to 25 Lakhs	4.135	0.783		
	More than 25 Lakhs	4.276	0.739		
HCA	Less than 8 Lakhs	3.331	0.714	1.678	0.201
	8 to 25 Lakhs	3.467	0.898		
	More than 25 Lakhs	3.558	0.705		

Source: Primary Data, *Significant at 0.05

Table 24 examined the variation in the GCC and HCA on the basis of the income levels of the respondents. The results revealed statistically insignificant income-based variation in cyberbullying attitudes.

Education level-based variations

Table 25: **Education level-based variations in cyberbullying attitude**

Variable	Category	Sub-category	Mean	F-value	Sig.
Generation	Z	Less than 12th or below	4.22	4.763	0.035*
		Graduation	4.46		
		PG & above	3.98		
	Y	Less than 12th or below	3.61	3.187	0.048*
		Graduation	3.87		
		PG & above	3.44		
	X	Less than 12th or below	2.47	3.748	0.040*
		Graduation	2.87		
		PG & above	2.02		
Education level	Less than 12th or below	Z	4.22	4.440	0.017*
		Y	3.61		
		X	2.47		

	Graduation	Z	4.46	3.751	0.037*
		Y	3.87		
		X	2.87		
	PG & above	Z	3.98	2.849	0.040*
		Y	3.44		
		X	2.02		

Source: Primary data; *Significant at 0.05

Table 22 reports statistically significant educational qualification-based variations in cyberbullying for all three generations, with graduate respondents depicting the most favourable attitude to bullying others ($mean_Z$=4.46, $mean_Y$=3.87, $mean_X$=2.47). People with the highest academic credentials (PG and above) showed the slightest interest in cyberbullying ($mean_Z$=3.98, $mean_Y$=3.44, $mean_X$=2.02). Further, significant generation-based differences were reported across participants of all education categories, with Generation Z being most prone to indulge in cyberbullying activities. People of Generation X with a PG or above degree are least likely to exhibit a cyberbullying attitude.

Reasons for such results could be that Indian school-going students (up to class 12^{th}) remain under the strict vigilance of parents and teachers with restricted and monitored access to technology. However, parents and teachers consider collegiates mature enough for unrestricted access to ICT. Moreover, many students leave their houses to join higher educational institutions. This unrestricted and unguided access to ICT might lead to greater levels of cyberbullying among graduates than only 12^{th}-pass respondents. Postgraduates are likely to be emotionally and socially mature to understand the harmful effects of cyberbullying. Also, higher education is supposed to foster empathy, compassion, and critical thinking, which could lead to more respectful and considerate online behaviour.

Table 26: Variation in cyberbullying attitude based on educational levels

Cyberbullying	Latest Education Level	Mean	Std. Deviation	F-value	Sig.
GCC	Secondary	4.619	0.741	5.277	0.031*****
	Senior Secondary	4.552	0.687		
	Graduate	4.320	0.875		
	Post Graduate	4.017	0.777		
	Doctorate	3.808	0.790		
HCA	Secondary	3.417	0.624	6.013	0.028*
	Senior Secondary	3.378	0.595		
	Graduate	3.299	0.610		
	Post Graduate	3.214	0.884		
	Doctorate	3.181	0.700		

Source: Primary Data, *Significant at 0.05

The latest educational levels were divided into five categories in study 2: secondary, senior secondary, graduate, postgraduate, and doctorate. The results reported statistically significant variations in GCC (F-value=5.277, $p<0.05$). The mean values indicated that participants who are secondary qualified (mean=4.619) have the most favourable cyberbullying attitude, followed by senior secondary (mean=4.552), graduate (mean=4.320), postgraduate (mean=4.017) and doctorate (mean=3.808). Tukey's HSD test also revealed statistically significant variations among five sets of educational qualifications. Similarly, results also indicated statistically significant variations in HCA (F-value=6.013, $p<0.05$). A similar trend was observed with the mean values of education qualification, i.e., participants who were secondary qualified (mean=3.417) had higher favourable cyberbullying attitudes, and participants with the highest educational qualification, i.e., doctorate (mean=3.181) had the least positive cyberbullying attitude. The Tukey's HSD test reported significant variations within these five educational qualification categories. These results are in line with previous studies like those conducted by Olubode et al. (2023). The authors also suggest that higher levels of education have resulted in lower involvement of Nigerian participants in bullying activities.

Profession-based variations

Table 27: **Profession-based variations in cyberbullying attitude**

Variable	Category	Sub-category	Mean	F-value	Sig.
Generation	**Z**	Self-employed	3.95	4.859	0.024*
		Government Job	2.83		
		Private Job	4.17		
		Student	4.66		
	Y	Self-employed	3.43	5.738	0.018*
		Government Job	2.70		
		Private Job	3.41		
		Student	3.83		
	X	Self-employed	3.11	4.117	0.029*
		Government Job	2.57		
		Private Job	3.26		
		Student	3.70		
Profession	Self-employed	Z	3.95	3.135	0.040*
		Y	3.43		
		X	3.11		
	Government Job	Z	2.83	2.748	0.048*
		Y	2.70		
		X	2.57		
	Private Job	Z	4.17	4.785	0.029*
		Y	3.41		
		X	3.26		

	Student	Z	4.66	3.997	0.035*
		Y	3.83		
		X	3.70		

Source: Primary data; *Significant at 0.05

Table 27 suggests that cyberbullying attitude varies across people's professions across all generations of respondents. Students are most likely to involve in bullying activities ($mean_Z$=4.66, $mean_Y$=3.83, $mean_X$=3.70), with government employees least likely to exhibit cyberbullying attitude ($mean_Z$=2.83, $mean_Y$=2.70, $mean_X$=2.57). It also reports that people in private jobs have more favourable cyberbullying attitudes than self-employed and freelancer respondents. Further, Generation Z has the most favourable cyberbullying attitude among people in all professions. Further, government employees enjoy greater prestige and permanence than private workers in India. However, the state puts stringent rules and regulations on the conduct of its employees—any illegal or immoral act like cyberbullying leads to severe penal actions, including suspensions and dismissals. The fear of such disciplinary action might deter government employees from indulging in cyber uncivil behaviour.

Daily ICT usage-based variations

Table 28: **Daily ICT usage level-based variations in cyberbullying attitude**

Variable	Category	Sub-category	Mean	F-value	Sig.
Generation	Z	Less than 3 hrs.	3.47	5.923	0.001*
		3 - 7 hrs.	4.46		
		7 hrs. or above	3.07		
	Y	Less than 3 hrs.	2.94	3.039	0.045*
		3 - 7 hrs.	3.93		
		7 hrs. or above	2.72		
	X	Less than 3 hrs.	2.40	4.125	0.032*
		3 - 7 hrs.	3.13		
		7 hrs. or above	2.11		
ICT Usage level	Less than 3 hrs.	Z	3.47	3.794	0.018*
		Y	2.94		
		X	2.40		
	3 - 7 hrs.	Z	4.46	4.086	0.027*
		Y	3.93		
		X	3.13		
	7 hrs. or above	Z	3.07	3.859	0.033*
		Y	2.72		
		X	2.11		

Source: Primary data; *Significant at 0.05

Table 28 recommends significant ICT usage-based variations in cyberbullying attitude across all three generations, with people in the usage category of '3 to 7 hrs daily usage' most likely to hurt others in cyberspace ($mean_Z$=4.46, $mean_Y$=3.93, $mean_X$=3.13). Interestingly, people with the highest usage of ICT tools are least prone to bully others across three generations ($mean_Z$=3.07, $mean_Y$=2.72, $mean_X$=2.11). Also, Generation Z and Generation X have the most and least favourable cyberbullying attitudes among people of all ICT usage categories. It seems that higher indulgence in ICT makes people more aware of IT rules and the repercussions of unethical cyber activities. Previous researchers have also suggested that digital citizenship is a function of higher exposure to ICT.

Table 29: Variation in cyberbullying attitude based on daily ICT usage

Cyberbullying	Daily ICT Usage	Mean	Std. Deviation	F-value	Sig.
GCC	Less Than 3 Hours	4.321	0.843	8.260	0.000*****
	3 - 7 Hours	4.580	0.685		
	7 and above	4.669	0.527		
HCA	Less Than 3 Hours	3.602	0.821	5.424	0.033*****
	3 - 7 Hours	3.991	0.826		
	7 and above	3.967	0.632		

Source: Primary Data, *Significant at 0.05

Table 29 reported significant variations in the GCC (F-value=8.260, $p<0.05$) and HCA (F-value=5.424, $p<0.05$) on the basis of daily ICT usage in study 2. The mean GCC was highest for the participants using ICT over 7 hours daily (mean=4.669). Besides, it was observed that people who use ICT for 3-7 hours a day are more inclined to develop HCA (mean=3.991). The Post-hoc analysis supplemented the results of ANOVA and suggested that the mean differences between people using ICT over 7 hrs a day and 3-7 hours a day were lowest compared to 3-7 hours a day and below 3 hours a day and above 7 hours a day and below 3 hours a day. Although the results suggested that more time spent on ICT leads to the development of cyberbullying attitudes, these results differ from the previous studies on ICT use. For instance, Kim and Faith (2020) suggest that participants who spent greater time using ICT were more indulged in bullying activities. However, in our study, it is reported that only the participants who spent 3-7 hours using ICT are more likely to develop cyberbullying intentions compared to those spending more than 7 hours.

Locality based variations

Table 30 reported results of variations in the cyberbullying attitudes based on the residence locality of the respondents in the study 2. The participants' locality was divided into three categories: rural areas, towns, and megacities. The findings

suggested statistically significant locality-based variations in the GCC (F-value=7.466, p<0.05). The mean values suggested that people residing in town (mean=4.519) have the most favourable cyberbullying attitude, followed by people living in megacities (mean=4.485) and rural areas (mean=4.405).

Table 30: Variations in cyberbullying attitudes based on locality

Cyberbullying	Locality	Mean	Std. Deviation	F-value	Sig.
GCC	Town	4.519	0.624	7.466	0.006*****
	Megacities	4.485	0.798		
	Rural Areas	4.405	0.682		
HCA	Town	3.728	0.800	0.765	0.514
	Megacities	3.775	0.787		
	Rural Areas	3.825	0.748		

Source: Primary Data, *Significant at 0.05

Tukey's HSD test also revealed statistically significant variations among three sets of localities. Statistically insignificant locality-based variations were observed in the HCA (F-value=0.765, p>0.05). These results follow the studies on technology adoption, such as those conducted by Sindakis and Showkat (2024). The authors have also highlighted that, including the factors discussed in the preceding sections, urban participants are more likely to adopt new technologies compared to participants from rural backgrounds.

Family structure based variations

Table 31: Variation in cyberbullying attitude based on family structure

Cyberbullying	Family Structure	Mean	Std. Deviation	F-value	Sig.
GCC	Nuclear Family	4.662	0.718	6.281	0.025*****
	Joint Family	4.335	0.822		
	Extended Joint Family	3.841	0.661		
HCA	Nuclear Family	3.979	0.634	1.171	0.179
	Joint Family	3.571	0.752		
	Extended Joint Family	3.029	0.680		

Source: Primary Data, *Significant at 0.05

Table 31 reports the variations in cyberbullying attitudes based on family structure. We categorised family structure into three main categories: nuclear, joint, and extended joint families. The results indicated statistically significant variations in GCC (F-value=6.281, p<0.05), further indicating that people who live in nuclear family structures (mean=4.662) have higher positive cyberbullying attitudes followed

by joint families (mean=4.335) and extended joint families (mean=3.841). The Tuckey's HSD also reported statistically significant variations among the three family structures.

4.2.5 Objectives 5 and 6

Reliability, Validity, Multicollinearity, and Common Method Variance

Table 32: Descriptive Statistics

Variables	Study 1					
	Mean	**SD**	**CA**	**CR**	**AVE**	**VIF**
HCA	4.331	0.297	0.838	0.86	0.51	1.07
GCC	3.020	0.367	0.812	0.72	0.57	1.08
Cyberbullying	4.353	0.323	0.865	0.89	0.52	----
Depression	3.115	0.547	0.911	0.88	0.60	----
Fear	3.879	0.128	0.857	0.76	0.50	----
Guilt	3.155	0.442	0.818	0.82	0.54	----
Variables	**Study 2**					
	Mean	**SD**	**CA**	**CR**	**AVE**	**VIF**
HCA	4.312	0.102	0.810	0.79	0.53	1.171
GCC	3.284	0.274	0.857	0.81	0.61	1.053
Cyberbullying	4.519	0.415	0.917	0.84	0.55	----
Depression	4.280	1.010	0.823	0.91	0.61	----
Fear	4.010	0.218	0.834	0.84	0.60	----
Guilt	3.657	0.101	0.882	0.80	0.55	----

Source- Primary data, CA- Cronbach'alpha, CR- Composite reliability, AVE- Average Variance Explained, VIF – Variance Inflation Index

Cronbach's alpha (CA) and composite reliability (CR) values were computed to assess the internal consistency reliability. The acceptable values of CA and CR are 0.70 (George & Mallery, 2003). In both studies, the CA and CR values for HCA, GCC, overall CBAS, depressive symptoms, fear, and guilt were above the required threshold limit of 0.70, establishing their reliability (please refer to Table 32). In addition, the average variance explained (AVE) was computed to verify convergent validity. The acceptable values of AVE are 0.5 and above (Fornell & Larcker, 1981). The AVE values were greater than 0.5 for all the variables used in the two studies, confirming convergent validity (refer to Table 33). The discriminant validity was assessed using Fornell and Larcker's (1981) method, according to which the AVE should be greater than the squared correlation between the two constructs of cyberbullying. Table 3 confirmed discriminant validity in the case of both samples.

Table 33: Discriminant Validity

Variables	Study 1		Study 2	
	HCA	**GCC**	**HCA**	**GCC**
HCA	1**(0.51)**		1**(0.53)**	
GCC	0.328	1**(0.57)**	0.308	1**(0.61)**

Source- Primary data, AVE values in bold, HCA – Harmful Cyberbullying Attitudes, GCC – General Cyberbullying Characteristics

Further, since two dimensions of cyberbullying were measured in the present study, it is imperative to evaluate multicollinearity among HAC and GCC. Multicollinearity was assessed with the help of the variance inflation factor (VIF) value, which should be less than 3 (Kline, 2005). The VIF values of HAC and GCC in Study 1 were 1.075 and 1.087, and in Study 2, the values were 1.171 and 1.053, respectively (please refer to Table 32). It confirms the absence of significant multicollinearity among HAC and GCC in both studies. Although the study is based on a longitudinal design, which reduces the probability of common method bias, Harman's one-factor test was conducted to assess the significance of common method bias in both studies. It was observed that factor analysis of all study items did not yield a single factor, which, according to Chang et al. (2010), negates the possibility of significant CMV. The largest factor explains 32.81% of the variance in Study 1 and 30.27% in Study 2.

Relationship between cyberbullying and depressive symptoms

Table 34: Correlation Matrix (Study 1)

Variables	1	2	3	4	5	6
HCA	1					
GCC	0.461*	1				
Cyberbullying	0.782*	0.723*	1			
Depressive symptoms	0.517*	0.513*	0.634*	1		
Guilt	0.601*	0.559*	0.631*	0.471*	1	
Fear	0.499*	0.525*	0.533*	0.568*	0.461*	1

Source- Primary data, * Sig at 0.05, HCA – Harmful Cyberbullying Attitudes, GCC – General Cyberbullying Characteristics

Table 35: Correlation Matrix (Study 2)

Variables	1	2	3	4	5	6
HCA	1					
GCC	0.527*	1				
Cyberbullying	0.752*	0.716*	1			
Depressive	0.521*	0.507*	0.598*	1		

symptoms						
Guilt	0.504*	0.481*	0.563*	0.411*	1	
Fear	0.534*	0.610*	0.535*	0.544*	0.511*	1

Source- Primary data, * Sig at 0.05, HCA – Harmful Cyberbullying Attitudes, GCC – General Cyberbullying Characteristics

Tables 34 and 35 report the correlations between the variables used in the first and second studies. The results from both studies reveal that depressive symptoms significantly positively correlate with the two dimensions of cyberbullying, i.e., general cyberbullying characteristics (r_{study1} = 0.513, r_{study2} = 0.507, $p<0.05$), harmful cyberbullying attitudes (r_{study1} = 0.517, r_{study2} = 0.521, $p<0.05$), as well as overall cyberbullying (r_{study1} = 0.634, r_{study2} = 0.598, $p<0.05$).

Table 36: Results of hierarchical multiple regression (DV- Depressive Symptoms)

Model	**Variable**	**Study 1**				
		B	**SE**	**Sig.**	**R^2**	**F-value**
1	Constant	1.719	0.510	.387	0.089	7.691
	Gender	0.076	0.040	.461		
	Age	0.058	0.017	.256		
2	Constant	3.643	0.850	.128	0.518	0.003*
	Gender	0.061	0.034	.129		
	Age	0.058	0.055	.342		
	HCA	0.610	0.237	.028*		
	GCC	0.522	0.153	.001*		
Model	**Variable**	**Study 2**				
		β	**SE**	**Sig.**	**R^2**	**F-value**
1	Constant	4.216	0.218	1.392	0.091	1.268
	Gender	0.012	0.111	0.328		
	Age	0.253	0.894	0.874		
2	Constant	1.698	1.071	1.967	0.586	0.012*
	Gender	0.114	0.174	0.521		
	Age	0.109	0.250	0.389		
	HCA	0.697	0.029	0.011*		
	GCC	0.621	0.061	0.009*		

Source- Primary data, * Sig. At 0.05, HCA – Harmful Cyberbullying Attitudes, GCC – General Cyberbullying Characteristics, β-Standardized coefficient, SE-Standard error

Table 36 illustrates the results of the two-stage hierarchical regression of both studies. The regression model considers only control variables (age and gender) in the first stage, which were insignificant predictors of depressive symptoms. In the second stage, HCA and GCC regressed over depression symptoms, and both were

reported to significantly predict depressive symptoms among participants. The regression coefficient for HCA ($\beta_{study\ 1}$= 0.522, and $\beta_{study\ 2}$= 0.621, p<0.05) and GCC ($\beta_{study\ 1}$= 0.610, and $\beta_{study\ 2}$= 0.697, p<0.05) supports the first two hypotheses of the study. Two dimensions of cyberbullying perpetration could explain 51.8% and 58.6% variations in depressive symptoms in cyberbullies in the first and second studies, respectively. These results confirmed the initial proposition that cyberbullies are likely to develop depressive symptoms. Previous studies like Shaikh et al. (2020) and Wright (2018) have concluded that cyberbullying leads to stress, anxiety, and depression among victims. In line with these findings, present studies conclude that indulgence in cyberbullying contributes to depressive symptoms in cyberbullies. Hence, it seems like cyberbullying is a loss-loss situation, where both the victim and the bully suffer severe mental illness. Moreover, the results of this study also follow those of the previous studies conducted by Samsudin et al. (2023) and Ho et al. (2020). Ho et al. (2020) suggested the development of mental disorders like depressive symptoms in Vietnamese university students due to their victimisation in cyberspace. On similar grounds, Samsudin et al. (2023) reported family dysfunction and psychological distress among victims of cyberbullying. However, our study reveals that cyberbullies can also develop mental disorders like depressive symptoms due to their acts of cyberbullying others. Our study also empirically supports the applicability of the cognitive dissonance theory as the results suggest that cyberbullies develop depressive symptoms out of their acts of bullying others, which are against their moral beliefs and self-concept. In other words, when cyberbully realises that they have done something that is against their moral grounds, they can develop depressive symptoms.

Parallel Mediation effect of fear and guilt

Table 37: Results of Parallel Mediation Analysis

Variables	**Study 1**				**Study 2**			
	Direct Effect				**Direct Effect**			
	Coeff	**S.E.**	**LLCI**	**ULCI**	**Coeff**	**S.E.**	**LLCI**	**ULCI**
GCC → DS	0.129	0.011	0.018	0.148	0.117	0.005	0.021	0.298
Variables	**Indirect Effect**				**Indirect Effect**			
	Effect	**S.E.**	**LLCI**	**ULCI**	**Effect**	**S.E.**	**LLCI**	**ULCI**
GCC →Guilt→ DS	0.161	0.001	0.103	0.314	0.180	0.025	0.051	0.287
GCC →Fear→ DS	0.221	0.016	0.089	0.225	0.277	0.081	0.131	0.362
Variables	**Total Effect**				**Total Effect**			
	Effect	**S.E.**	**LLCI**	**ULCI**	**Effect**	**S.E.**	**LLCI**	**ULCI**
Total effect	0.511	0.021	0.234	0.659	0.574	0.095	0.381	0.618
Variables	**Study 1**				**Study 2**			
	Direct Effect				**Direct Effect**			
	Coeff	**S.E.**	**LLCI**	**ULCI**	**Coeff**	**S.E.**	**LLCI**	**ULCI**
HCA → DS	0.154	0.133	0.113	0.356	0.189	0.098	0.293	0.408

Variables	Indirect Effect				Indirect Effect			
	Effect	**S.E.**	**LLCI**	**ULCI**	**Effect**	**S.E.**	**LLCI**	**ULCI**
HCA →Guilt→ DS	0.198	0.011	0.093	0.280	0.187	0.025	0.196	0.414
HCA →Fear→ DS	0.203	0.017	0.094	0.246	0.211	0.041	0.133	0.301
Variables	**Total Effect**				**Total Effect**			
	Effect	**S.E.**	**LLCI**	**ULCI**	**Effect**	**S.E.**	**LLCI**	**ULCI**
Total effect	0.555	0.170	0.264	0.781	0.587	0.101	0.350	0.801

Source: - Primary Data, GCC – General Cyberbullying Characteristics, HCA – Harmful Cyberbullying Attitude, DS- Depressive Symptoms,*Sig at 0.05

Table 37 explores the parallel mediation effect of fear and guilt in the relationship between overall GCC and depressive symptoms and HCA and depressive symptoms in IT students (study 1) and employees (study 2). It is observed that the indirect effects of guilt are a) 0.161 and 0.180 in study 1 and study 2, respectively, in the case of GCC, and b) 0.198 (study 1) and 0.187 (study 2) in the case of HCA. Also, the indirect effects of fear are a) 0.203 and 0.211 in study 1 and study 2, respectively, when GCC is the independent variable, and b) 0.198 (study 1) and 0.187 (study 2) when HCA is the independent variable. The indirect effects of fear and guilt were reported to be significant, as zero does not lie between LLCI and ULCI. The results also suggested that the direct effects of cyberbullying on depressive symptoms in both studies are significant, as zero does not lie between LLCI and ULCI. Hence, the results suggest significant mediation effects of fear and guilt. Consequently, these results provide empirical support for hypotheses H11a, H11b, H12a and H12b, which are accepted. This means that individuals can develop high levels of guilt upon realising that their act of cyberbullying was against societal norms and has caused harm to the victim. This situation further leads to a rapid increase in depressive symptoms. Similarly, individuals who develop fear due to their acts of cyberbullying tend to develop depressive symptoms faster. Hence, guilt and fear fully mediate the relationship between overall cyberbullying and depressive symptoms. Therefore, the results of the two studies have helped in understanding how guilt and fear can act as the mechanisms that explain the development of mental health disorders (depressive symptoms) in cyberbullies due to their act of cyberbullying others. As seen in study 1, the IT students showed feelings of fear and guilt of their actions, due to which they had developed depressive symptoms. Further, these results were appropriately replicated in the study 2 (IT sector employees). Moreover, it is noteworthy that, although the research on this topic is growing, including fear and guilt as mediators in the proposed relationship is a valuable contribution.

CHAPTER 5

IMPLICATIONS

5.1 Introduction

This chapter presents the theoretical and practical implications of our research. These implications have been reported according to the studies undertaken to achieve the said objectives of our research.

5.2 Theoretical

Cyberbullying from Bullies' perspective

The present study is not limited to cross-cultural contexts or educational setups. Instead, it analyses the bibliometric and sets the future research agenda in the cyberbullying perpetration domain. This study provides a snapshot of the extent of literature on cyberbullying perpetration as it explores the current trends and scope of research. Therefore, scholars and other stakeholders can utilise the findings to understand the present literature and develop a view on the future of cyberbullying perpetration literature. Secondly, the study explored the most active countries, top influential journals, and articles on cyberbullying perpetration by utilising scientific mapping techniques like citation analysis and co-occurrence analysis. Hence, budding researchers in the pursuit of developing knowledge can leverage the study's findings to recognise potentially high-performing journals and countries.

With the help of most cited research papers and review papers (seminal work), budding scholars can create a sound understanding of the topic and study the application of theories, development of models, and evolution of the literature, along with collaborating with authors in this area. Thirdly, our topical analysis of cyberbullying perpetration brings forth significant themes on the topic. This topical analysis allows the readers and scholars to acquire an extensive understanding of the knowledge structure and its evolution over time. For example, the study provides new and emerging topics like mental health in relation to cyberbullying perpetrations. Furthermore, it suggests the importance of exploring it concerning cyberbullies, as they are also affected by their act of cyberbullying. Fourthly, we provide a brief discussion on the literature gap (as presented in the literature review section) due to the reason that various studies have restricted themselves to either

geographical regions or to an industry/institutional setup, which makes it appear as fragments of the vast body (similar to the comparative view of galaxies to the universe). Hence, the study adds to the global literature on cyberbullying, especially from the perpetrators' side, whose area remains underexplored and has recently drawn the attention of researchers and policymakers.

Cyberbullying and Mental Health

The present study analyses the academic performance of the research articles and sets the future agenda for researchers in the cyberbullying and mental health domain. The study is not limited to a geographical location, culture, institutional setup, or age group. Hence, it provides an overall view of the topic of cyberbullying and mental health. The results from the first question presented the historic and current performance of the literatures. It further indicated a rising trend in publications and citations, which suggested a great future and increasing importance of the topic. These results will assist researchers by making them aware that the research potential of the topic is vast and increasing, as depicted by publication and citation trend analysis. Further, it analyses the most active and emerging countries publishing on the domain. In other words, the results indicated countries where the research has started but is in a nascent stage and countries where the research has not been started and requires focus.

Furthermore, it helps researchers recognise a shift in the area of journal publication. Moreover, it helps them identify the most influential journals and articles on the topic of cyberbullying. For instance, the results presented a list of the top ten seminal articles and a list of the top five emerging articles that can become a strong base of literature for the stakeholders. Lastly, by providing a topical analysis, this study informs the researchers about the emerging themes on the topic. For instance, future researchers can conduct a bibliometric analysis of cyberbullying from the perpetrator's angle. This study encourages researchers to explore the impact of cyberbullying on the mental health of people. Significant progress has been made globally in understanding cyberbullying. Now, it is time to understand the impact of cyberbullying on people's mental health and to devise measures to reduce the impact. Hence, the study will help researchers analyse the future agendas on cyberbullying and mental health and to determine research gaps that require in-depth studies.

Cyberbullying Attitude Scale

As there existed a void for a reliable and valid scale to measure the cyberbullying attitude amongst Indian college students, the validation of CBAS in the Indian context is one step towards filling this gap. Further, the scale will help the researchers correlate cyberbullying attitudes with variables like substance abuse, revenge, and moral disengagement. Finally, the insights from the study will add to the available literature, as little literature exists on cyberbullying in the Indian context.

Generational and Demographic Differences

It adds to the literature on cyberbullying, which is heavily tilted towards examining victims' perspectives. The study's findings might encourage future researchers to unravel cyberbullies' perspectives. It also adds to the literature on intergenerational differences, arguing that variations in the behaviour of different generation cohorts are due to similar life events and experiences. The study also suggests that gender, academic credentials, profession, and internet usage can influence cyberbullying attitudes.

Cyberbullying and Depressive Symptoms

The present study offers significant theoretical and practical implications for researchers and practitioners. The literature on cyberbullying is mainly limited to understanding the phenomena from the victims' perspective. The present study examines the same from the point of view of bullies. Understanding the phenomena in totality is imperative to suggest different interventions for its minimisation and prevention. This study is poised to encourage researchers to evaluate cyberbullying from bullies' perspectives, which will lead to more effective and precise interventions and practices to deal with the menace of cyberbullying. The results state that cyberbullying leads to depression among bullies, too. Further, the study offers empirical evidence for the guilt complex theory. The theory states that guilt arises from internalising that a person's action is against societal norms. The study suggests that an individual develops depression based on guilt arising from their act of cyberbullying others.

This study also strives to bridge that gap because there is not much literature on explaining the guilt complex in academia. Also, the study acts as an extension of karmic law. As the law is a cause-and-effect law, this study expands the law in academia. The study further expands the literature on karmic law by adding to the scarce literature of empirical testing of the negative effect of karmic law on the human psyche, here the development of fear and its mediating role on the relationship between cyberbullying and depressive symptoms. The study suggests that the application of the law based on unintentional cyberbullying creates fear in the respondents' minds, leading to depressive symptoms. The study also expands the literature on fear. The scarce literature contains a study on school students and children under 18. The study bridges this literature gap by studying fear among college students. Our study extends the literature on cognitive dissonance theory. However, the theory suggests that when individuals internalise that their actions are against their moral values, they tend to develop cognitive dissonance. However, by using guilt complex theory and karmic law, the results of this study empirically suggest that guilt complex (guilt) and karmic law (fear) can act as the mechanism explaining how an individual (cyberbully) can develop cognitive dissonance (depressive symptoms) realising that their actions are against their moral grounds and now they will face repercussions.

5.3 Policy/Managerial

Cyberbullying from Bullies' perspective

The increased cases of cyberbullying perpetration have lit the lamp of curiosity in the minds of researchers, policymakers, and managers to understand and mitigate this unethical practice while encouraging the ethical use of ICT. The findings of this study explore and identify the gaps that require the attention of managers, academicians, and policymakers. The topical analysis suggests that managers and academicians should pay attention to the challenges caused by unethical internet usage, social media, and substance addiction, as suggested by studies included in this bibliometric analysis. Managers and academicians should be skilled in creating awareness about cyberbullying perpetration, its negative consequences, and mental health in organisations. Meeting these challenges will necessitate proactive efforts to develop an ethical and conducive organisational environment that hinders cyberbullying (at least in the organisation). Hence, the study's results will also help the institutions to launch potential collaborations with researchers and academia to create and execute policies, codes of conduct, and training curricula (Williford et al., 2013). Moreover, the findings of this study will promote the implementation of responsible, ethical, and positive social behaviour that will promote 'digital citizenship behaviour.' These motives can be achieved by collaborating with academia and formulating programs, launching campaigns, and conducting workshops and seminars on themes such as (a) cyberbullying and its consequences for perpetrators, (b) digital citizenship, and (c) techno-ethics.

Further, the results of this study will help authorities and governments at the national and international levels to design more precise measures to curtail cyberbullying incidents. Governments across the globe should recognise cyberbullying as a criminal act, align their laws governing the use of ICT in this light, and pledge to promote the ethical use of ICT and social media to prohibit cyberbullying. Furthermore, the results from the topical analysis will help future researchers to orient their research on the basis of the keywords identified. Additionally, these results suggest that organisations should revisit their internet and social media use policies, as Farley et al. (2021) have also suggested cyberbullies exploit ambiguous organisational policies on internet and social use. Hence, organisations can reinforce their policies to hinder the proliferation of cyber perpetration. The results of the topical analysis also link gender and age with perpetration. Hence, in present-day organisations where three generations work together, they are required to formulate policies, intervention programs, and awareness campaigns based on the needs of individuals or at least generations. Also, future researchers can explore African and South American nations for cross-cultural results since this study presents that there exists a void in the literature from these countries based on country analysis.

Lastly, as the study links cyberbullying perpetration with several issues, including mental health and moral disagreement, it also presents a literature gap on individual-level interventions that can be adopted to decrease cases of cyberbullying

perpetration. Researchers may study and help policymakers and managers develop individual-level interventions based on positive psychology 2.0. The focus may be on using positive emotions to cushion and decrease the negative consequences of cyberbullying perpetration on the mental and emotional health of the perpetrator. In this regard, universities may introduce courses on developing and harnessing positive emotions in students, and managers may display positive emotions like gratitude among subordinates to encourage them to learn to display positive emotions.

Cyberbullying and Mental Health

The study will also help policymakers and academics develop programs and policies for creating awareness regarding cyberbullying and its impact on mental health at both academic and other institutional levels. Programs on the topic will also help people understand the phenomenon of cyberbullying and reduce the feelings that hamper them from asking for help if they are trapped in cyberbullying or experiencing its adverse impact on their mental health. Furthermore, the laws in India do not adequately describe cyberbullying and its consequences. Hence, the definitions of cyberbullying offered in this study, especially by Smith et al. (2008), will help Indian policymakers to define cyberbullying, identify it as a crime, and frame rules/corrections/punishments based on severity depending on the intensity of consequences its victim suffers. For instance, a victim committing suicide after experiencing cyberbullying may be deemed as the most severe consequence of cyberbullying, and lawmakers may define rules accordingly.

Cyberbullying Attitude Scale

The adoption of this scale will open a dimension of opportunities for stakeholders like psychologists and teachers to assess the bullying attitude of students, which would help develop and deploy effective countermeasures against cyberbullying. For instance, the scale can be used during admissions in schools or colleges or by recruiters while recruiting employees. This scale will help the admission officer or recruiter determine the candidate's cyberbullying attitude. Hence, a vigil can be set on such a person with a cyberbullying attitude if admitted/recruited (Verma et al., 2022). Also, counselling or seminars can be arranged to sensitise the candidate to cyberbullying intentions regarding the negative consequences to the victim and the dire repercussions to the bully. The seminars or workshops can further help modify the beliefs supporting aggression, especially in the form of cyberbullying (Ang, 2015). These policy interventions can further detail the correct procedure(s) to report cyberbullying and the person to be contacted if any individual requires help quitting cyberbullying. Educational institutions may expand their policies to start anti-cyberbullying programs and educate students. In India, volunteers of the National Service Scheme (NSS) or policymakers may collaborate with educational institutions to spread awareness regarding cyberbullying and its consequences for both victims and bullies.

Generational and Demographic Differences

The study's findings will help develop targeted interventions considering different generations' unique needs, perspectives, and demographic profiles. For example, interventions aimed at reducing cyberbullying among adolescents may need to address different factors than those aimed at reducing cyberbullying among older adults. Policymakers, parents, and HR managers may develop specific intervention strategies for groups more vulnerable to being perpetrators. For instance, educational and awareness programs related to the negative impacts of cyberbullying can introduced at the academic institutional level to sensitise students against cyberbullying. Moreover, these programs or curricula might be based on developing digital citizenship and techno-ethics. The government can launch similar programs and awareness campaigns to sensitise adults against cyberbullying. Secondly, gender-sensitive policies need to be framed that highlight gender-based differences in cyberbullying attitudes. These policies may involve interventions focused on promoting empathy and respect among genders. Thirdly, the current study highlights the necessity of regulating Generation Z's internet use, as they appear to be most prone to bullying others online. This may require monitoring and controlling their digital activities to prevent cyberbullying incidents. Fourthly, the organisational management might use the Indian Cyberbullying Attitude Scale (Bansal et al., 2022) to proactively detect cyberbullying attitudes while recruiting candidates or appraising the present workforce. Accordingly, the management can hire the candidate or positively appraise the existing employees based on their scores derived from the Indian Cyberbullying Attitude Scale.

Cyberbullying and Depressive Symptoms

This study suggests that educational and organisational policymakers', teachers', and managers' attempts to sensitise college students and employees, respectively, about the ill effects of cyberbullying must include a detailed discussion of its repercussions on bullies, too. The primary focus of present-day awareness programs is on elaborating on cyberbullying's ill effects on victims and the penal provisions available to bring the culprit to justice. The mere notion that even if cyberbullies are not caught, they are bound to experience depression owing to remorse, guilt, or fear might reduce instances of cyberbullying.

Also, it recommends policymakers to include seminars, workshops, and educational material on cyberbullying. It is further recommended that they create awareness of cyberbullying and cyberbullying attitudes by making it mandatory for educational institutions and corporate houses to include seminars, workshops, and educational materials as a part of their curriculum. This will sensitise the younger generation and working professionals and make them moral citizens of tomorrow.

The findings from this study will also enable cyberbullies to tackle their fear and guilt. This study will help society, especially Indian society, to understand that not all crimes are committed deliberately. Instead, a person can unknowingly perform

actions against societal norms. Hence, it will enable society not to stigmatise a cyberbully. Organisations are encouraged to follow open-door policies to create an open society. An open society will help cyberbullies not to develop guilt. Through the findings of this study, a cyberbully can openly seek help from counsellors, family, and friends. They can openly talk about their actions and repent of them. Consequently, the guilt can be reduced if not eliminated, thereby preventing a cyberbully from developing depressive symptoms.

It will also help cyberbullies to come out and talk about their actions and help them mitigate the future possibilities of such actions. It will also help them destigmatise as criminals and provide them with corrective action. For instance, cyberbullies may resort to counsellors to help them come out of fear of being caught or socially excluded. Lastly, workshops promoting ‘Prayashchit’ (Repentance) and Penance may be conducted. These workshops will help individuals realise their misdeeds and encourage them to reform their lives. Further, these workshops will encourage them to stand against weight-based teasing and help others.

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APPENDIX

7.1 Cyberbullying Attitude Scale

Original Version by Barlett et al. (2016)

How much do you agree with (rate on a scale of 1 to 5, where 1 – Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly Agree)

1. It's fun to tease or make fun of others with offensive messages online.
2. It is okay to send messages to or make offensive online posts about others.
3. I feel good about attacking others online when they deserve it.
4. I have no reservations about using technology to hurt others when they deserve it.
5. Harming others using electronic means is acceptable.
6. School/college rules are inefficient for stopping cyberbullying.
7. Sending malicious electronic messages to others is less harmful than face-to-face communication.
8. Attacking others online may be justified.
9. Because I am not face-to-face with the other person when I'm online, I feel I can say what I want, even if it is evil and offensive.

7.2 Indian Cyberbullying Attitude Scale

Indian Version by Bansal et al. (2022)

How much do you agree with (rate on a scale of 1 to 5, where 1 – Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly Agree)

1. It's fun to tease or make fun of others with offensive messages online.
2. It is okay to send messages to or make offensive online posts about others.
3. I feel good about attacking others online when they deserve it.
4. Harming others using electronic means is acceptable.
5. Sending malicious electronic messages to others is less harmful than face-to-face communication.

6. Attacking others online may be justified.
7. Because I am not face-to-face with the other person when I'm online, I feel I can say what I want, even if it is evil and offensive.

7.3 Trauma-Related Guilt Inventory

Original version by Kubany et al. (1996)

(Modified to our requirements)

Please take a few moments to think about what happened. All the statements below refer to events related to this experience. Indicate your answer by choosing rating ranging between 1 to 5, where 1 – Not at all, 2 – Slightly True, 3 – Somewhat True, 4 – Very True, 5 – Extremely True.

1. I could have stopped cyberbullying other.
2. I am still distressed about cyberbullying others.
3. I had some feelings that I should not have cyberbullied others.
4. What I did was completely justified.
5. I was responsible for causing harm to others.
6. Cyberbullying others caused me emotional pain.
7. I did something that went against my values.
8. What I did made sense.
9. I knew better than to do what I did.
10. I feel sorrow or grief that cyberbullying others harmed them.
11. What I did was inconsistent with my beliefs.
12. If I knew today – only what I knew when cyberbullying occurred – I would do exactly the same thing.
13. I should have been aware of its consequences.
14. I experience severe emotional distress when I think about cyberbullying others.
15. I had some thought of beliefs that I should not have had when I attacked someone online.
16. I had good reasons for cyberbullying others.
17. I experience intense guilt that someone got hurt due to my actions.
18. Indicate how frequently you experience guilt that relates to cyberbullying others.
19. I blame myself for causing damaging to others through my acts of cyberbullying them.

20. What happened with because my action (cyberbullying) causes a lot of pain and suffering.
21. I should have had certain feelings and awareness that I did not have.
22. Indicate the intensity or severity of guilt that you typically experience about cyberbullying others.
23. I blame myself for something I did.
24. When I am reminded of cyberbullying others, I have strong physical reactions such as sweating, tense muscles, dry mouth, etc.
25. Overall, how guilty do you feal about cyberbullying others?
26. I hold myself responsible for what happened.
27. What I did was not justified in any way.
28. I violated personal standards of right and wrong.
29. I did something that I should not have done.
30. I should have done something (like controlling my actions, emotions, etc.) that I did not do.
31. What I did was unforgivable.
32. I did not do anything wrong.

7.4 Negative Effects Questionnaire

Original version by Rozental et al. (2019)

(Modified to our requirements)

Indicate your response as you feel regarding something you did the past and how it has affected you. Rate the items from 1 to 5, where 1 – Not at all, 2 – Slightly, 3 – Moderately, 4 – Very, 5 – Extremely.

1. I had more problems with my sleep when I remember that cyberbullying others harmed them.
2. I felt like I was under more stress after thinking about my actions.
3. I experienced more anxiety.
4. I felt more worried.
5. I experienced more hopelessness.
6. I experienced more unpleasant feelings.
7. Negative feeling arising from hurting others got worse.
8. Unpleasant memories resurfaced.

9. I became afraid that other people would find out about my acts of cyberbullying others.
10. I got thoughts that it would be better if I did not exist anymore and that I should take my own life.
11. I started feeling ashamed in front of other people because I was cyberbullying people.
12. I stopped that I could ever stop cyberbullying.
13. I started thinking that cyberbullying others will negatively affect me (harm me).
14. I think that I have developed a bully inside me.
15. I did not always feel that cyberbullying will have negative repercussions on me.
16. I did not always feel that society and my known people will accept me.
17. I did not have confidence in facing people.
18. I felt that cyberbullying others will not affect me.
19. I felt that my expectation of society accepting would not be fulfilled.
20. I felt that people were avoiding talking to me.

7.5 Patient Health Questionnaire 9

Original version by Kroenke et al. (2001)

Over the last few weeks, how often have you been bothered by any of the following problems? (Rate between 0 to 3, where 0 – Not at all, 1 – Several Days, 2 – More than half the days, 3 – Nearly Everyday)

1. Little interest or pleasure in doing things.
2. Feeling down, depressed, or hopeless.
3. Trouble falling or staying asleep, or sleeping too much.
4. Feeling tired or having little energy.
5. Poor appetite or overeating.
6. Feeling bad about yourself or that you are a failure or have let yourself or your family down.
7. Trouble concentrating on things, such as reading the newspaper or watching television.
8. Moving or speaking so slowly that other people could have noticed? Or the opposite- being so fidgety or restless you that have been moving around a lot more than usual.

9. Thoughts that you would be better off dead or of hurting yourself in some way.

7.6 Weight-Based Teasing Scale

Original version by Eisenberg et al. (2003)

How often do you feel? (Rate on a scale of 0 to 4, where 0 – Never, 1 – Less than once a year, 2 – A few times a year, 3 – A few times a month, 4 – At least once a week)

1. You are treated with less respect than other people.
2. People act as if they're better than you.
3. You are called names or insulted.
4. You are teased about your appearance.
5. You are teased about your weight

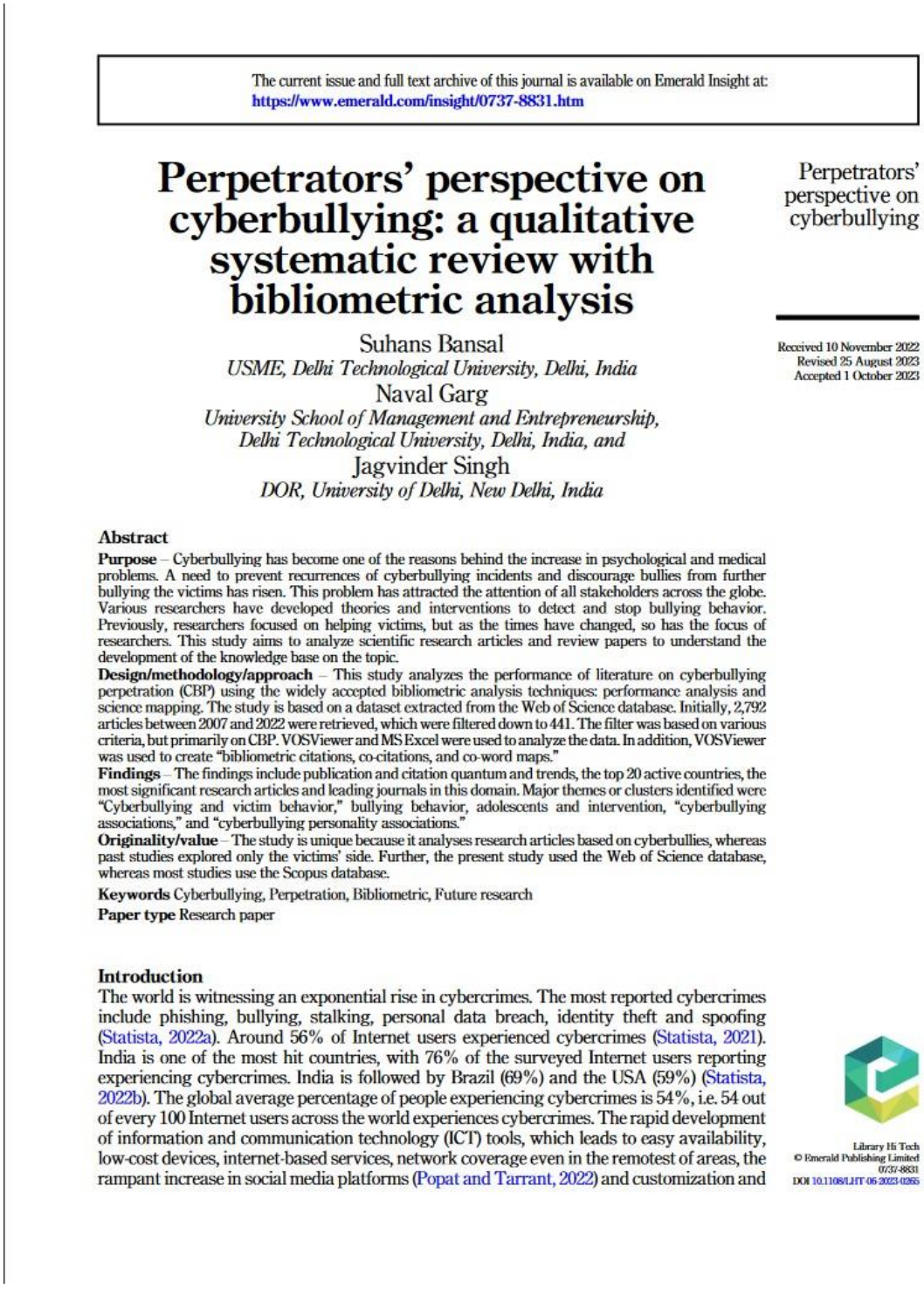
7.7 Gratitude Questionnaire 6

Original version by McCullough et al. (2002)

Please provide your honest feelings about the statements. (Rate between 1 to 7, where 1 – Strongly Disagree, 2 – Disagree, 3 – Slightly Disagree, 4 – Neutral, 5 – Slightly Agree, 6 – Agree, 7 Strongly Agree)

1. I have so much in life to be thankful for.
2. If I had to list everything that I felt grateful for, it would be a very long list.
3. When I look at the world, I don't see much to be grateful for.
4. I am grateful to a wide variety of people.
5. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.
6. Long amounts of time can go by before I feel grateful to something or someone.

LIST OF PUBLICATIONS AND THEIR PROOFS



Perpetrators' perspective on cyberbullying: a qualitative systematic review with bibliometric analysis

Suhans Bansal
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University School of Management and Entrepreneurship, Delhi Technological University, Delhi, India, and
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Received 10 November 2022
Revised 25 August 2023
Accepted 1 October 2023

Abstract

Purpose – Cyberbullying has become one of the reasons behind the increase in psychological and medical problems. A need to prevent recurrences of cyberbullying incidents and discourage bullies from further bullying the victims has risen. This problem has attracted the attention of all stakeholders across the globe. Various researchers have developed theories and interventions to detect and stop bullying behavior. Previously, researchers focused on helping victims, but as the times have changed, so has the focus of researchers. This study aims to analyze scientific research articles and review papers to understand the development of the knowledge base on the topic.

Design/methodology/approach – This study analyzes the performance of literature on cyberbullying perpetration (CBP) using the widely accepted bibliometric analysis techniques: performance analysis and science mapping. The study is based on a dataset extracted from the Web of Science database. Initially, 2,792 articles between 2007 and 2022 were retrieved, which were filtered down to 441. The filter was based on various criteria, but primarily on CBP. VOSViewer and MS Excel were used to analyze the data. In addition, VOSViewer was used to create "bibliometric citations, co-citations, and co-word maps."

Findings – The findings include publication and citation quantum and trends, the top 20 active countries, the most significant research articles and leading journals in this domain. Major themes or clusters identified were "Cyberbullying and victim behavior," bullying behavior, adolescents and intervention, "cyberbullying associations," and "cyberbullying personality associations."

Originality/value – The study is unique because it analyses research articles based on cyberbullies, whereas past studies explored only the victims' side. Further, the present study used the Web of Science database, whereas most studies use the Scopus database.

Keywords Cyberbullying, Perpetration, Bibliometric, Future research
Paper type Research paper

Introduction

The world is witnessing an exponential rise in cybercrimes. The most reported cybercrimes include phishing, bullying, stalking, personal data breach, identity theft and spoofing (Statista, 2022a). Around 56% of Internet users experienced cybercrimes (Statista, 2021). India is one of the most hit countries, with 76% of the surveyed Internet users reporting experiencing cybercrimes. India is followed by Brazil (69%) and the USA (59%) (Statista, 2022b). The global average percentage of people experiencing cybercrimes is 54%, i.e. 54 out of every 100 Internet users across the world experiences cybercrimes. The rapid development of information and communication technology (ICT) tools, which leads to easy availability, low-cost devices, internet-based services, network coverage even in the remotest of areas, the rampant increase in social media platforms (Popat and Tarrant, 2022) and customization and

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Figure 20: Proof of Publication for Objective 1

frontiers | Frontiers in Psychology

TYPE Original Research
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DOI 10.3389/fpsyg.2023.1279234

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Front. Psychol. 14:1279234.
doi: 10.3389/fpsyg.2023.1279234

Cyberbullying and mental health: past, present and future

Suhans Bansal[1], Naval Garg[1]*, Jagvinder Singh[2] and Freda Van Der Walt[3]

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Purpose: Cyberbullying has attracted the world's attention, and therefore researchers across the world have contributed to the literature on cyberbullying and mental health. Amongst others, they have conducted bibliometric analyses and associated cyberbullying with various factors but have not determined the impact of cyberbullying on people's mental health. Hence, the aim of this study was to conduct bibliometric analyses of cyberbullying and mental health to analyze the academic performance of the literature on impact of cyberbullying on people's mental health; and to propose future research avenues to make further contributions to this field of study.

Methodology: Spreadsheets and VOSviewer were used to conduct the bibliometric analysis. The data were extracted from the SCOPUS database which provided an extensive collection of data and journals.

Findings: Having explored the top active countries publishing on the impact of cyberbullying on people's mental health and the academic performance of such research articles by means of a qualitative bibliometric analysis, the results revealed that this research topic is still to be researched extensively. The study also suggests countries/regions where this research topic can be explored further, as well as possible journals for publication of research results, and further studies to be conducted.

Discussion: The literature presents a fragmented view on the impact of cyberbullying on people's mental health. Studies on cyberbullying are limited for the reasons as discussed in this article. Hence, bibliometric analysis was conducted to analyze the performance of academic literature on the impact of cyberbullying on people's mental health; the academic performance of research articles on cyberbullying and mental health; and to make proposals toward a future research agenda.

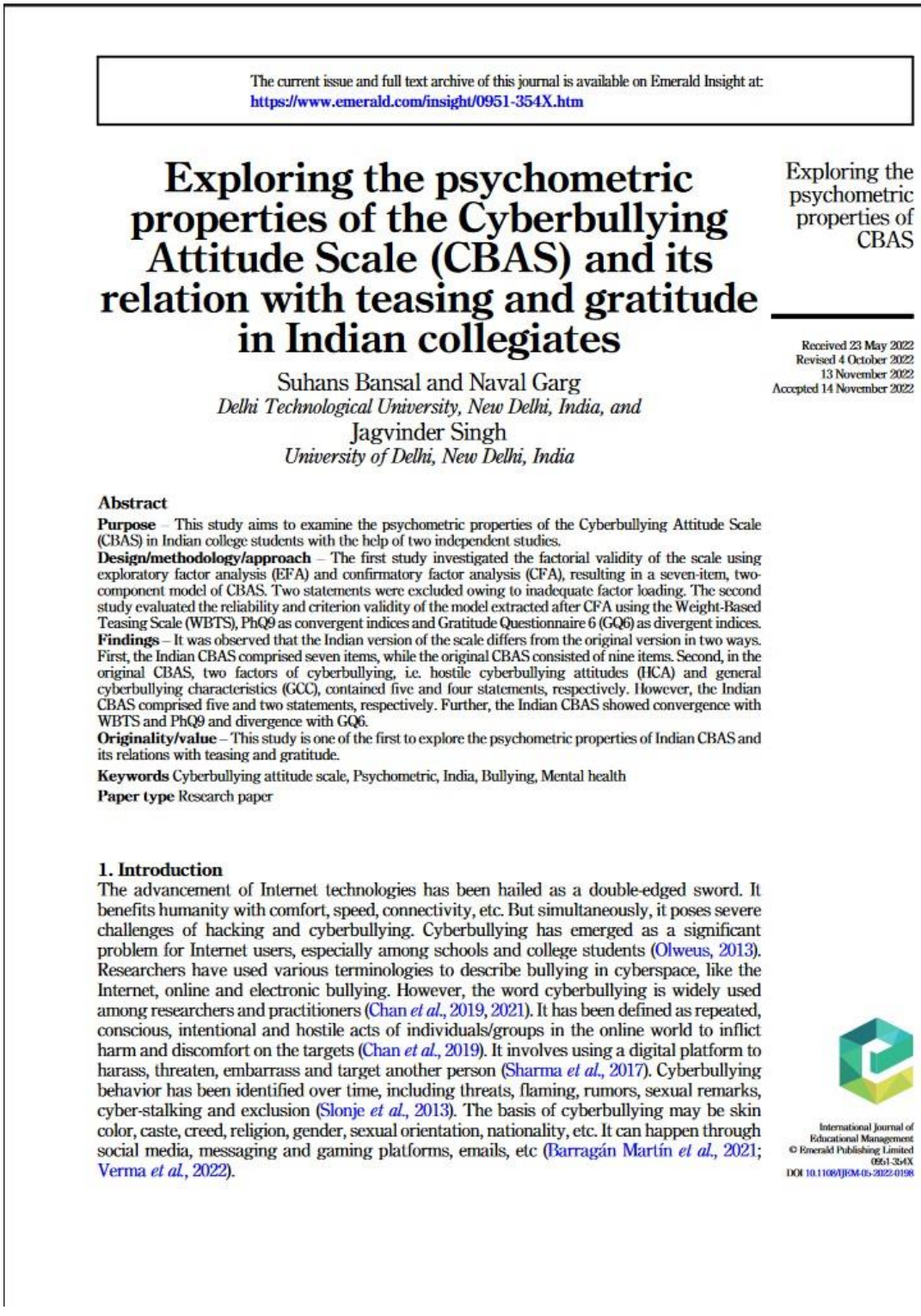
KEYWORDS

cyberbullying, mental health, bibliometric analysis, cyber perpetration, cyber victimization

Introduction

Mental health has garnered significant attention from the research community, academics, and policymakers across the globe (Somé et al., 2022), and has emerged as a major contributor to the global health crisis (Wang et al., 2021). The World Health Organization (WHO) defines mental health as "a state of wellbeing in which the individual realizes his or her abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (World Health Organization, 2004). According to the definition, a mentally healthy person effectively manages stress, work to his/her optimal output levels, and positively contribute to his/her community. The definition also suggests that the absence of, or an impaired state of mental wellbeing may hinder individuals from realizing their full potential, hamper their

Figure 21: Proof of Publication for Objective 2



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Exploring the psychometric properties of the Cyberbullying Attitude Scale (CBAS) and its relation with teasing and gratitude in Indian collegiates

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13 November 2022
Accepted 14 November 2022

Suhans Bansal and Naval Garg
Delhi Technological University, New Delhi, India, and
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Abstract

Purpose – This study aims to examine the psychometric properties of the Cyberbullying Attitude Scale (CBAS) in Indian college students with the help of two independent studies.

Design/methodology/approach – The first study investigated the factorial validity of the scale using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), resulting in a seven-item, two-component model of CBAS. Two statements were excluded owing to inadequate factor loading. The second study evaluated the reliability and criterion validity of the model extracted after CFA using the Weight-Based Teasing Scale (WBTS), PhQ9 as convergent indices and Gratitude Questionnaire 6 (GQ6) as divergent indices.

Findings – It was observed that the Indian version of the scale differs from the original version in two ways. First, the Indian CBAS comprised seven items, while the original CBAS consisted of nine items. Second, in the original CBAS, two factors of cyberbullying, i.e. hostile cyberbullying attitudes (HCA) and general cyberbullying characteristics (GCC), contained five and four statements, respectively. However, the Indian CBAS comprised five and two statements, respectively. Further, the Indian CBAS showed convergence with WBTS and PhQ9 and divergence with GQ6.

Originality/value – This study is one of the first to explore the psychometric properties of Indian CBAS and its relations with teasing and gratitude.

Keywords Cyberbullying attitude scale, Psychometric, India, Bullying, Mental health

Paper type Research paper

1. Introduction

The advancement of Internet technologies has been hailed as a double-edged sword. It benefits humanity with comfort, speed, connectivity, etc. But simultaneously, it poses severe challenges of hacking and cyberbullying. Cyberbullying has emerged as a significant problem for Internet users, especially among schools and college students (Olweus, 2013). Researchers have used various terminologies to describe bullying in cyberspace, like the Internet, online and electronic bullying. However, the word cyberbullying is widely used among researchers and practitioners (Chan *et al.*, 2019, 2021). It has been defined as repeated, conscious, intentional and hostile acts of individuals/groups in the online world to inflict harm and discomfort on the targets (Chan *et al.*, 2019). It involves using a digital platform to harass, threaten, embarrass and target another person (Sharma *et al.*, 2017). Cyberbullying behavior has been identified over time, including threats, flaming, rumors, sexual remarks, cyber-stalking and exclusion (Slonje *et al.*, 2013). The basis of cyberbullying may be skin color, caste, creed, religion, gender, sexual orientation, nationality, etc. It can happen through social media, messaging and gaming platforms, emails, etc (Barragán Martín *et al.*, 2021; Verma *et al.*, 2022).

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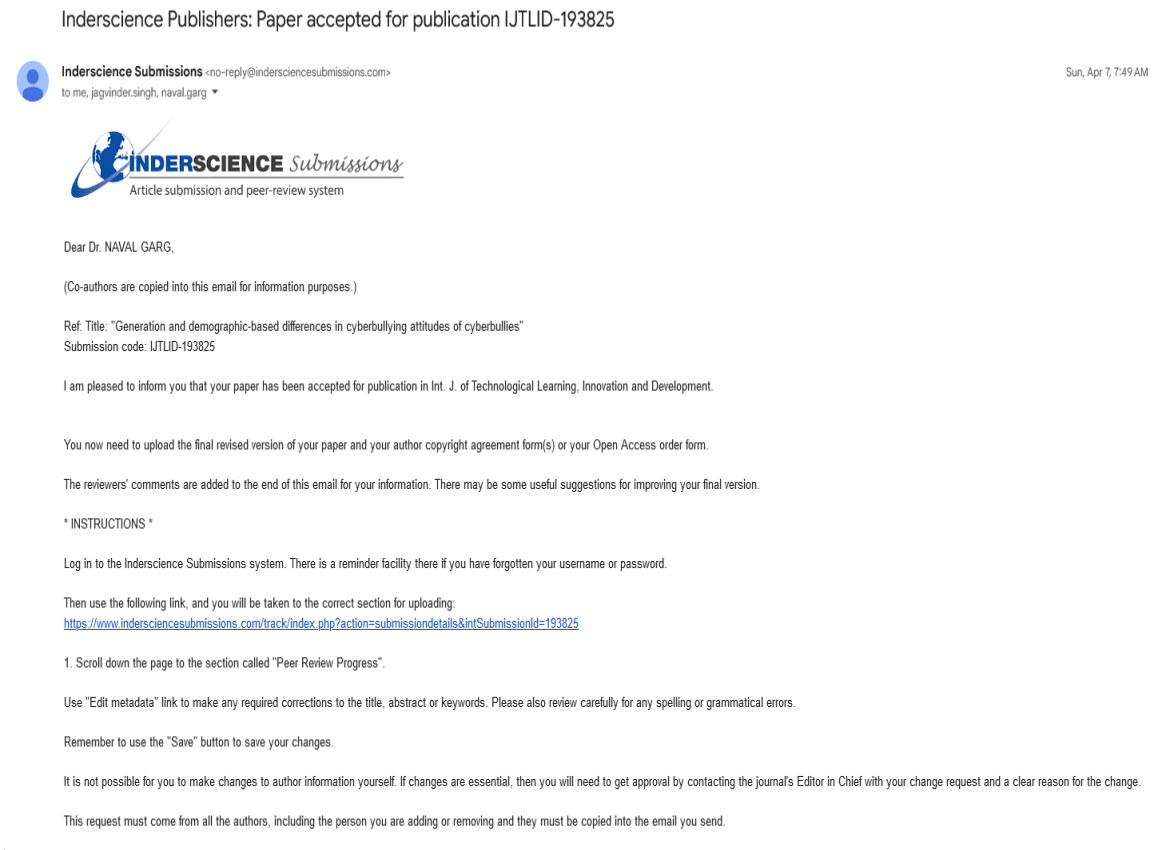
Figure 22: Proof of Publication for Objective 3



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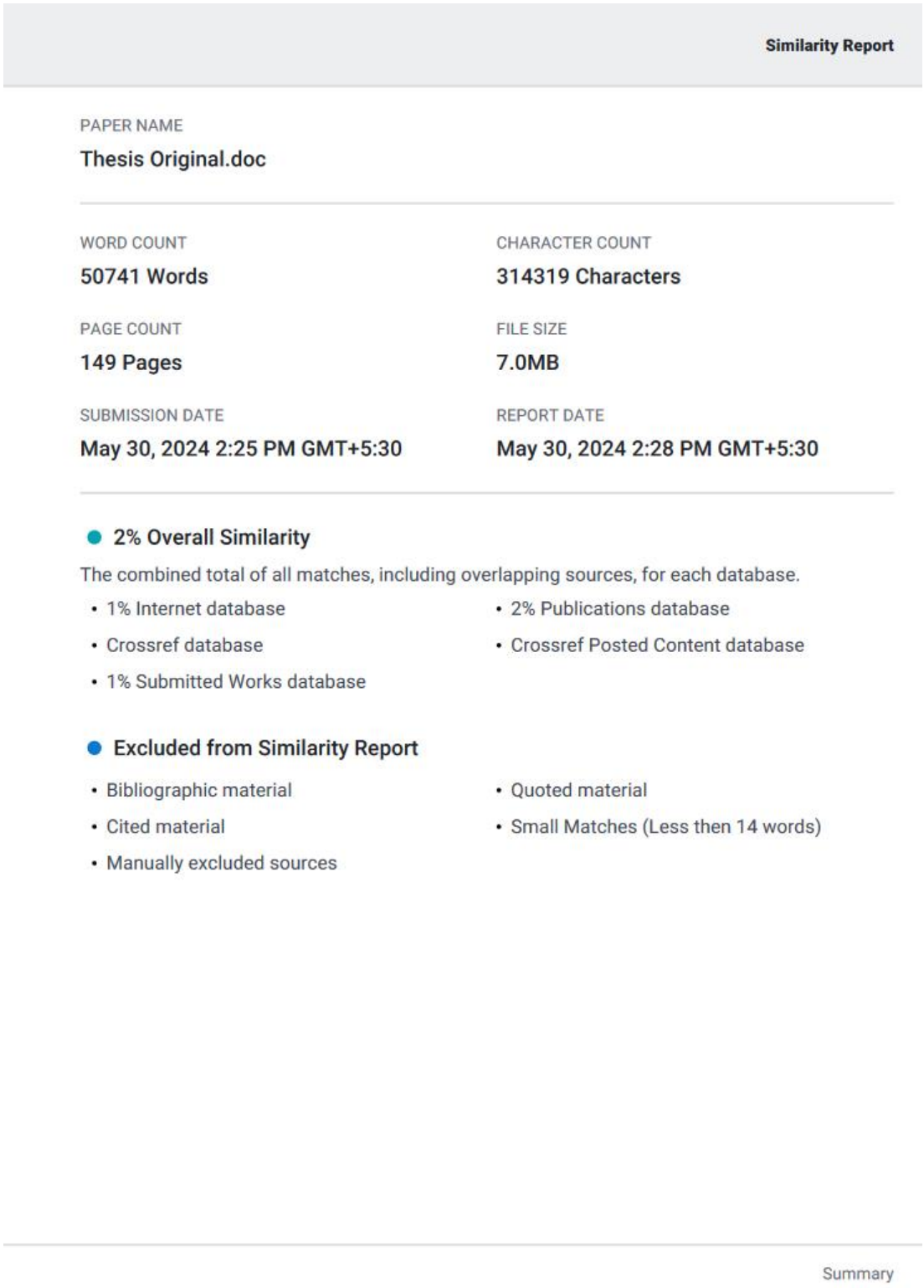

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Summary

Figure 24: Plagiarism Report

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EDUCATIONAL QUALIFICATION

Qualification	Year	College/University	Percentage
PhD	2021-24	USME, DTU (former Delhi College of Engineering)	**Submitted**
PhD Course Work	2021-24	USME, DTU (former Delhi College of Engineering)	92.00%
M.B.A	2019-21	USME, DTU (former Delhi College of Engineering)	86.80%
B.B.A	2015-18	SoB, UPES, Dehradun	81.10%
HSC	2014-15	Bal Bharati Public School, Pitampura, Delhi	80.00%
SSC	2012-13	Bal Bharati Public School, Pitampura, Delhi	81.70%

PHD RESEARCH

Title: Cyberbullying: Assessing the Other Side

Key Points:

- One of the few studies that focuses on workplace setting, i.e., academia and industry.
- Among the few that solely focusses on cyberbullies.
- Empirically defines a mechanism that explains the development of depressive symptoms among cyberbullies in academia and workplace settings.
- Uses longitudinal multi-study design to answer the primary research question.
- Uses a mix of qualitative and quantitative methods to answer secondary research questions.

TEACHING EXPERIENCE

Aug 2024 – Present School of Business, UPES Assistant Professor (Senior Scale)

- Taught Organizational Behavior, using interactive group discussions, case sessions and role plays, achieving a 20% increase in student engagement and understanding. (BBA Sem I, AY 2024-25)
- Developed course on Energy Sector Infrastructure and Functioning, incorporating industry reports and government data, which improved students' knowledge by 25%. (BBA Sem I, AY 2024-25)
- Designed curriculum for Petro Retail Management, asked students to create their own lubricant brand and set up a petrol pump as a part of role plays, resulting in a marked improvement in student project outcomes. (BBA Sem II, AY 2024-25)

During PhD

Jan 2022 – June 2024 Dept of USME, DTU (Former DCE) Teaching cum Research Fellow

Post Graduation Level (MBA)

- Taught Performance Management using case, role plays and creating balanced score card, focusing on performance appraisal systems, with 90% of students showing improvement in project assessments. (Sem IV (HR Specialization), AY 2023-24)
- Delivered Business Environment lectures for Sem II, integrating real-world business environment assessment models, cases and interactive group discussions, leading to 85% student satisfaction in course feedback. (Sem II, AY 2022-23)

Graduation Level (BBA)

- Taught Advancing Research in Business Development using analyses of business current affairs and how can they impact national economy, achieving a 10% increase in student engagement and understanding. (Sem I, AY 2023-24)
- Delivered course content on Principal of Management, utilizing case studies and interactive discussions, resulting in improved student engagement. (Sem I, AY 2023-24)
- Facilitated Computer labs, helping students develop a sound understanding of Microsoft Office tools, resulting in 71% of students improving their technical skills. (Sem I, AY 2023-24)
- Taught Performance and Compensation Management using case and role plays, with 80% of students showing improvement in assessments. (Sem V (HR specialisation), AY 2022-23)
- Facilitated practical labs in E-Commerce, helping students develop and implement online business strategies, resulting in 80% of students improving their technical skills. (Sem II, AY 2021-23)
- Delivered lectures on Human Resource Management, incorporating cases and contemporary business news, leading to a significant improvement in understanding among students. (Sem IV, AY 2021-22)

JOURNAL PUBLICATIONS

Published

Bansal, S., & Garg, N (2024). Quitting silently: A longitudinal research on the impact of workplace conflict and nonviolent work behavior. Conflict Resolution Quarterly, In press. https://doi.org/10.1002/crq.21444 (ABDC – B, ESCI, IF – 1.0, SCOPUS, Cite Score – 1.1)

Bansal, S., Garg, N., Singh, J., & Van Der Walt, F. (2024). Cyberbullying and mental health: Past, present and future. Frontiers in Psychology, 14, 1–19. https://doi.org/10.3389/fpsyg.2023.1279234 (SSCI, SCIE, IF – 2.6, SCOPUS, Cite Score – 5.6)

Bansal, S., Garg, N., & Singh, J. (2024). Weight-based teasing and depressive symptoms among Indian college students: exploring the moderating effect of gratitude. Kybernetes, 53(6), 2194–2214. https://doi.org/10.1108/k-10-2022-1486 (ABS - 1, SCI, IF – 2.5, SCOPUS, Cite Score – 4.9)

Bansal, S., Garg, N., & Singh, J. (2023). Perpetrators' perspective on cyberbullying: A qualitative systematic review with bibliometric analysis. Library Hi Tech, ahead-of-print(ahead-of-print). https://doi.org/10.1108/LHT-06-2023-0265 (SSCI, IF – 3.4, SCOPUS, Cite Score – 8.3)

Bansal, S., Garg, N., & 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, 37(1), 225–239. https://doi.org/10.1108/ijem-05-2022-0198 (ABS – 1, ABDC – B, ESCI, IF – 2.4, SCOPUS, Cite Score – 4.3)

Accepted

Bansal, S., Garg, N., & Singh, J. (2024). Generation and demographic-based differences in cyberbullying attitudes of cyberbullies. International Journal of Technological Learning, Innovation and Development, In press. https://doi.org/10.1504/ijtlid.2025.10066437 (SCOPUS, Cite Score – 1.7)

Under Review

- When employees are bullied: A longitudinal multi-study exploration of its consequences in the Indian hospitality industry – International Journal of Conflict Management (ABS – 2, ABDC – A, SSCI, IF – 2.7, SCOPUS, Cite Score – 4.8)
- Do cyberbullies develop depressive symptoms? A longitudinal multi-study – International Journal of Technology Management (ABS – 2, ABDC – B, SSCI, IF – 1.7, SCOPUS, Cites Score – 2.4)
- Validation of Nonviolent Work Behavior Scale (NVWB) and its relation with Workplace Conflict – Conflict Resolution Quarterly (ABDC – B, ESCI, IF – 1.0, SCOPUS, Cite Score – 1.1)
- Generational and demographic variations in general cyberbullying characteristics and harmful cyberbullying attitudes - International Journal of Work Organization and Emotion (ABDC – B, SCOPUS, Cite Score – 0.9)
- Exploring Psychometric Properties of AHS and its relationship with depression and gratitude – Current Psychology (ABS – 1, SSCI, IF – 2.8, SCOPUS, Cite Score – 4.3)
- Developing and validating workplace weight-based teasing scale for Indian workplace, Kybernetes, (ABS - 1, SCI, IF – 2.5, SCOPUS, Cite Score – 4.9)

CONFERENCE PRESENTATIONS

- Cyberbullying and depressive symptoms: Mediating effects of weight-based teasing, Innovative Management Strategies in Business (ISMB, 2024), organised by Punjab Engineering College, Chandigarh, India
- Workplace conflict and ostracism: A moderating study using longitudinal research design, Innovative Management Strategies in Business (ISMB, 2024), organised by Punjab Engineering College, Chandigarh, India
- Does metaverse encourage cyberbullying? A longitudinal study, the 10th International Communication Management Conference (ICMC, 2024), organised by MICA, Ahmedabad, India and Northwestern Medill, USA
- Moderating workplace conflict and ostracism through nonviolent work behavior: A longitudinal research design, International HR Conference Cum Conclave, organised by IIM-Jammu
- Mediating Cyberbullying and Depressive Symptoms in Indian College Students via guilt and weight-based teasing, International Conference on Management, Entrepreneurship, and Economics, organised by USME, DTU
- Moderating cyberbullying and depression during COVID-19 in Indian college students via gratitude, the 12th Asian Society for Innovation and Policy International Conference, organized by the Asian Society for Innovation and Policy, South Korea, the Indian Institute of Science (IISc), and M S Ramaiah University of Applied Sciences (Bangalore).
- Investigating intergenerational differences in cyberbullying attitudes, Shaping the Future of Management Education for Sustainable Emerging Economies (International) Conference, organised by Arizona State University, USA and Department of Management Studies, Indian Institute of Technology, Roorkee (IIT-R), India
- Exploring the gratitude's moderating effect on relationship between teasing and depression in Indian college students, the 1st International Conference on Mathematical, Engineering and Management Sciences (1st ICMEMS), organised by The DQM Research Center, Prijevor, Serbia

AWARDS

- ***Best Paper Presentation Award (Expert Committee Recommended)*** – 12th Asian Society for Innovation and Policy International Conference organised by Asian Society for Innovation and Policy (South Korea), Indian Institute of Science (IISc) and M S Ramaiah University of Applied Sciences (Bangalore), 2022

PROJECTS/CONSULTANCY

- Project Consultant, Report on the Business Blasters Program, *State Council of Educational Research and Training (SCERT), Govt. of NCT of Delhi*
- Project Consultant, A Longitudinal Report on the Entrepreneurship Mindset Curriculum (AY 2023-24), *State Council of Educational Research and Training (SCERT), Govt. of NCT of Delhi*

PROFESSIONAL QUALIFICATION/LICENSE/CERTIFICATIONS

- Certification, Data Analytics, by IIM Visakhapatnam, 2022

- Specialization (Online), Human Resource Management: HR for People Managers, University of Minnesota, 2021

SUBJECTS OF INTEREST

- Human Resource Management
- Organizational Behaviour
- Business Environment

Course Development

- Currently developing a course on Workplace Violence and Bullying: Designing an academic course that addresses the critical need to tackle workplace violence and bullying by expanding research and practical applications focused on the mental health impact of workplace violence and bullying. The course aims to tackle contemporary organizational problems such as quiet quitting intentions and high employee attrition rates. This course aims to equip HR professionals with tools to prevent and manage these challenges effectively and build healthier organizational environments, thereby contributing to Government of India's vision to create a harmonious workplace.

RESEARCH AREAS OF INTEREST

- Organizational Psychology
- Workplace Violence
- Nonviolent Work Behaviour
- Cyberbullying
- Quiet Quitting
- Psychometric Properties Analysis
- Bibliometric Analysis

ADMINISTRATIVE RESPONSIBILITIES IN ACADEMIC INSTITUTIONS

Audits – NAAC, IQAC, Annual Report

- I assisted in Critical Areas of Document Collation of NAAC Audit at the University School of Management and Entrepreneurship (USME), Delhi Technological University (Former, Delhi College of Engineering) for AYs - 2022 and 2023.
- I assisted in IQAC Audit at the University School of Management and Entrepreneurship (USME), Delhi Technological University (Former Delhi College of Engineering) for AYs - 2022 and 2023.
- I assisted and coordinated during the Departmental – Level Annual Report preparation for AYs - 2022 and 2023.

Admission Council (Member)

- PhD, 2023-24

- MBA (General), 2022-23 and 2023-24
- MBA (IEV), 2022-23 and 2023-24
- MBA (BA), 2023-24
- BBA, 2022-23 and 2023-24
- BA (Eco), 2022-23 and 2023-24

Research Conferences and Conclave Organizer

- I was among the research scholar coordinators (organisers) of the 1st International Conference on Management, Entrepreneurship, and Economics, held at the University School of Management and Entrepreneurship, Delhi Technological University (Former Delhi College of Engineering), on September 15 – 16, 2023.
- Served as a member of the Start-up Conclave (Campus to Startup) organising committee, organised by University School Management and Entrepreneurship, Delhi Technological University (Former Delhi College of Engineering), held on January 16, 2023.
- Served as the member of organizing committee of 1st Annual Conclave'22 on Family Business & Entrepreneurship held on September 14, 2022. University School Management and Entrepreneurship, Delhi Technological University (Former, Delhi College of Engineering) organised the conclave.

Industrial Visits

- Mentored 52 MBA students during the industrial visit to Hero Moto Corps in the AY 2022-23.

Viva Voce and Examination

- Mentored 18 students of MBA and BBA courses for their Major Research Project (Dissertation) during AYs 2022-23 and 2023-24.
- Mentored 12 students of MBA and BBA courses for their Summer Internship Report during AY 2023-24.
- Served as the Paper Setter, Examiner, and Invigilator of Exams conducted at the University School of Management and Entrepreneurship (USME), Delhi Technological University (2021-24).

PEER REVIEW ASSIGNMENTS

- Scientific Reports – Nature – SCI and SCOPUS Indexing
- Kybernetes – Emerald Publishing – SCI and SCOPUS Indexing
- International Journal of Manpower – Emerald Publishing – SCI and SCOPUS Indexing, ABDC A
- International Journal of Mental Health and Addiction – Springer – SSCI, SCIE and SCOPUS Indexing
- Online Information Review - Emerald Publishing – SSCI and SCOPUS Indexing, ABDC B
- Quality of Life Research – Springer – SSCI, SCIE, and SCOPUS Indexing, ABDC A

- Current Psychology – SSCI and SCOPUS Indexing
- International Journal of Religion and Health – SSCI and SCOPUS Indexing
- BMC Infectious Diseases – BMC – SCIE and SCOPUS Indexing
- Journal of Medical Internet Research – SCIE and SCOPUS

PROFESSIONAL REFERENCES

- Dr Naval Garg, Assistant Professor, University School of Management and Entrepreneurship, Delhi Technological University (former, Delhi College of Engineering, DCE), New Delhi, India. Email Address: naval.garg@dtu.ac.in Contact Number: +91 9930912054
- Dr Jagvinder Singh, Assistant Professor, Department of Operational Research, University of Delhi, New Delhi, India. Email Address: jagvinder.singh@gmail.com Contact Number: +91 9810780984
- Prof Amit Mookerjee, HoD and Director, University School of Management and Entrepreneurship, Delhi Technological University (former, Delhi College of Engineering, DCE), New Delhi, India. Email Address: amookerjee@dtu.ac.in Contact Number: +91 9811373970
- Dr Atul Rawat, Cluster Head (Associate Professor), School of Business, University of Petroleum and Energy Studies, Dehradun, Uttarakhand, India. Email Address: a.rawat@ddn.upes.ac.in Contact Number: +91 9971744224