

Bias-Based Cyberaggression Related To Origin, Religion, Sexual Orientation, Gender, and Weight: Systematic Review of Young People's Experiences, Risk and Protective Factors, and the Consequences

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Abstract

Bias-based cyberaggression—hateful and bias-based content and interactions via information and communication technologies—is a frequent experience for young internet users that can result in detrimental consequences for both individuals and society. Ample research has focused on the factors related to involvement in bias-based cyberaggression. This study systematically reviews the research published in the past decade about the investigations into exposure, vicarious and direct victimization, and aggression among young people (up to age 30). We aimed to provide a complex summarization of the research findings about the risk and protective factors and the consequences of experiences with bias-based cyberaggression—specifically the diverse manifestations of bias-based cyberaggression targeted toward ethnicity, race, nationality, religion, sexual orientation, gender, weight, and disability. Three academic databases (EBSCO, Scopus, and WoS) were searched and 41 articles were included in the review. The results show a dominant research focus on bias-based cyberaggression victimization and on the bias-based cyberaggression that targets ethnicity, race, nationality, and religion, leaving a gap in the knowledge about the different types of targeted group categories and bias-based cyberaggression perpetration. The identified risk factors for bias-based cyberaggression involvement included being a minority, low psychological well-being, other victimization experiences, higher internet use, and risky internet use. An overlap was found for bias-based cyberaggression involvement with other offline and online victimization experiences. This review showed limited knowledge about protective factors, namely the social-level and contextual factors. The identified factors, as well as the gaps in the knowledge, are discussed in relation to research implications and practice and policy implications.

Keywords

bullying, hate crimes, internet and abuse, youth violence

Introduction

New information and communication technologies (i.e., ICT) have opened new opportunities for interaction and expression, but they also facilitate bias-based aggression and hate. Bias-based cyberaggression is an umbrella term that includes the different manifestations of biased behaviors that are expressed via ICT, including bias-based cyberbullying, extremist content, cyberhate, and online hate speech. Specifically, it can be any type of behavior or expression (e.g., textual, audiovisual) that attacks individuals or groups of people due to their group characteristics or group identities (Henry, 2013; Kansok-Dusche et al., 2023; Keipi et al., 2017), such as ethnicity, nationality, religion, sexuality, gender, or disability. It is often connected to negative intergroup bias in the form of stereotypes or prejudice (e.g., Bedrosova

et al., 2023; Mondal et al., 2017; Sánchez-Sánchez et al., 2024; Soral et al., 2018). These defining features differentiate bias-based cyberaggression from other forms of malicious online behavior or cyberaggression, which are not bias-based. As such, bias-based cyberaggression has manifestations that are classified as hate crimes or hate speech, and are more easily identifiable and prosecuted (e.g., content targets protected characteristics, such as race or sexuality),

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but it also entails incidents that might be more inconspicuous and not legally prosecuted but still hateful and motivated by intergroup bias (e.g., online fat-shaming), thus extending beyond the legal definitions of hate crime.

A recent scientometric analysis by Waqas et al. (2019) showed a rapid increase in bias-based cyberaggression research during the last decade, covering a wide range of types of cyberaggression and toxicity (e.g., online hate speech, bias-based cyberbullying, and harassment). On the one hand, there are reviews that focus on online hate speech (Castaño-Pulgarín et al., 2021; Izquierdo Montero et al., 2022; Kansok-Dusche, 2023; Nazmine et al., 2021) or online racism, specifically (Bliuc et al., 2018; Keum & Miller, 2018; Matamoros-Fernández & Farkas, 2021). On the other hand, there is systematic evidence that combines cyberhate and cyberbullying (Rudnicki et al., 2023). Further, it has been shown that cyberhate can overlap with other forms of cyberaggression, such as cyberbullying (e.g., Bedrosova, Machackova et al., 2022; Kansok-Dusche et al., 2023). The latter research highlights the importance of focusing on bias-based cyberaggression more broadly in order to include bias-based cyberbullying, cyberhate, and other forms of cyberaggression. There is still a lack of comprehensive systematic evidence for the various manifestations of intergroup bias in cyberaggression. By exploring the full spectrum of bias-based cyberaggression manifestations, we aim to identify the factors associated with different forms of bias, extending beyond a single type of behavior. This study will further elaborate upon the recent reviews of existing intervention strategies against bias-based cyberaggression (Blaya, 2019; Windisch et al., 2022) and inform the future implementation of interventions and future research about bias-based cyberaggression.

Bias-based cyberaggression can have a detrimental impact on both individuals (e.g., Isik et al., 2018; Keipi et al., 2018; Näsi et al., 2015; Tynes et al., 2020) and society (e.g., Foxman & Wolf, 2013). It can even lead to a circle of violence between exposed bystanders and perpetrators, as was shown in a longitudinal study about homophobic cyberbullying (Wright & Wachs, 2021). Further, a link with offline violence has been found (Pauwels & Schils, 2016). Research also shows that bias-based cyberaggression in the form of cyberhate is prevalent on social media and in online discussions (e.g., Costello et al., 2016; Hawdon et al., 2017; Oksanen et al., 2014; Reichelmann et al., 2021; Weimann & Masri, 2020); it is entering everyday online communication platforms; and it is reaching broad audiences, including young people and children (e.g., Kardefelt Winther et al., 2023; Machackova et al., 2020; Wachs et al., 2022). The aim of our study is to review the existing broad evidence for young people's bias-based cyberaggression experiences. We concentrate on studies of the young population, which we define as people up to the age of 30 because we assume bias-based cyberaggression might be especially harmful to young people. Firstly, they are active users of social media and

platforms where bias-based cyberaggression is increasingly spread (e.g., Costello et al., 2016; Hawdon et al., 2017; Oksanen et al., 2014; Reichelmann et al., 2021; Weimann & Masri, 2020). Secondly, they are at a developmental stage of identity formation and the cognitive development of their intergroup attitudes (Cortese, 2005), which might be affected by the biased messages of bias-based cyberaggression. Thirdly, young people are specifically targeted by extremist and hateful group recruitment efforts because they represent the potential future for the group sustainability (e.g., Douglas, 2010; Lee & Leets, 2002; McNamee et al., 2010). Additionally, given that many studies that focus on young internet users include children, adolescents, and young adults (e.g., Cano et al., 2021; Celuch et al., 2022), we decided to focus on the experiences of young people up to the age of 30.

As bias-based cyberaggression experiences have different forms, our investigation will be structured around three core roles that young people can take on: exposure, victimization, and aggression. Exposure refers to encountering biased and hateful content online. This can happen both intentionally (i.e., purposeful searching for the content) or unintentionally (i.e., accidentally encountering the content). Individuals can be exposed to bias-based content, which is not targeted at them, and they can also be bystanders or witnesses. On the other hand, victimization is where the individual is targeted either directly (i.e., a direct attack on their group or due to their group identity) or vicariously (i.e., exposure to others' victimization or second-hand victimization). And, aggression refers to producing, sharing, sending, or posting hateful material or messages online. A systematic review by Kansok-Dusche et al. (2023), which summarized the prevalence of bias-based cyberaggression in the form of cyberhate that targeted various group categories among adolescents, shows that exposure is the most prevalent experience; depending on the country, up to 68.5% (Spain) of adolescents were exposed to it. The victimization rates ranged from 7% (United States) to 23.4% (Finland). Aggression was reported by up to 11.3% (Germany) adolescents in Europe. Each of these experiences presents a different type of online risk, which is connected to distinct associations and can concern particular groups of vulnerable young people. Thus, it is important to review the existing research and to identify the factors associated with these distinct cyberhate experiences.

We will focus on bias-based cyberaggression that attacks the following group characteristics and identities: origin (i.e., ethnicity, nationality, and migration background), religion, gender, sexuality, weight, and disability. These were identified as commonly experienced by young people (Balica, 2017; Williams, 2019). To our knowledge, there has not been a systematic review of the factors associated with the different targeted categories, on the one hand, and the different types of involvement, on the other hand. Understanding the distinct experiences of vulnerable groups is necessary for the formulation of specific practices and future research recommendations. Specifically, a complex picture of the factors

that predict bias-based cyberaggression involvement, as well as the outcomes of such involvement, is still needed. Our goal is to fill this research gap by systematically reviewing the existing research on bias-based cyberaggression among young internet users from the past decade (2010—mid-2022). We will review both the cross-sectional studies that examine bias-based cyberaggression associations and the longitudinal studies that examine its predictors and outcomes in order to synthesize the existing knowledge about (a) the risk and protective factors for young people's experiences with bias-based cyberaggression and (b) the outcomes bias-based cyberaggression can have. We aim to compare the results for different targeted categories (i.e., origin, religion, gender, sexuality, weight, disability) and the three types of involvement (i.e., exposure, direct and vicarious victimization, and aggression), and provide a systematic overview of empirically based evidence about the different experiences of bias-based cyberaggression that young people can have.

Methodology

This systematic review was conducted following Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009).

Search Strategy

Three relevant databases—EBSCO, Scopus, and Web of Science—were searched for articles, books, and book chapters published from January 2010 to July 2020. Another search in July 2022 covered articles from July 2020 to July 2022. In the EBSCO, the following databases were selected—Academic Search Complete, Academic Search Ultimate, eBook Academic Collection (EBSCOhost), eBook Collection (EBSCOhost), APA PsycArticles, APA PsycInfo, and SocINDEX with Full Text.

A set of four search commands was created for each database to reflect the search functions. Each set of commands included a search string for different types of bias-based cyberaggression motivations and related keywords. Specifically, these were (a) origin (i.e., race, ethnicity, nationality, or migration), (b) religion, (c) gender, sexual orientation, or sexual identity, and (d) disability or weight. In addition, each search string contained a set of keywords about the online or cyber environment; about the aggressive, discriminatory, or hateful nature of the incident; about the different roles in the incidents (i.e., exposure, victimization, and aggression); and about the target group of young people. The full search commands are available in Supplemental material Appendix A.

Eligibility Criteria

Eligibility criteria were as follows: (a) Studies published in the English language from 2010 to mid-2022. (b) A sample

of young people up to the age of 30. Studies that included older participants but did not differentiate between age groups in their results were excluded. (c) Empirical studies, systematic reviews, and meta-analyses. Theoretical studies, essays, and non-systematic reviews were excluded. (d) Studies from the Euro-American context. We excluded studies from other geographical areas in order to decrease the cultural differences and increase the comparability of the identified findings. Our focus was on the individual level and not the cultural level. (e) Focus on cyberhate, online discrimination, or bias-based cyberbullying. The motivation behind aggression had to be specified in the measurement (e.g., cyberbullying victimization because of ethnicity or sexuality). Studies that did not specify the motivation behind aggression were excluded, even though their sample included specific groups of respondents (e.g., ethnic minorities). (f) Focus on one of the selected group categories (e.g., origin and sexuality). Studies that included only general hate measurements (i.e., targeting any group characteristic or identity) were excluded. (g) Focus on the online and cyber environment. Studies were excluded if they did not differentiate between online and offline experiences in their measurements and results. (h) Focus on the experience of exposure, victimization, or aggression. For example, analyses of media content or prevention programs were excluded.

Study Selection

There were four stages of study selection and two coders. For each new selection stage, studies were randomly re-ordered. There were two data collections (n_1 and n_2), and the search procedure was the same for both (see Figure 1).

Identification and Screening of Titles. From 24,731 records, 13,373 remained after the removal of duplicates. These were screened based on the title by two independent coders. One hundred studies were used for training purposes. Following the training, 10% of the studies were coded, and sufficient intercoder reliability was achieved. Each coder then evaluated one-half of the remaining studies, resulting in 2,990 selected articles.

Screening of Abstracts. Five studies were used for training purposes. Ten percent of the articles were coded together, and substantial intercoder reliability was achieved. Each coder then evaluated one-half of the remaining studies, resulting in 1,068 selected articles.

Screening of Full-Texts (Sample, Measurements). In the articles' main text, the coders evaluated information about the sample and the measurement of aggression, which were not present in the abstracts. Ten percent of the studies were randomly selected and coded together. Because none of the selected studies proceeded to the next stage, intercoder reliability was not computed, but all of the studies were discussed between

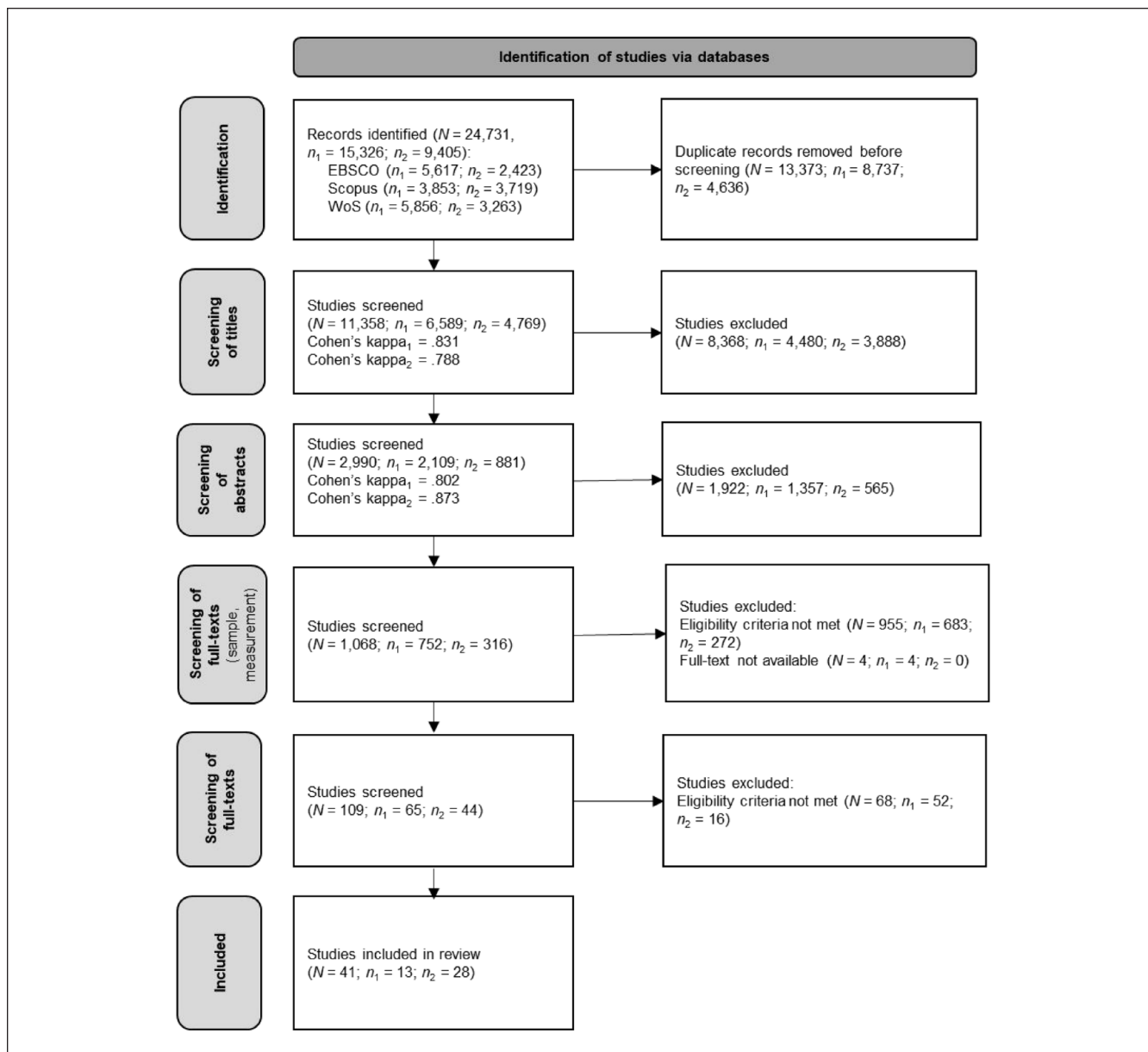


Figure 1. PRISMA flow diagram.

the coders and used for training purposes. Each coder subsequently evaluated one-half of the remaining studies. The authors of the studies with non-available full-texts were contacted. Full text was not obtained for four studies and those studies were excluded.

Screening of Full-Texts. The first author coded the full-texts of the eligible studies (n = 109). In the case of uncertainty, the coding was discussed with the co-authors and a decision was made based on a mutual agreement. Studies that only reported prevalences and did not report any associations were excluded at this stage. As a result, 41 studies were included in the systematic review. Quality Assessment

(Supplemental material Appendix B) was performed using C1–C7 sections of the Methodological Quality Questionnaire (Acosta et al., 2020).

Results

An overview of the design for the selected targeted categories in the 41 studies is displayed in Table 1. We grouped the categories of origin and religion and excluded the category of disability because none of the studies focused on this category separately. One study (Harriman et al., 2020) included disability in their measurement but it did not differentiate it when reporting the results from the other categories. For

Table 1. Design of Reviewed Studies and Addressed Targeted Categories.

Targeted category	Exposure (n)	Vicarious victimization (n)	Direct victimization (n)	Aggression (n)	Total (N)
Origin ^a	4 cross-sectional (n = 3); qualitative (n = 1)	6 cross-sectional (n = 3); longitudinal (n = 2); qualitative (n = 1)	17 cross-sectional (n = 10); longitudinal (n = 7)	4 cross-sectional (n = 3); mixed-methods (n = 1)	22 cross-sectional (n = 12); longitudinal (n = 7); qualitative (n = 2); mixed-methods (n = 1)
Sexual orientation or gender	2 longitudinal (n = 1); qualitative (n = 1)	0	5 cross-sectional (n = 3); qualitative (n = 2)	2 longitudinal (n = 1); qualitative (n = 1)	7 cross-sectional (n = 3); longitudinal (n = 1); qualitative (n = 3)
Weight	1 cross-sectional (n = 1)	0	2 cross-sectional (n = 2)	0	3 cross-sectional (n = 3)
Multiple ^b	4 cross-sectional (n = 3); qualitative (n = 1)	1 qualitative (n = 1)	7 cross-sectional (n = 5); qualitative (n = 2)	2 cross-sectional (n = 2)	9 cross-sectional (n = 6); qualitative (n = 3)
Total	11 cross-sectional (n = 7); longitudinal (n = 1); qualitative (n = 3)	7 cross-sectional (n = 3); longitudinal (n = 2); qualitative (n = 2)	27 cross-sectional (n = 19); longitudinal (n = 7); qualitative (n = 4)	8 cross-sectional (n = 5); longitudinal (n = 1); qualitative (n = 1); mixed-methods (n = 1)	42 cross-sectional (n = 24); longitudinal (n = 8); qualitative (n = 8); mixed-methods (n = 1)

Note. Cross-sectional = quantitative cross-sectional design; Longitudinal = quantitative longitudinal design; Mixed-methods = mixed-methods design; Qualitative = qualitative design.

^aIncluded categories related to ethnicity, race, nationality, migration background, or religion.

^bMultiple targeted categories included.

cross-sectional studies, we considered the possible bidirectional relationship between the investigated concepts, and we considered that specific outcomes of bias-based cyberaggression experiences, such as well-being outcomes (e.g., Cano et al., 2021), could also serve as risk or protective factors. However, it is not possible to assume causality based on cross-sectional studies. Therefore, we explicitly refer to the positive and negative associations in the Results section rather than using the terminology of predictors and outcomes where not appropriate. The study design for each reported result is shown in Supplemental Material tables C1–C3. The originally proposed direction for the examined relationships in the cross-sectional studies is displayed in Tables S1–S4, available in Supplemental materials (OSF link: <https://osf.io/gn89e/>).

Bias-Based Cyberaggression Experiences

Four types of experiences were differentiated—exposure, vicarious victimization, direct victimization, and aggression. The quantitative studies measured exposure as exposure to or the witnessing of hateful or degrading speech (including audiovisual materials) that attacks groups or individuals. In the qualitative studies, negative interactions around group identities or characteristics, not directly attacking them, were discussed with young participants. Vicarious victimization was measured as exposure to discrimination or biased attitudes directed at peers and other people (from the same and different groups). Direct victimization was measured in quantitative studies as being attacked or humiliated by hate speech (including audiovisual material) due to one's group membership or characteristics, such as bias-based cyberbullying victimization and discrimination experiences. Similarly, in qualitative studies, young people were interviewed about their direct experiences with discrimination and bias-based cyberaggression. Aggression was measured as the production of hateful material and perpetration in the form of sending or posting hateful content and bias-based cyberbullying perpetration. In the qualitative studies, sexist cyber harassment of female adolescents was discussed.

The main results for each experience are discussed below. Some studies measured bias-based cyberaggression toward multiple categories (e.g., both origin and sexual orientation). For complete results and the indication of multiple investigated categories, see Tables C1–C3 in Supplemental material Appendix C. For complete information about the study design and sample, see Tables S1–S4 in the Supplemental materials. In the results, we differentiate several types of factors—individual characteristics; sociodemographics; internet use-related factors; other risk and victimization experiences (both online and offline); social-level factors; and contextual factors. For each type, if present in the reviewed research, we present risk and protective factors and the potential consequences, including coping experiences.

Bias-Based Cyberaggression Related to Origin or Religion

Individual Characteristics. Ample research examined the individual characteristics associated with involvement in cyberaggression related to origin or religion. We first present the factors that had positive associations with these cyberaggression experiences, thus presenting risk factors or negative outcomes. Exposure and both types of victimization were connected with negative psychological well-being aspects (e.g., depression or anxiety) and stress and worry, both cross-sectionally (Cano et al., 2021; Görzig et al., 2023; Maxie-Moreman & Tynes, 2022; Schultze-Krumbholz et al., 2022; Tao & Fischer, 2022; Tynes et al., 2012, 2014, 2020; Umaña-Taylor et al., 2015), longitudinally (Del Toro & Wang, 2022; English et al., 2020; Tynes et al., 2012, 2014, 2020; Umaña-Taylor et al., 2015), and qualitatively (Cohen et al., 2021). Exposure and both types of victimization also had positive associations with sensation seeking (Wachs et al., 2021) and toxic online disinhibition (Wachs & Wright, 2018, 2019). Exposure was further connected to good academic performance (Harriman et al., 2020). Victimization was connected to initial high academic motivation (Tynes et al., 2015), externalizing problems (Umaña-Taylor et al., 2015), and rule-breaking (Tynes et al., 2014). Aggression was not explored longitudinally. Cross-sectionally, it was connected to sensation seeking (Wachs et al., 2021), online disinhibition (Wachs & Wright, 2018, 2019), and xenophobia (Ergin et al., 2021).

On the other hand, factors related to ethnic identity (i.e., affirmation, exploration, resolution) had negative associations with victimization, indicating a protective role, especially for people with other vulnerabilities, like depression, anxiety, or externalizing problems (Umaña-Taylor et al., 2015). Other cross-sectional protective factors for victimization included body esteem (Matsuzaka et al., 2022); empathy (Lozada & Tynes, 2017); academic self-efficacy and utility values (Tynes et al., 2015); self-management and motivation (Zych & Llorent, 2023); assertiveness (Gámez-Guadix et al., 2020); and digital, critical, and evaluative skills (Setty, 2022). Aggression had negative associations with empathy (Hinduja & Patchin, 2022), social awareness, prosocial behavior, self-management, and motivation (Zych & Llorent, 2023).

There was an ambiguous role for womanism, which had a negative association with direct victimization but a positive association with vicarious victimization (Matsuzaka et al., 2022). Similarly, self-esteem was a protective factor (Tynes et al., 2020) for vicarious victimization, but it also presented a risk factor for people with higher levels of ethnic identity affirmation (Umaña-Taylor et al., 2015).

Lastly, coping was investigated in relation to victimization. Coping with vicarious victimization included ignoring (Setty, 2022). Direct victimization included technical coping, such as saving messages as evidence (Gámez-Guadix et al., 2020).

Sociodemographics. Younger age presented a risk factor for exposure (Cano et al., 2021), whereas older age was connected to victimization (Lozada & Tynes, 2017; Tao & Fisher, 2022; Tynes et al., 2020; Umaña-Taylor et al., 2015) and aggression (Hinduja & Patchin, 2022; Wachs & Wright, 2019; Wachs et al., 2021). The role of gender was inconsistent for direct victimization, but being male was a risk factor for exposure (Cano et al., 2021), vicarious victimization (Umaña-Taylor et al., 2015), and aggression (Hinduja & Patchin, 2022; Wachs & Wright, 2018, 2019; Wachs et al., 2021; Zych & Llorent, 2023). Being a minority presented a risk factor for both victimization and aggression (Menaley et al., 2020; Obermaier & Schmuck, 2022; Schultze-Krumbholz et al., 2022; Setty, 2022; Sylwander, 2022; Tao & Fisher, 2022; Tynes et al., 2020; Wachs & Wright, 2018; Zych & Llorent, 2023).

Internet Use. All types of involvement were associated with spending more time online, on social media, or excessive internet use (Del Toro & Wang, 2022; Lozada et al., 2021; Tao & Fisher, 2022; Tynes et al., 2020; Wachs et al., 2021; Weinstein et al., 2021). The specific risk factors for victimization were race-related internet use (Lozada & Tynes, 2017) and racial justice online activities (Tao & Fischer, 2022).

Other Risk and Victimization Experiences. The majority of studies also investigated other types of risks and victimization experiences and found several positive associations. Firstly, an overlap among all types of bias-based cyberaggression experiences (i.e., exposure, victimization, aggression) was found (English et al., 2020; Lozada & Tynes, 2017; Lozada et al., 2021; Matsuzaka et al., 2022; Maxie-Moreman & Tynes, 2022; Tao & Fisher, 2022; Tynes et al., 2015, 2020; Umaña-Taylor et al., 2015; Wachs & Wright, 2018; Wachs et al., 2021; Weinstein et al., 2021). Previous victimization led to more subsequent victimization (Lozada & Tynes, 2017; Lozada et al., 2021; Tynes et al., 2015, 2020; Weinstein et al., 2021). And there was an overlap in victimization due to other types of categories (Schultze-Krumbholz et al., 2022), other types of online victimization (Del Toro & Wang, 2022; Lozada & Tynes, 2017; Lozada & Tynes, 2017; Matsuzaka et al., 2022; Schultze-Krumbholz et al., 2022), and the offline context (English et al., 2020; English et al., 2020; Görzig et al., 2023; Lozada et al., 2021; Setty, 2022; Tynes et al., 2015; Umaña-Taylor et al., 2015; Weinstein et al., 2021). Further, victimization had positive associations with exposure to traumatic events online (Maxie-Moreman & Tynes, 2022), conflicts related to technology use (Zych & Llorent, 2023), alcohol use disorder, and drug use (Tao & Fisher, 2022). Data misuse and contact with online strangers were associated with all types of bias-based cyberaggression experiences (Harriman et al., 2020; Wachs et al., 2021). Aggression was also associated with other types of intrapersonal and interpersonal conflicts related to technology abuse (Zych & Llorent, 2023).

Social-Level Factors. Only a few studies investigated social-level factors, and none used a longitudinal design. Positive associations of bias-based cyberaggression experiences were found with several factors. Sharenting was associated with all types of involvement (Wachs et al., 2021). Exposure was further associated with interaction with people with racist views and the presence of parental rules for online activities (Harriman et al., 2020), victimization with alienation from others (Maxie-Moreman & Tynes, 2022), and aggression with peer xenophobia (Ergin et al., 2021).

Negative associations, which indicate a protective role, were found with social support for processing racist experiences to which one was exposed (Ortiz, 2021b) and support networks, both online and offline, for victimization (Cohen et al., 2021; Görzig et al., 2023). Peer and close support were also coping strategies with victimization (Cohen et al., 2021; Gámez-Guadix et al., 2020; Sylwander, 2022).

Contextual Factors. Even fewer studies investigated contextual factors, and these were mostly qualitative or cross-sectional. Risk factors for direct victimization were the online anonymous context (Sylwander, 2022) and exposure to the general normalization of racism and the hegemony of colour-blind ideology offline (Ortiz, 2021b). A constraint for the opportunities for learning and development was the outcome of vicarious victimization (Setty, 2022).

One study found a protective role for the quality of the previous night's sleep (Del Toro & Wang, 2022). Calling out antagonizers and caring for fellow targets while maintaining cool rationality were mentioned as protective strategies in the case of exposure (Ortiz, 2021a).

Bias-Based Cyberaggression Related to Sexual Orientation or Gender

Overall, fewer studies focus on cyberaggression related to sexual orientation or gender, and some of them investigated it with cyberaggression related to origin or religion. Thus, some of the associations are the same.

Individual Characteristics. Similar to the previously mentioned targeted categories, exposure, victimization, and aggression due to sexual orientation or gender had positive associations with toxic online disinhibition (Wright & Wachs, 2021; Wachs & Wright, 2018, 2019). Victimization was also connected to negative well-being aspects and psychological distress (Gámez-Guadix & Incera, 2021; McConnell et al., 2017; Berger et al., 2021). However, it was not investigated longitudinally in this case. Empathy had a distinct positive association with exposure (Wright & Wachs, 2021); similar to the previous category, exposure was also related to good academic performance (Harriman et al., 2020). Direct victimization was associated with political self-efficacy, participation (Obermaier & Schmuck, 2022), and having sexual kinks (Berger et al., 2021). This is the same as for the

previous category, and with assertiveness (Gámez-Guadix et al., 2020).

The role of digital literacy varied—one study found a negative association with victimization (Setty, 2022), whereas another study identified a negative association with victimization due to gender but a positive one with victimization due to LGBTQIA+ engagement (Obermaier & Schmuck, 2022).

Lastly, the following coping strategies were connected to direct victimization—technical coping (Gámez-Guadix et al., 2020), avoidance strategies, and ignoring (Berger et al., 2021; Setty, 2022).

Sociodemographics. Being younger was connected to exposure (van Royen et al., 2015), whereas being older connected to victimization (Gámez-Guadix & Incera, 2021) and aggression (Wachs & Wright, 2019). Females were more likely to be exposed (van Royen et al., 2015), and males more likely to be the aggressors (Linares Bahillo et al., 2019; Wachs & Wright, 2018), especially when they were also victimized (Wachs & Wright, 2019). However, in other studies about victimization, the role of gender varied; some studies showed an association with being female (Gámez-Guadix et al., 2020; Linares Bahillo et al., 2019; Setty, 2022; Sylwander, 2022) and some with being male (Gámez-Guadix & Incera, 2021; Obermaier & Schmuck, 2022). A common risk factor was being a minority (Gámez-Guadix & Incera, 2021; Obermaier & Schmuck, 2022; Van Royen et al., 2015; Wachs & Wright, 2018).

Internet Use. Internet use was investigated only in relation to exposure and, together with exposure, to cyberaggression related to origin or religion. Thus, the same positive association for exposure was found with more time spent online and the use of a specific platform (Harriman et al., 2020).

Other Risk and Victimization Experiences. Again, an overlap among all types of bias-based cyberaggression experiences was found (Wachs & Wright, 2018, 2019; Wright & Wachs, 2021), including longitudinally with previous exposure and victimization experiences (Linares Bahillo et al., 2019; Wright & Wachs, 2021) and with offline experiences of discrimination (Setty, 2022). Further, a positive association for exposure was found for communication with online strangers (Harriman et al., 2020). Direct victimization was associated with the non-consensual use of pictures (van Royen et al., 2015); sexting; unwanted sexual attention; sextortion and revenge porn (Gámez-Guadix & Incera, 2021); self-harm; and suicidal ideation and attempts (Jadva et al., 2021).

Social-Level Factors. Only a minority of cross-sectional and qualitative studies investigated social-level factors while also measuring cyberaggression related to origin or religion. Thus, the results are similar. Exposure was positively associated with interactions with someone with racist views and

with the presence of parental rules for online activities (Harriman et al., 2020).

Protective factors were investigated only in the case of direct victimization, and a negative association with social support was shown (Obermaier & Schmuck, 2022).

The identified coping strategies with direct victimization included distal advice, close support (Gámez-Guadix et al., 2020), and peer support (Sylwander, 2022).

Contextual Factors. Qualitative studies investigated contextual factors. Risk factors for exposure were the practices of victim-blaming, restricted escape possibilities online, and the tolerance of and a low response to hate from social networking sites (van Royen et al., 2015). For victimization, it was online anonymity (Sylwander, 2022) and the characteristics of LGBTQ support online groups, such as bigger size and bad moderation practices (Berger et al., 2021). Aggression was connected to the normalization of gender normativity and heteronormativity and the patriarchal system (Linares Bahillo et al., 2019).

On the other hand, protective factors were safer social networking site design, low tolerance toward hate, responsible user behavior, and building awareness with education (van Royen et al., 2015).

Bias-Based Cyberaggression Related to Weight

Individual Characteristics and Sociodemographics. Only three cross-sectional studies investigated cyberaggression related to weight and focused only on individual and sociodemographic factors. Exposure was positively associated with body dissatisfaction, higher weight, and being female (Lessard & Puhl, 2021). Direct victimization was also positively associated with being overweight or obese (Lessard & Puhl, 2022; Menaley et al., 2020). Further, it was connected to depression, stress, somatic symptoms, and sleep trouble (Lessard & Puhl, 2022).

A negative association for direct victimization was found with academic performance (Puhl et al., 2013).

Discussion

This study summarizes the findings of 41 studies that focused on young people's bias-based cyberaggression experiences in three broad categories—origin (i.e., ethnicity, nationality, and race) or religion; sexual orientation or gender; and weight. The studies provided ample evidence, especially for experiences related to origin and religion. The studies investigated the role of risk factors, namely in the form of individual characteristics and discrimination and victimization experiences in other contexts. However, our review also highlighted salient gaps in the research on bias-based cyberaggression. Considering the rich nature of the findings described in detail in the results, this discussion section will summarize the key findings, comment on the gaps in the

Table 2. Critical Findings of the Review.

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- The majority of the research was of a cross-sectional nature and focused on the experience of direct victimization.
 - The most often investigated group categories targeted by bias-based cyberaggression were those related to origin (i.e., ethnicity, nationality, migration background) and religion. It was also common to investigate bias-based cyberaggression that targeted multiple categories (e.g., origin and sexuality).
 - Exposure and victimization experiences were associated with negative psychological well-being outcomes, namely depression, anxiety, stress, and worry. Due to the cross-sectional nature of the findings, these could also present vulnerability factors.
 - The findings show an overlap of bias-based cyberaggression experiences with other types of online and offline victimization and other online risks.
 - Most research focused on risk factors, including being a minority, low psychological well-being, and higher and risky internet use.
 - Longitudinal research shows a vicious circle of violence, from bystanders and victims to perpetrators, for both origin and religion-related and sexual orientation and gender-related cyberaggression.
 - There is a gap in the understanding of the effects of social-level and contextual factors and protective factors for bias-based cyberaggression involvement.
-

current knowledge, and provide suggestions for future research. Table 2 summarizes the main findings of the review.

Bias-Based Cyberaggression Research

Analogous to the research about the offline realm (e.g., Almeida et al., 2009; Cave et al., 2020; Vines et al., 2017), the majority of existing research focuses on bias-based cyberaggression that targets origin or religion. Furthermore, a growing line of research investigates cyberaggression targeted at sexual orientation and gender. However, other targeted categories, especially appearance, weight, and disability, are currently understudied. It also needs to be stressed that numerous studies include multiple targeted categories in their measurements, which enable only a general impression of the experience and hinder our understanding of the possible nuances of the diverse experiences. This is a gap that limits the possibilities of the comparisons of different risk and protective factors and outcomes of bias-based cyberaggression experiences that are related to the targeted categories (e.g., sexual orientation, weight) that could lead to specific coping strategies and prevention and intervention efforts.

The existing evidence is quite robust, though it is limited by the prevailing cross-sectional nature of most studies, which hinders causal inferences. Specifically, this concerns the relationship between negative well-being outcomes (e.g., depressive and anxiety symptoms, feeling worried and on guard), exposure, and both types of victimization (e.g., Cano et al., 2021; English et al., 2020; Gámez-Guadix & Incera, 2021; Tao & Fisher, 2022). On the one hand, this indicates that bias-based cyberaggression leads to negative outcomes, but, on the other hand, these can also present vulnerabilities and risk factors for bias-based cyberaggression involvement, as discussed, for example, by Görzig et al. (2023). Lower psychological well-being is often connected to various disadvantages, and this predisposes young people to experience various forms of aggression and discrimination (Stoilova et al., 2021), including bias-based cyberaggression. Our review shows that we need more studies to

investigate the causality of the relationship between well-being and bias-based cyberaggression in order to disentangle this association and develop better-targeted intervention programs.

Risk Factors

Ample research examined the risk factors for involvement. Yet, these focused mainly on the level of the individual and sociodemographic characteristics and other types of offline and online victimization experiences and risks.

The findings show a link between victimization experiences in different contexts and involvement in cyberhate and other online risks. This was shown both in the case of cyberaggression related to origin or religion, and to sexual orientation or gender. Firstly, previous discrimination and victimization experiences predict subsequent bias-based cyberaggression involvement, including aggression (e.g., Tynes et al., 2015, 2020; Wachs & Wright, 2018). Secondly, for exposure and victimization, there was an overlap with offline discrimination and harassment (e.g., English et al., 2020; Umaña-Taylor et al., 2015). And, thirdly, these experiences were connected to other types of online risks (e.g., Gámez-Guadix & Incera, 2021; Wachs et al., 2021). This is in line with research that shows an overlap between offline vulnerabilities and online risks (e.g., El Asam & Katz, 2018), and it stresses the need for further research to identify the protective factors for bias-based cyberaggression involvement, which might be especially beneficial for the youth at risk of such polyvictimization. The category of other risk and victimization experiences was not explored within the research on cyberaggression related to weight. However, a study by Menaley et al. (2020) showed that weight-based discrimination interacted with another vulnerability. Specifically, it was connected to depressive symptoms among ethnic minority participants. There is a need to further explore interactions between bias-based cyberaggression experiences and other vulnerabilities and to focus more on cyberaggression and discrimination experiences due to weight.

Another set of ample empirical evidence concerns the connection between bias-based cyberaggression involvement and well-being. The majority of the studies about exposure and victimization focused on the psychological dimension of well-being (e.g., depression, anxiety, stress). These dimensions remained generally unexplored for aggression and any involvement in cyberaggression related to weight.

Concerning internet use-related factors, more online activities were connected to all types of involvement in cyberaggression related to origin or religion and sexual orientation or gender (Harriman et al., 2020; Lozada & Tynes, 2017; Lozada et al., 2021; Tao & Fisher, 2022; Weinstein et al., 2021), and they were unexplored in relation to cyberaggression related to weight. Youth who are more online are presented with more opportunities to encounter something harmful or hateful there. This was also the case for online civic engagement: active youth were more likely to be exposed and victimized by cyberaggression related to origin or religion (Tao & Fisher, 2022). This indicates that their online activities might make civically engaged young people more vulnerable by putting them into contact with potential perpetrators. Future research should also focus on other vulnerable groups (e.g., sexual minorities).

Social-level factors were given limited attention within the research on risk factors. One study showed that sharenting is a risk factor for all types of involvement in cyberaggression related to origin or religion (Wachs et al., 2021). A connection between the presence of parental rules for online activities and exposure was also found cross-sectionally (Harriman et al., 2020). This might mean that parents introduce more rules as a result of bias-based cyberaggression involvement or other child risk and victimization experiences. However, it can also mean that certain types of parental mediation might present a risk factor, hinting that future research should inquire more about the role of parents and different types of parental mediation. For example, a study (Wright et al., 2021) about adolescents from different regions of the world showed a difference between instructive and restrictive parental mediation. Namely, instructive mediation was linked to positive coping strategies with cyberhate victimization, whereas restrictive parental mediation negatively impacted adolescents' ability to cope with it.

The importance of the context of bias-based cyberaggression experiences was highlighted in qualitative studies. Specifically, young people perceived online anonymity (Sylwander, 2022), low response and high tolerance of hate by social networking sites and platform providers (van Royen et al., 2015), and poor or inexperienced moderation (Berger et al., 2021) as risk factors for being exposed to and victimized by origin or religion and sexual orientation or gender-related cyberaggression. These types of experiences were also related to the general normalization of racism or heteronormativity on the cultural level (Linares Bahillo et al., 2019; Ortiz, 2021b).

Protective Factors

Only a handful of studies investigated the protective factors for bias-based cyberaggression involvement. The common protective factors for exposure and victimization related to origin or religion and sexual orientation or gender were social support and trust (Cohen et al., 2021; Görzig et al., 2023; Obermaier & Schmuck, 2022; Ortiz, 2021b) and positive coping strategies (Cohen et al., 2021; Gámez-Guadix et al., 2020; Ortiz, 2021a; Setty, 2022). The rest of the protective factors were specific only to one type of targeted category.

Generally, our findings show that more research on protective factors that could decrease the risk of being involved in bias-based cyberaggression or that could mitigate the negative outcomes is highly warranted. For factors that predict aggression, only the protective roles of having higher empathy (Hinduja & Patchin, 2022), social awareness, prosocial behavior, and self-management and motivation (Zych & Llorent, 2023) were, as of now, identified, and only in relation to cyberaggression related to origin or religion. Generally, younger children and females were also less likely to engage in aggression. To help reduce the risk of aggression, future research should widen the scope of the examined protective factors and focus on the perpetrators who spread bias and hate related to other categories.

Our findings also showed that well-being could play an important role because negative well-being aspects were the risk factors for various types of bias-based cyberaggression involvement. However, the positive well-being aspects, with a potentially protective role, remained largely unexplored, especially for bias-based cyberaggression unrelated to origin or religion. In addition, the majority of the studies about exposure and victimization focused on the psychological dimension of well-being. Only a minority of studies (Cohen et al., 2021; Harriman et al., 2020; Ortiz, 2021b) looked at the associations with other dimensions of well-being, like social well-being. However, considering that supportive environments can mitigate the risk of bias-based cyberaggression involvement for vulnerable youth (Görzig et al., 2023), future research should involve factors related to the social environment and social support, which could serve as both protective factors (Ortiz, 2021b) or coping resources (Sylwander, 2022).

Studies about origin or religion-related cyberaggression explored the role of ethnic identity (i.e., affirmation, resolution, exploration) and suggested their potential protective roles (Tynes et al., 2012; Umaña-Taylor et al., 2015) against victimization experiences. A similar investigation would also be beneficial for other types of identities (e.g., connections to sexuality or gender). Even further, these could be combined with a focus on the role of the family and peer support, which are important protective factors (Cohen et al., 2021; Görzig et al., 2023). However, these might be linked more strongly in the case of origin or religion-related cyberaggression,

which attacks identities that are usually shared within families and close circles. This might diverge, for example, for attacks that are due to sexual orientation or appearance-related characteristics. As adolescents are less likely to disclose their discrimination experiences with such attacks (Bedrosova, Dufkova et al., 2022), future research needs to identify the protective factors and agents for other types of targeted identities.

In addition, the role of the school and the education environment should be explored further. Schools can help develop media literacy, gain information about bias-based cyberaggression, and provide coping strategies for harmful online interactions. However, only a handful of studies focused on school-related factors, specifically the role of academic motivation (in the form of academic self-efficacy and positive attitudes toward schoolwork) and performance or grades. The findings were inconsistent—these factors were shown to both protect youth from victimization due to weight and origin or religion (Puhl et al., 2013; Tynes et al., 2015), but also to increase the risk of origin or religion-related victimization and exposure (Harriman et al., 2020; Tynes et al., 2015). On the one hand, we could assume that better academic performance and motivation are connected to higher digital literacy and digital skills (e.g., Hurwitz & Schmitt, 2020; Pagani et al., 2016) and, as such, can protect young people from visiting potentially harmful websites or engaging in harmful interactions and thus decrease their chance of encountering bias-based cyberaggression as victims or bystanders. Yet, on the other hand, higher academic and digital skills can also be connected to higher awareness of hate speech and higher media literacy, leading to higher recognition and, consequently, self-reports of bias-based cyberaggression experiences. These findings highlight the need for future research to focus in more detail on specific digital media literacy and skills in relation to bias-based cyberaggression involvement rather than more general measurements of academic performance. As a qualitative study by Setty (2022) reports, the role of critical and evaluative skills can be a protective factor for victimization. A second study that explored this factor (Obermaier & Schmuck, 2022) showed a varying role for general digital media literacy for different categories targeted by bias-based cyberaggression: it protected against victimization due to gender, yet it was a risk factor for victimization due to sexual orientation. This difference highlights the need to look at targeted categories separately and even beyond our categorization, which, for example, grouped sexual orientation and gender. Further, it would be fruitful to explore which dimensions of media literacy (e.g., technical skills, communication skills) mitigate the risk of victimization and to see which dimensions of media literacy education should be included in prevention programs for bias-based cyberaggression involvement. Media literacy skills can be crucial for the victims and bystanders, who can intervene in the situation, or perpetrators who produce hateful content. However, our review shows that the role of school-related factors and

media literacy as potential protective factors has not been investigated in relation to aggressors. Thus, we recommend that future research investigate the role of digital skills and literacy in all types of involvement.

The studies also showed an unexpected association. Though two studies showed that empathy was a protective factor for origin or religion-related cyberaggression involvement (Hinduja & Patchin, 2022; Lozada & Tynes, 2017), in one study (Wright & Wachs, 2021), higher empathy was connected to a higher risk of sexual orientation or gender-related cyberaggression exposure. Similar to our argumentation about academic performance, this might be due to the fact that youth with higher empathy might be more sensitive toward hate and hate speech and they might be more likely to recognize it. It is important to note that the same study found empathy as a protective factor for aggression. Thus, even though it can be a protective factor, empathy might make some children more sensitive and vulnerable toward hate speech, and prevention efforts should focus on educating such young people about how to cope with bias-based cyberaggression exposure in order to decrease the potential harm effectively. In addition, empathy is a multidimensional concept, and we recommend future bias-based cyberaggression research to distinguish among the different forms of empathy, such as cognitive and affective empathy, because results might change according to the type of empathy investigated (Ritchie et al., 2022).

As was stated above, contextual factors remained largely understudied. Yet, the qualitative research that explored their role shows that they might be important protective factors, especially low tolerance toward hate and aggression by the platforms, the platform design, and responsible moderation, all of which can protect young people from encountering bias-based cyberaggression (van Royen et al., 2015) and being victimized (Berger et al., 2021). We recommend further investigation to evaluate the effectiveness of distinct platform features (e.g., ways of reporting content and notifying moderators) in reducing hateful and biased content online.

Consequences

Most studies focused on the individual-level outcomes—the effects on individual well-being and further victimization experiences and risks. Exposure and both types of victimization across all of the investigated categories were connected to negative well-being outcomes in both cross-sectional and longitudinal studies, as detailed in the results. Namely, it was connected to depression, anxiety, worrying, and distress. In the case of cyberaggression related to origin or religion and sexual orientation or gender, all types of involvement were also connected to other involvement, offline discrimination and bullying experiences, and other risky online experiences. This overlap of risky experiences was not investigated in weight-related cyberaggression and it presents an important gap for future research.

Such outcomes can be prevented by effective coping with the bias-based cyberaggression experiences; however, coping was explored only in connection to vicarious and direct victimization due to origin or religion and sexuality or gender. Some studies found that ignoring it or avoidance coping can be effective (Berger et al., 2021; Schultze-Krumbholz et al., 2022; Setty, 2022). Indeed, the respondents in a study by Setty (2022) mentioned ignoring hate as a strategy that would allow them to continue using social media and enjoy its benefits even when the hate is prevalent there. Yet, this strategy was reported as effective more by bystanders than by cyberhate victims. Other studies (Cohen et al., 2021; Sylwander, 2022) found peer support and peer discussions to be effective forms of coping. We still lack research that would better disentangle how different coping strategies can lead to lesser harm and to which potentially positive behavioral outcomes, such as bystanders intervening, they are connected. Considering that exposed bystanders represent the majority of involved youth (Machackova et al., 2020), further research is needed to investigate coping strategies for exposure to develop educational and intervention strategies suited to bystanders' experiences. Even though research suggests possible desensitization toward hateful content (Cohen et al., 2021), more active and prosocial behavioral responses from involved actors, including bystanders, could mitigate the problem of bias-based cyberaggression on the societal level. This is especially relevant because there seems to be a vicious circle of violence: exposed and victimized youth become bias-based cyberaggressors (e.g., Wachs & Wright, 2018; Wright & Wachs, 2021). And such aggression is connected to a decrease in empathy (Hinduja & Patchin, 2022) and prosocial behaviors (Zych & Llorent, 2023). It is crucial to teach involved young people how to cope with their exposure and victimization experiences and break this cycle. In addition to coping, other types of reactions to bias-based cyberaggression experiences (e.g., victims' or bystanders' perception of the perpetrators) could be important moderators and influence subsequent well-being and behavioral outcomes and present an opportunity for future research.

Only the qualitative studies (Cohen et al., 2021; Linares Bahillo et al., 2019; Ortiz, 2021b) explored the broader negative outcomes of bias-based cyberaggression, such as the normalization of hate in cyberspace and the public desensitization toward it. This topic was missing in the research on weight-related cyberaggression. Such social-level outcomes should receive more research attention. For example, there should be investigations of young people's perceptions of their media environment and the factors that lead to their desensitization toward hate. An experimental study of an adult population (Soral et al., 2018) showed that a higher amount of cyberhate exposure leads to both desensitization and an increase in outgroup prejudice. As young people are still in a sensitive stage of attitude development (Cortese, 2005), we should examine how bias-based cyberaggression affects their in-group and outgroup attitudes. Additionally, our review shows there is still a lack of knowledge about the

role of outgroup attitudes and prejudice as predictors for youths' bias-based cyberaggression involvement, as only one mixed-method study (Del Toro & Wang, 2022) reported on the role of xenophobia. Thus, we still do not know which attitudes decrease involvement. Especially for bystanders and potential perpetrators, this could lead to the development of interventions that increase their prosocial behavioral responses.

Lastly, there was an emerging line of research that investigated the moderating and mediating effects and showed the important role of toxic online disinhibition (Wachs & Wright, 2018, 2019) and the lack of empathy (Wright & Wachs, 2021) as moderators between bias-based cyberaggression exposure or victimization and aggression. Depression mediated the relationship between general and racial justice as part of civic social media use and vicarious victimization. In the second case, so did illicit drug use (Tao & Fisher, 2022). Sexual and gender-based online victimization mediated the relationship between depression and direct victimization (Gámez-Guadix & Incera, 2021). We believe other factors need to be investigated because mediation analyses can provide further insights into the mechanisms of bias-based cyberaggression involvement, and the exploration of other types of moderating effects can give us more information about the conditional effects of involvement.

Limitations

Our study is not without limitations. Firstly, our focus was on specific group categories targeted by bias-based cyberaggression, because these are commonly experienced by young people (Balica, 2017; Williams, 2019). However, other group categories could be targeted and warrant future review. Secondly, due to this focus, we did not include research that investigated general cyberhate and online discrimination without specifying any targeted categories in its measurement. We recommend future review efforts to synthesize these more general studies. Thirdly, our focus was on individual- and social-level factors, not cultural and national differences. Due to this, we only included studies from the Euro-American context. Further reviews should explore whether the mechanisms for bias-based cyberaggression involvement are the same across diverse cultural contexts. We also did not include studies that analyzed media content because these would not provide information about the outcomes and risk and protective factors for individuals' bias-based cyberaggression involvement. However, they could provide valuable information about the types of biased and hateful content young people encounter and inform future research and educational efforts, and they could supplement the findings from a rich body of literature about hateful content analysis, detection, and moderation (e.g., Castaño-Pulgarín et al., 2021; Jahan & Oussalah, 2023; Mansur et al., 2023). Lastly, our interpretation of risk and protective factors vs. the outcomes of bias-based cyberaggression experiences is limited by the cross-sectional nature of the majority of the

Table 3. Implications of the Review for Practice, Policy, and Research.

Implications for practice	<ul style="list-style-type: none"> - We identified a pattern of general vulnerability that predisposed young people to experience bias-based cyberaggression, as well as other types of online and offline victimization. Prevention and intervention strategies should focus on vulnerable young people among minorities but also those with low psychological well-being and higher and risky internet use, in order to decrease their potential bias-based cyberaggression involvement. - Further, it is necessary to foster positive coping strategies to break the vicious cycle of violence between bias-based cyberaggression bystanders, victims, and perpetrators. - The identified protective factors for victimization included higher self-esteem, social support, and social trust. Protective factors for perpetrators included prosocial behavior and empathy. These traits should be fostered among young people.
Implications for policy	<ul style="list-style-type: none"> - Our review can inform policymakers, firstly, by identifying at-risk youth for bias-based cyberaggression involvement and summarizing the risk and protective factors based on the ample evidence about young people's experiences with cyberaggression that targets ethnicity, race, nationality, and religion, and a growing line of research about experiences with cyberaggression that targets sexual orientation, gender, and weight, and, secondly, by summarizing the research about online hate speech as well as bias-based cyberbullying experiences. Policies against bias-based cyberaggression should reflect the wide manifestations that bias-based cyberaggression can have in young people's experiences.
Implications for research	<ul style="list-style-type: none"> - Longitudinal and experimental research is needed to disentangle the association between bias-based cyberaggression involvement and negative psychological well-being aspects. - There is a need for more investigation of cyberaggression that targets weight and sexual orientation or gender, which would complement the rich findings we have for cyberaggression related to origin and ethnicity, and allow for more informed comparisons of risk and protective factors for different vulnerable groups. - Further investigation of protective factors is needed, especially social-level factors, contextual factors, and coping strategies.

reviewed studies, in which it is not possible to determine the causality of these relationships. We reported this for each of the presented findings.

Recommendations for Future Research and Practical Implications

Several recommendations for future research were mentioned in the Discussion section. The main points are summarized in Table 3.

Further, our results highlight several gaps in the research and understanding of the causes of bias-based cyberaggression. These lead us to suggest some policy and practical implications for prevention and intervention. Firstly, as we can see, empathy is a protective factor against bias-based cyberaggression (Hinduja & Patchin, 2022). However, this depends on the type of empathy that is considered. Emotional empathy should be increased at the same time as cognitive empathy. Schools are a key environment in terms of confidence building and social skills development. It seems relevant to develop, from the early stages, a whole school approach to democracy and human rights that enables students to have an active role in their life environment and empowers them in terms of empathy, self-esteem, and assertiveness, and, along with their teachers, helps to prevent and tackle bias-based cyberaggression. Promoting an intercultural school climate that is not reduced to multiculturalism implies learning together and from each other at the school level and, as individuals, lessens prejudice (Archambault et al., 2018; Bergamaschi et al., 2022). As shown by Lee et al. (2015), emotional control training and peer counseling are paramount to preventing victimization. This might also be

included in the children's curriculum in order to mitigate the negative effects of victimization by bias-based cyberaggression and strengthen resilience capacity.

Secondly, bias-based cyberaggression and offline victimization are interrelated. For instance, Awan and Zempi (2016), in a study following the terrorist attacks in Paris in 2015, argue that Muslims have been the target of various hate crimes in the form of mosque vandalization, physical assault, and attacks on private property. Simultaneously, online hatred also increased, and Muslims were threatened with violence in real life. Preventing bias-based cyberaggression means that intervention should be at all levels of social life, both online and offline. That intervention against bias-based cyberaggression should be integrated into broader comprehensive prevention schemes that are not limited to individuals but that include contextual and societal factors. This implication is relevant not only for origin or religion-related aggression but also for sexual orientation and gender-related aggression, for which we see similar overlap between the online and offline realms (Wright & Wachs, 2021).

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Supplemental Material

Supplemental material for this article is available online.

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