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Breaking Barriers: The Impact of Intergroup Contact on Bystanders' Actions Against Bias-Based Cyberbullying

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Abstract

Bystanders are present in most bullying and cyberbullying incidents, and when they intervene in favor of the victim, they can effectively stop it. Evidence suggests that intergroup factors, such as social identification, increase bystanders' helping intentions in bullying episodes. However, relatively little is known about the potential positive effects of intergroup factors on bystanders' attitudes and behaviors when witnessing bias-based cyberbullying (i.e., cyberbullying based on identity). Two studies examined bystanders' responses to cyberbullying toward two minority groups (i.e., LGBTQI+ and Black youth); and what can influence their helping intentions when they witness bias-based cyberbullying episodes. Study 1 (N = 2,253) showed that bystanders' responses vary depending on the target of cyberbullying, helping an LGBTQI+ youth target less than a Black target, and showing less empathy, less positive group norms, less inclusive identities, less positive attitudes, and more intergroup anxiety. Study 2 (N = 2,254) revealed that high quality offline contact is associated with more helping behaviors via increased empathy, outgroup attitudes, dual-identity representations and decreased intergroup anxiety (for the LGBTQI+ target), and via empathy, one-group identity, and group norms (for the Black target). Implications for efforts to promote more helping behaviors and positive intergroup attitudes in the online context are discussed.

Keywords: cyberbullying; bystanders; helping; intergroup contact

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Introduction

Cyberaggression is a widely discussed negative consequence of technology use, characterized by intentional harmful behavior conducted through information and communication technologies (ICT; Bedrosova et al., 2022). It can be directed at both individuals and groups, who perceive it as harmful. It encompasses various forms of digital aggression, and in this study, we specifically focus on cyberbullying. Cyberbullying involves the use of digital technologies to harass, threaten or humiliate individuals intentionally, repeatedly, and over time (Kowalski et al., 2014). It can occur anywhere and at any time, often perpetrated by both known and unknown individuals. The negative effects of cyberbullying on victims, such as anxiety symptoms, lower academic performance, and even suicide attempts, have been well-documented (e.g., António et al., 2023; Kowalski et al., 2014). This form of bullying, like traditional bullying, specifically targets people based on skin color, ethnicity, gender identity, sexual orientation, or other aspects of their identity (i.e., bias-based bullying; Earnshaw et al., 2018; Kowalski et al., 2019; Russell et al., 2012). Similar to cyberhate, bias-based cyberbullying involves targeting individuals based on

their social group membership (e.g., ethnicity, sexual orientation). Importantly, while cyberhate often involves anonymous or ideological expressions of prejudice directed at social groups more broadly (e.g., Keum & Miller, 2018; Wachs & Wright, 2018), bias-based cyberbullying typically occurs in more interpersonal, relational, and peer-based contexts - especially among adolescents - and frequently targets specific individuals through direct and repeated attacks (e.g., Hinduja & Patchin, 2022; Palmer & Abbott, 2017).

Traditionally, research on bullying has adopted an individualistic approach, examining the experiences of victims and the behaviors of aggressors. However, recent studies have recognized bullying, including cyberbullying, as a group phenomenon exploring it as involving an ecological context, highlighting the role of different social and group factors (António et al., 2018; DeSmet et al., 2018; Trifiletti et al., 2021). However, these studies have been generally restricted to the roles of the victim and bully (e.g., to victim's and bullies' group identities), and not specifically to group processes and the intergroup context that involve and influence *bystanders.* Bystanders, individuals who witness bullying incidents, play a crucial role when we consider an intergroup approach to bullying. When bystanders intervene on behalf of the victim, they can effectively prevent or halt bullying incidents, including cyberbullying (e.g., DeSmet et al., 2018; Domínguez-Hernández et al., 2018; Hawkins et al., 2001; Midgett et al., 2015). Rather than focusing solely on individual differences, bias-based bullying and cyberbullying require a different level of theoretical analysis. Research should focus on different factors, related to the intergroup context (e.g., group identity) that lead people to exclude others, based on their group membership, and on understanding the factors that encourage bystanders' intentions to help the victims. This is of utmost importance, as bystanders' active involvement can contribute to the cessation of victimization (e.g., Abbott & Cameron, 2014; António et al., 2018).

We propose an alternative approach to addressing bystanders' responses to bias-based cyberbullying. Drawing upon intergroup contact theory - one of the most influential theories of prejudice reduction (see Pettigrew & Tropp, 2006 for meta-analysis) - we theorize and test, for the first time, if the classic "contact hypothesis" is an enabling condition at improving bystander helping intentions in online dynamics. Specifically, in two online studies, we examine a) the responses of youth bystanders to bias-based cyberbullying incidents aimed at two groups commonly targets of bias-based bullying (LGBTQI+ and Black youth; Study 1) and b) whether intergroup contact is related to enhanced bystanders' helping intentions during cyberbullying episodes (Study 2). This research extends previous studies by a) exploring whether intergroup contact affects what happens online, namely the behavior of cyber bystanders, b) examining potential underlying mechanisms for these effects (i.e., empathy, group norms, common inclusive identities, intergroup anxiety, and attitudes) and c) comparing bystanders' responses to bias-based cyberbullying targeting LGBTQI+ and Black youth. By separately examining two distinct outgroups, the robustness of the proposed effects can be assessed.

Bystanders in Bias-Based Cyberbullying

The Importance of Intergroup Dynamics in Bias-Based Bullying

Sexual and ethnic minorities often face unique challenges and discrimination in society, and these challenges can extend to the online world. In the digital realm, where anonymity and distance can embolden people, cyberbullying against sexual and ethnic minorities has become a prevalent and distressing issue (Sterner & Felmlee, 2019; Zych & Llorent, 2021). Prior work on bias-based cyberbullying has mainly focused on behaviors targeting immigrant-origin people (e.g., Park et al., 2019). Studies focusing on other minority groups showed that LGBTQ+ individuals face high rates of online harassment and cyberbullying due to their sexual orientation or gender identity (e.g., Hinduja & Patchin, 2022). This study aims to contribute to the knowledge of how to stop online harassment by examining bystanders' responses to two incidents of bias-based cyberbullying involving two outgroups: an LGBTQI+ target and a Black youth as target. This not only allows us to compare responses towards these two groups, but also extends the literature by testing intergroup contact theory and hypotheses in two comparatively understudied intergroup contexts.

Proposed Interventions

Efforts to address bias-based cyberbullying have focused on multiple levels of intervention. For instance, research suggests that community-wide interventions, such as awareness campaigns and inclusive education programs, can help reduce bias, foster empathy, and create more supportive environments for sexual and

ethnic minorities (e.g., Espelage et al., 2013; Kosciw et al., 2016). Online platforms and social media networks have also been urged to implement proactive measures, including effective reporting systems, content moderation, and promoting digital citizenship (e.g., De Streel et al., 2020; Vismara et al., 2022). However, interventions to reduce cyberbullying are relatively uncommon and have many limitations (Herry & Mulvey, 2022; Saleem et al., 2022; Vismara et al., 2022).

Interventions centered on peers, such as promoting bystander intervention, present a potential avenue for addressing and reducing bias-based cyberbullying (DeSmet et al., 2018; Earnshaw et al., 2018; Sarmiento et al., 2019; Vismara et al., 2022). Indeed, mobilizing bystanders, individuals who witness or observe bullying incidents, is a key strategy for effectively reducing face-to-face bullying in schools (e.g., Christou et al., 2024; Polanin et al., 2012; Salmivalli et al., 2011). Cyberbullying, as a type of peer victimization, can also be seen as a group phenomenon (Sarmiento et al., 2019). Therefore, when studying cyberbullying, it is crucial to examine all the roles of participants, instead of solely concentrating on the bullies and victims. Bystanders, who can intervene and potentially improve the situation, are especially noteworthy in both traditional and cyberbullying (e.g., Domínguez-Hernández et al., 2018). Research has shown that intervention by bystanders can be critical in preventing or reducing bullying, including cyberbullying (e.g., Allison & Bussey, 2016), but less is known about their role in cyberbullying (Barlińska et al., 2018; Sarmiento et al., 2019). In cyberbullying incidents, the group of bystanders is almost unlimited given the coverage and anonymity of the online environment (Barlińska et al., 2018; Zhao et al., 2023). However, most bystanders tend to remain passive (Allison & Bussey, 2016), refraining from taking action despite their awareness of the situation.

Although research suggests that bystanders' dynamics in cyberbullying are more complex than in face-to-face bullying, due to the specific features of computer-mediated communication (e.g., the ability to see public content and also content made by "friends-of-friends" or the opportunity to react to cyberbullying incidents through text- and picture-based communication or even just by clicking a button; Bastiaensens et al., 2014), there is consensus on prosocial bystander behavior as an effective solution to both types of bullying (Barlińska et al., 2018; Sarmiento et al., 2019). Indeed, research has highlighted that when bystanders defend the victims, cyberbullying, and its harm decrease (e.g., Barlińska et al., 2018; DeSmet et al., 2018).

Bystanders do not always intervene or help victims, and understanding the determinants of bystanders' helping intentions is crucial in promoting positive intervention. Research indicates that the factors that affect the behaviors of bystanders online and offline are similar (Domínguez-Hernández et al., 2018). However, compared to face-to-face bullying, less is known about how to promote bystander intervention in cyberbullying and which factors can encourage bystanders' intervention in these incidents (Barlińska et al., 2018; Domínguez-Hernández et al., 2018). Research has identified contextual/environmental and personal/individual factors as determinants of bystanders' intervention in cyberbullying incidents (Domínguez-Hernández et al., 2018). For example, bystanders are more likely to intervene when they perceive the behavior as harmful, have empathy toward the target, and possess lower fear (e.g., Machackova & Pfetsch, 2016; Machackova et al., 2017; Sarmiento et al., 2019). There are also factors related to the online context itself that may influence bystanders' responses (e.g., they can be invisible and unidentifiable; Machackova et al., 2017). However, these findings overlooked the intergroup context and processes that may account for bystanders' intentions to help the victim of bias-based cyberbullying. When examining bias-based cyberbullying, which involves targeting individuals based on their membership in specific social groups, it is crucial to consider the intergroup context and the factors that may influence bystanders' responses (Barlińska et al., 2018; Gönültaş & Mulvey, 2021).

Intergroup factors such as intergroup contact and shared inclusive identities have been found to enhance bystanders' intentions to help in face-to-face bullying incidents (Abbott & Cameron, 2014; António et al., 2017, 2018). However, limited research has explored the role of bystanders and the predictors of their behaviors in online bullying situations, and little is known about whether intergroup factors influence the behaviors of bystanders online (Bastiaensens et al., 2014; Park et al., 2019; Sarmiento et al., 2019). As in traditional bullying, research on bystanders' behaviors in cyberbullying has mainly focused on personal factors such as gender and empathy (Trifiletti et al., 2021; Zych et al., 2019). A few studies have focused on situational and contextual determinants of bystanders helping the victim or reinforcing the bully (e.g., Bastiaensens et al., 2014), or on the prototypicality of the aggressor as a group-level factor explaining the spread of aggression on social media (Trifiletti et al., 2021). However, the understanding of group dynamics and determinants of bystander-helping behaviors in online bullying remains limited (Barlińska et al., 2018; Rudnicki et al., 2022; Trifiletti et al., 2021). Given the group component of bullying, it is crucial to investigate group-level factors and processes that may trigger bystanders' helping behaviors in online settings. Thus, the current research examines youth responses to

two different types of cyberbullying incidents: one targeting LGBTQI+ youth and another targeting Black youth (Study 1) and also explores the effectiveness of intergroup contact in promoting bystanders' intentions to help (Study 2).

Determinants of Bystanders' Helping Intentions: The Role of Intergroup Contact

Adolescents' motivation to intervene on behalf of a victimized peer from a different social group in a bullying situation relies on contact or the desire for contact (Hitti et al., 2023). Evidence suggests that positive intergroup contact can increase bystanders' helping intentions in face-to-face bullying episodes involving victims from different backgrounds to the bystander, such as immigrant-origin or LGBTQI+ individuals (Abbott & Cameron, 2014; António et al., 2017; Gönültaş & Mulvey, 2021). Positive intergroup contact has been found to not only influence bystanders' intervention intentions, but also their willingness to challenge discriminatory behaviors (e.g., Abbott & Cameron, 2014; Gönültaş & Mulvey, 2021). However, limited understanding exists regarding the potential positive effects of intergroup contact on bystanders' behaviors when witnessing such incidents online.

The classic contact hypothesis by Allport (1954) states that positive contact with members of an outgroup can lead to positive attitudes toward that outgroup. Extensive research has demonstrated the robustness of intergroup contact in improving outgroup attitudes and reducing prejudice across different contexts and age groups (Pettigrew et al., 2011). Intergroup contact plays a vital role in promoting positive intergroup relations, reducing prejudice, and fostering inclusive attitudes and behaviors toward outgroup members (Dovidio et al., 2017; Pettigrew & Tropp, 2006). Therefore, studying the role of intergroup contact in influencing bystanders' responses to cyberbullying incidents is crucial, as it may provide valuable insights into effective strategies for promoting bystander intervention and support in online environments. However, not all contact is positive - negative intergroup contact can reinforce prejudices, exacerbate intergroup tensions and worsen intergroup relations (Paolini et al., 2024; Pettigrew et al., 2011; Wölfer et al., 2017).

Research has shown that direct online contact can decrease perceptions of threat and social distance toward LGBT people and improve attitudes toward LGBT people and undocumented migrants (Kim & Wojcieszak, 2018). There is also evidence for the potential of indirect contact via digital platforms, such as virtual contact involving computer-mediated communication (CMC), to moderately reduce prejudice toward outgroup members (Imperato et al., 2021). A recent study examined male adolescents' and young adults' evaluations of interracial exclusion in both offline and online settings and found that participants with high levels of offline intergroup contact were also likely to have high levels of online contact (Park et al., 2019). Moreover, participants with high levels of offline intergroup contact were more likely to evaluate interracial exclusion as wrong, compared to those with low rates of offline contact. This suggests that in-person, offline intergroup contact is important for recognizing the wrongful nature of racial exclusion even in online settings and can provide guidance in navigating these new online worlds. However, this study focused exclusively on male adolescents and young adults, and evaluated only interracial exclusion. Therefore, there is a lack of parallel evidence on the impact of intergroup contact on bystanders' interventions in the context of online dynamics and different intergroup contexts.

While online environments offer more opportunities to learn about others, it is important to recognize that the quality of interaction may be diminished compared to face-to-face intergroup contact (Park et al., 2019). Online intergroup contact may encompass some challenges or limitations, including reduced availability of nonverbal cues and increased anonymity provided by online platforms. Thus, it possesses features that can either facilitate or hinder intergroup acceptance (Imperato et al., 2021). Understanding these challenges is vital in comprehending the complexities of intergroup contact in online environments and its potential effects on bystanders' responses to cyberbullying incidents.

Drawing on Allport's (1954) contact hypothesis, the current research explores the premise that direct offline contact is associated with increased bystanders' helping intentions in cyberbullying incidents. By incorporating classic direct contact as a variable in this research, we provide a unique perspective to the existing literature on bystanders' helping intentions in bias-based cyberbullying incidents. Furthermore, our research contributes to a more comprehensive understanding of the factors that shape bystanders' responses to cyberbullying targeting two groups: LGBTQI+ and Black youth, examining the importance of offline interpersonal contacts in the digital realm. This approach expands current knowledge and offers valuable insights into effective strategies for promoting bystander intervention and support in online environments.

Besides examining the effects of the intergroup contact on bystanders' helping intentions, we will also examine common mediators of contact effects: empathy, inclusive identity representations (one-group and dual-identity), group norms, intergroup anxiety, and outgroup attitudes, that may account for its impact on bystanders' behavioral intentions to help bias-based cyberbullying victims.

Underlying Mechanisms of Contact Effects

Meta-analytical evidence has demonstrated different underlying mechanisms through which intergroup contact positively influences intergroup relations (e.g., increased knowledge of the outgroup, decreased intergroup anxiety, and greater empathy; Pettigrew & Tropp, 2008). Pettigrew and Tropp (2008) put forward a model, supported by their meta-analysis, which suggests that intergroup contact directly reduces prejudice, while also indirectly influencing it through pathways of intergroup anxiety and empathy. This mediation model offers a valuable framework for studying intergroup contact. However, the relationship between intergroup contact and prejudice is complex, and there exist additional factors, both mediators and moderators, that play a role in this relationship beyond those examined in the meta-analysis (Pettigrew & Tropp, 2008). For instance, perceived ingroup norms and inclusive identity representations have been shown to mediate the relation between direct and indirect friendships and outgroup attitudes and behaviors (e.g., Capozza et al., 2012; Gómez et al., 2011; Vezzali et al., 2015). Capozza et al. (2012) revealed that the effects of contact on outgroup humanization were mediated by group representations and intergroup emotions of anxiety and empathy.

In the specific context of bias-based bullying incidents, evidence has been established regarding the underlying mechanisms through which intergroup contact positively affects intergroup relations (e.g., with LGBTQI+ and immigrant-origin youth as targets; Abbott & Cameron, 2014; António et al., 2017). For instance, increased contact with Black and minority ethnic individuals is associated with greater assertive bystander intentions, through enhanced empathy, increased cultural openness, and reduced in-group bias (Abbott & Cameron, 2014). Similarly, for heterosexual students, having friends who have gay friends (i.e., extended contact) is associated with improved bystanders' intentions of helping victims of homophobic bullying, and this was mediated by increased empathy and decreased masculinity/femininity threat (António et al., 2017). Thus, empathy has been found to play a crucial role in promoting assertive and prosocial behaviors (supporting the victim) among bystanders in the context of both bullying and cyberbullying (e.g., Abbott & Cameron, 2014; Barlińska et al., 2018). Specifically in the context of cyberbullying, studies have shown that cognitive empathy increases bystanders' tendencies to support the victim (Barlińska et al., 2018; Machackova & Pfetsch, 2016). In addition, research shows that both direct and extended friendships predicted less homophobic behaviors and more affirming behaviors, and this positive effect was mediated by less intergroup anxiety and less sexual prejudice (Mereish & Poteat, 2014).

To our knowledge, no research has examined the mediators of contact effects in the context of bias-based cyberbullying and the helping intentions of bystanders. Therefore, in addition to investigating the direct effects of contact on bystanders' helping intentions in cyberbullying contexts, we aim to extend the existing literature on intergroup contact by examining the processes that drive these contact effects. We rely on Pettigrew and Tropp's (2008) intergroup contact mediation model and previous research on bias-based bullying and bystanders' behaviors and explored possible mediators of the relationship between direct contact and bystanders' helping intentions in the online context. Specifically, empathy, inclusive identity representations, group norms, and intergroup anxiety. As we were interested in examining processes driving the effects of direct contact on helping intentions and given that attitudes and behavioral intentions strongly predict actual behaviors (e.g., Smith & McSweeney, 2007), we also tested outgroup attitudes as an additional mediator. These factors may help explain the impact of intergroup contact on bystanders' helping intentions in bias-based cyberbullying incidents.

Research on intergroup contact has predominantly focused on developing strategies to improve attitudes towards members of different groups, with relatively less emphasis on studying behaviors or intentions to act (e.g., Bagci et al., 2020; Christ et al., 2010; Dovidio et al., 2011; Turner et al., 2013). There is a limited understanding of the circumstances that determine how attitudes toward outgroups translate into relevant behavioral intentions or tendencies (Bagci et al., 2020). Given the importance of predicting the behavioral elements involved in fostering harmonious intergroup relationships, our study not only examines the effects of intergroup contact on intergroup attitudes, but also on the behavioral intentions to help the cyberbullying

target. By doing so, we aim to determine whether direct contact can truly serve as an initial step toward fostering more positive intergroup interactions.

In sum, we conducted two studies to examine youth responses to two different types of cyberbullying incidents: one targeting LGBTQI+ youth and another targeting Black youth (Study 1). Additionally, we investigated the potential positive effects of intergroup contact on bystanders' helping intentions when witnessing bias-based cyberbullying episodes, considering the potential underlying mechanisms behind these effects (Study 2).

Both studies include participants aged 15 to 32 years, encompassing a broad developmental range that includes adolescents, emerging adults, and young adults. This age range captures a critical period of social and psychological development during which individuals are highly active in digital environments and increasingly confronted with issues of social identity, peer norms, and intergroup relations, factors central to bias-based cyberbullying dynamics and bystander behavior. Adolescence (roughly ages 13–18) is marked by heightened sensitivity to peer influence and identity formation, with young people increasingly concerned about group belonging and social status (Steinberg & Monahan, 2007). These concerns may influence whether they choose to intervene or remain passive in online bullying scenarios, particularly when victims belong to stigmatized groups. Emerging adulthood, as defined by Arnett (2000), is a distinct developmental stage in industrialized societies, typically spanning ages 18 to 25, characterized by identity exploration, instability, and self-focus. During this period, individuals actively explore possibilities in love, work, and worldviews, making it a formative time for developing lasting attitudes and values, including those related to social group membership, inclusion, and responses to social issues like bias-based cyberbullying. Young adults (up to age 32) may show greater maturity in evaluating social situations and may have more stable attitudes toward outgroups, yet they remain active social media users and can still be influenced by peer dynamics in online settings. Including this full developmental span allows us to examine how responses to cyberbullying evolve across age. This broad range also reflects the real-world diversity of online users who witness and respond to cyberbullying, especially on digital platforms where adolescents and young adults coexist and interact. Consequently, understanding how bystander responses shift across this span provides both theoretical and applied value for interventions aimed at fostering inclusion and support in online settings.

Study 1

This study examined youth responses to cyberbullying incidents toward two targets: LGBTQI+ and Black youth. This not only allows us to improve our understanding of youth bystanders' responses toward two different and comparatively understudied minority groups, but also allows us to develop specific recommendations for future interventions aiming to promote bystanders helping responses to two groups facing significant discrimination and bullying in Portugal, the country in which the research is conducted (European Union Agency for Fundamental Rights, 2024).

Previous comparative research examining thousands of Tweets targeting an individual's gender, race, or sexual orientation found that in the cases of racial/ethnicity and gender, the most common response to cyberbullying was to defend the victim (Sterner & Felmlee, 2019). However, when individuals were involved in a conversation that included a cyber-aggressive message relating to sexual orientation, most remained out of the conflict online as simply bystanders. Based on these findings, but considering the lack of previous research examining differences in the tested variables toward this target group, no specific hypotheses were formulated, and an exploratory approach was adopted.

Methods

Participants and Procedure

Two thousand, two hundred and fifty-three Portuguese youth and emerging adults (56% females, 40% males, 4% transgender and gender diverse) aged between 15 and 32[1] (*M* = 17.3, *SD* = 2.6) participated in this study. Approximately 82% of the participants were in high school (10^{th} to 12^{th} years), 16% were in college/university, and 2% were in middle school (7^{th} to 9^{th} years). One thousand seven hundred and sixty-one participants identified as heterosexual, 310 as LGBTQI+ (lesbian, gay, bisexual, trans, queer, and intersex, among other minority sexual identities), and the remaining did not answer or had doubts as to their sexual orientation. Most

participants identified as White person/White Portuguese/of European origin (87.1%), 4.7% as Black person/Black Portuguese/afro-descendant/of African origin, and the remaining as Asian person/Portuguese person of Asian origin/of Asian origin, Roma person/Portuguese Roma/ Roma/of Roma origin, other origin, or mixed origin. Regarding participants' household income, 16.2% revealed having a low income and 83.8% considered that their household income allowed them to live comfortably. The sample size was based on the criteria defined by the funding entity. A sensitivity power analysis indicated that the final sample size was adequate to detect effects as small as d = .12 with .90 power in t-tests: difference between two independent means (two groups; G*Power 3.1; Faul et al., 2007).

The study was approved by the institutional ethics committee (Report 109/2022) and conducted following the ethical standards of the American Psychological Association, the Declaration of Helsinki, and the European General Data Protection Regulation. All youth who participated in the study had to provide previous informed consent, and before participating they were informed that their participation was voluntary and anonymous. First participants answered to eight questions designed to gather demographic data and one question regarding the experience of cyberbullying victimization in the past six months, preceded by a short definition of bullying and cyberbullying. Then they were randomly allocated to one of the two scenarios: a scenario of cyberbullying with an LGBTQI+ youth as the target or a scenario of cyberbullying with a Black youth as the target. Because this study focused on LGBTQI+ and Black youth as the relevant outgroup targets, participants who identified as LGBTQI+ were assigned to the scenario with a Black youth as the target outgroup and participants who identified as an ethnic minority were assigned to the scenario with an LGBTQI+ youth as the target outgroup. When participants identified as both a sexual and ethnic minority, they were randomly allocated to one of the two scenarios. Two scenarios illustrated a picture of an LGBTQI+ male or female, and another two scenarios illustrated a picture of a Black male or female youth. After each picture, insulting messages directed at the target were created for each scenario. The length and tone of the insults were kept consistent across different scenarios (e.g., "Disgusting" or "Scrub up, you're too dark"). Emojis were used to reinforce the message, following previous research that highlights that emojis make messages more understandable and believable (Daniel & Camp, 2020). The names of the male and female targets were the same in both scenarios and were selected from the frequently used names in the country where the study was conducted. After the scenarios, participants answered to the dependent variables (i.e., main outcomes and mediators). The survey was conducted online (November 2022–February 2023) and data were collected through random sampling methods. After completing the survey, participants were debriefed and thanked for their participation.

Data were collected in a single data collection period by a professional company. After completing data collection, we randomly divided the sample into two non-overlapping subsamples, using standard randomization procedures in SPSS. Each participant was assigned to only one of the two analytic datasets (Study 1 or Study 2). This procedure allowed us to examine distinct research questions while maintaining the statistical independence of the datasets, thereby avoiding overlapping in responses across studies.

Measures

All the following measures were adapted separately depending on the target of the scenario that participants observed (LGBTQI+ or Black youth). The items used to assess gender were based on previous research (Cameron & Stinson, 2019) and included the following options: *Gender*: *Woman*, *Man*, *I identify my gender as:* _____ (please specify). Ethnicity was assessed based on the draft opinion of the Portuguese National Statistics Institute to the proposal of the 2021 Census WG - "Ethnic-racial" issues: *Which of the following options do you think best describes your belonging and/or origin? White person/White Portuguese/of European origin*; *Black person/Black Portuguese/Afro-descendant/of African origin*; *Asian person/Portuguese person of Asian origin/of Asian origin*; *Roma person/Portuguese Roma/Roma/of Roma origin*; *have another origin; or mixed origin*.

Bystanders' Behavioral Intentions. We adapted 12 items from previous research (Bastiaensens et al., 2014; DeSmet et al., 2019). Participants were instructed to observe the scenario of cyberbullying and imagine that they encountered the posts on Instagram. After the scenario, participants indicated their intention to engage in 10 behavioral intentions (i.e., of helping) using 7-point response scales (1= *would definitely not do this*, 7 = *I would definitely do this*), e.g., *I would comfort [name of the victim] in a comment on Instagram*; *I would comfort [name of the victim] without logging into my account (in anonymous*; $\alpha_{Blacktarget}$ = .84; $\alpha_{LGBTQI+target}$ = .87; α_{total} = .86).

Empathy. We adapted 11 items from the Shen's (2010) State Empathy Scale to measure the level of state empathy during the communication process including affective, cognitive, and identification dimensions, e.g.,

I experienced the same emotions as [name of the victim] when seeing this post and the comments. This was presented after the scenario using 5-point response scales (1 = *strongly disagree* to 5 = *strongly agree*; $\alpha_{Blacktarget}$ = .88; $\alpha_{LGBTQI+target}$ = .92; α_{total} = .91). Higher scores indicate more empathy toward the target of cyberbullying.

Inclusive Identity Representations. We adapted three items from previous research (Gaertner et al., 1989). Participants indicated, on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*), to what extent they felt heterosexual and LGBTQI+ people, and White and Black people as a one-group, as two subgroups of the same team (dual-identity), and as two separate groups, e.g., regarding sexual minorities: one-group: *When I think of LGBTQI+ and heterosexual people, I see them as: One group of people.*; dual-identity: *When I think of LGBTQI+ and heterosexual people, I see them as: Two subgroups of the same team.*; separate groups: *When I think of LGBTQI+ and heterosexual people, I see them as: Two separate groups.*

Group Norms. We used the five-item scale (adapted from Gómez et al., 2011), asking participants the extent to which they think their best friends, friends in general, family, teachers, and larger society, would consider it positive to have outgroup members as friends, on a 5-point scale, e.g., For a heterosexual participant: *To what extent do you think the following groups would find it positive to have LGBTQI+ people as friends? (1) your best friends*; 1 = *not at all* to 5 = *very much* ($\alpha_{Blacktarget}$ = .86; $\alpha_{LGBTQI+target}$ = .90; α_{total} = .90).

Intergroup Anxiety. We adapted Turner et al.'s (2013) six-item measure of intergroup anxiety by asking participants whether they would feel happy, awkward, self-conscious, confident, defensive, and relaxed at the prospect of meeting an unknown person from the target group (LGBTQI+/Black person), on a 5-point scale (1 = *not at all* to 5 = *very much*). Happy, confident, and relaxing scores were reverse coded ($\alpha_{Blacktarget}$ = .82; $\alpha_{LGBTQI+target}$ = .85; α_{total} = .84). Higher scores correspond to higher levels of intergroup anxiety.

Outgroup Attitudes. We used a feeling thermometer (0–100ºC), adapted from Haddock et al. (1993), where participants indicated how positive/negative they felt toward the target group. Values higher than 50 degrees indicated a *positive/warm feeling* toward the outgroup.

Randomization Checks

Before the main hypothesis-testing analyses, we conducted randomization checks to ensure that random allocation of participants to condition avoided potential confounds with demographic variables. These include participants' age and gender identification.

A summary of each variable broken down by condition is provided in Tables 1a and 1b. Considering the large sample sizes, which affect the significance level, we used effect sizes to guide our interpretation. One-way ANOVA with condition as the IV indicated negligible differences, explaining less than 1% of variance, across conditions in terms of participants' age, $F(3,2092) = 4.635$, $p = .003$, $\eta_p^2 = .007$. Similarly, there were weak differences across conditions in terms of participants' gender, $\chi^2(6) = 32.268$, $p < .001$, Cramér's $V = .09$.

Table 1a. *Age Means and Standard Deviations Broken Down by Condition (Study 1).*

	Condition	*Mean*	*SD*
Age	LGBTQI+ youth Female	17.17	2.54
	LGBTQI+ youth Male	17.23	2.33
	Black youth Female	17.48	2.86
	Black youth Male	16.90	2.24

Table 1b. *Participant Gender Broken Down by Condition (Study 1).*

	Condition			
	LGBTQI+ youth Female	LGBTQI+ youth Male	Black youth Female	Black youth Male
Male	222	183	357	112
Female	224	216	544	227
TGD	13	14	37	20

Data Analysis

SPSS 28.0 was used to perform descriptive statistics (i.e., mean, and standard deviation of the main variables) and Pearson correlation analysis between the variables of interest. Multiple comparison analysis with Bonferroni correction showed no significant differences between male vs. female victims for both the LGBTQI+ and Black targets: helping behavior, empathy, group norms, inclusive identities, outgroup attitudes, and intergroup anxiety did not differ significantly between participants in the LGBTQI+ Female condition and Male condition and between the Black youth Female condition and Male condition (see Table 2). Accordingly, we report our main results comparing the two manipulated targets (LGBTQI+ vs. Black). Thus, independent Samples *t*-tests were conducted to examine differences between scenarios on the main dependent variables. Cohen's d was used to determine the effect size following small (0.2), medium (0.5), and large (0.8) effect level recommendations.

To explore whether there were any significant differences in cyberbullying experience according to participants' gender identity, sexual orientation, socioeconomic status, and racial/ethnic identity, Brown-Forsythe Tests were performed because of the violation of the assumption of homogeneity of variance.

Table 2. *Differences between male vs. female victims for both the LGBTQI+ and Black targets (Study 1).*

Target group	Dependent variable	Female victims *M* (*SE*)	Male victims *M* (*SE*)	Mean difference
LGBTQI+	Helping intentions	3.32 (0.08)	3.35 (0.08)	-0.04, 95% CI [-0.34, 0.26], $p \approx 1.000$
	Empathy	2.88 (0.05)	2.81 (0.05)	0.07, 95% CI [-0.13, 0.26], $p \approx 1.000$
	Group norms	3.33 (0.05)	3.32 (0.05)	0.13, 95% CI [−0.18, 0.21], $p \approx 1.000$
	One-group	4.70 (0.10)	4.67 (0.10)	0.03, 95% CI [-0.34, 0.40], $p \approx 1.000$
	Dual-identity	3.68 (0.11)	3.66 (0.12)	0.03, 95% CI [-0.39, 0.44], $p \approx 1.000$
	Intergroup anxiety	2.20 (0.04)	2.13 (0.05)	0.08, 95% CI [-0.09, 0.25], $p \approx 1.000$
	Outgroup attitudes	66.61 (1.37)	68.79 (1.45)	-2.18, 95% CI [-7.44, 3.08], $p \approx 1.000$
Black youth	Helping intentions	3.94 (0.05)	3.98 (0.08)	-0.04, 95% CI [-0.30, 0.22], $p \approx 1.000$
	Empathy	3.32 (0.03)	3.32 (0.05)	0.00, 95% CI [-0.17, 0.17], $p \approx 1.000$
	Group norms	4.10 (0.03)	4.10 (0.05)	0.00, 95% CI [-0.16, 0.17], $p \approx 1.000$
	One-group	5.75 (0.06)	5.96 (0.10)	-0.21, 95% CI [-0.53, 0.11], $p = .504$
	Dual-identity	3.69 (0.07)	3.60 (0.12)	0.10, 95% CI [-0.27, 0.46], $p \approx 1.000$
	Intergroup anxiety	1.75 (0.03)	1.72 (0.05)	0.03, 95% CI [-0.12, 0.18], $p \approx 1.000$
	Outgroup attitudes	82.90 (0.91)	84.41 (1.49)	-1.51, 95% CI [-6.11, 3.10], $p \approx 1.000$

Results and Discussion

Descriptive findings are presented in Table 3. Means and zero-order correlations of measures are presented in Table 4.

Table 3. *Means and Standard Deviations of Cyberbullying Victimization by Gender Identity, Sexual Orientation, Socio-Economic Status, and Ethnic Identity/Background (Study 1).*

Gender identity	People who self-identified as Female	People who self-identified as Male	People who self-identified as Transgender and Gender Diverse	
	M	*M*	*M*	BF
	1.26b (0.61)	1.20a (0.61)	1.50b (0.95)	5.84**
Sexual orientation	Non-heterosexual		Heterosexual	
	M		*M*	BF
	1.47 (0.88)		1.19 (0.57)	43.91**
SES	Low socio-economic status		High socio-economic status	
	M		*M*	BF
	1.37 (0.77)		1.23 (0.63)	10.11**
Ethnic identity/background	Ethnic minority participants		Ethnic majority participants	
	M		*M*	BF
	1.34 (0.81)		1.24 (0.63)	3.94*

Note. $^{*}p < .05$, $^{**}p < .01$. Means with different subscripts in each column indicate differences at $p < .050$. We conducted Brown-Forsythe Tests due to the violation of the assumption of homogeneity of variance.

Table 4. *Means, Standard Deviations, and Correlations Between the Variables (Study 1).*

	M	*SD*	1	2	3	4	5	6	7	8
1. Helping intentions	3.69	1.58	—							
2. Empathy	3.13	1.03	.55**	—						
3. Group norms	3.78	1.07	.36**	.47**	—					
4. One-group	5.34	1.97	.23**	.30**	.38**	—				
5. Dual-identity	3.65	2.12	.09**	.10**	.05*	.15**	—			
6. Separate groups	2.39	1.85	−.16**	−.25**	−.36**	−.34**	.21**	—		
7. Intergroup anxiety	1.92	0.89	−.28**	−.40**	−.61**	−.38**	.03	.47**	—	
8. Outgroup attitudes	77.13	27.89	.33*	.45**	.61**	.35**	.03	−.41**	−.65**	—

Note. $^{*}p < .05$, $^{**}p < .01$.

Independent Samples *t*-tests were conducted to examine differences between the scenarios on the main dependent variables (Table 5). Results revealed differences between the two scenarios (cyberbullying episode targeting an LGBTQI+ vs. Black youth) on helping intentions, empathy, group norms, inclusive identities, outgroup attitudes, and intergroup anxiety. Participants showed fewer helping intentions in the scenario of cyberbullying with an LGBTQI+ youth target than in the scenario of cyberbullying with a Black youth target. Empathy was lower among participants in the scenario of cyberbullying with an LGBTQI+ youth target than in the scenario of cyberbullying with a Black youth target. Participants showed fewer positive group norms in the scenario of cyberbullying with an LGBTQI+ youth target, than in the scenario of cyberbullying with a Black youth target. Participants also revealed fewer inclusive identities (one-group) in the scenario of cyberbullying with an LGBTQI+ youth target than in the scenario of cyberbullying with a Black youth target. Participants showed fewer positive outgroup attitudes following the scenario of cyberbullying with an LGBTQI+ youth target than the scenario of cyberbullying with a Black youth target. Finally, intergroup anxiety was greater among participants in the scenario of cyberbullying with an LGBTQI+ youth target than in the scenario of cyberbullying with a Black youth target.

Table 5. *Mean Differences Between the Scenarios (Study 1).*

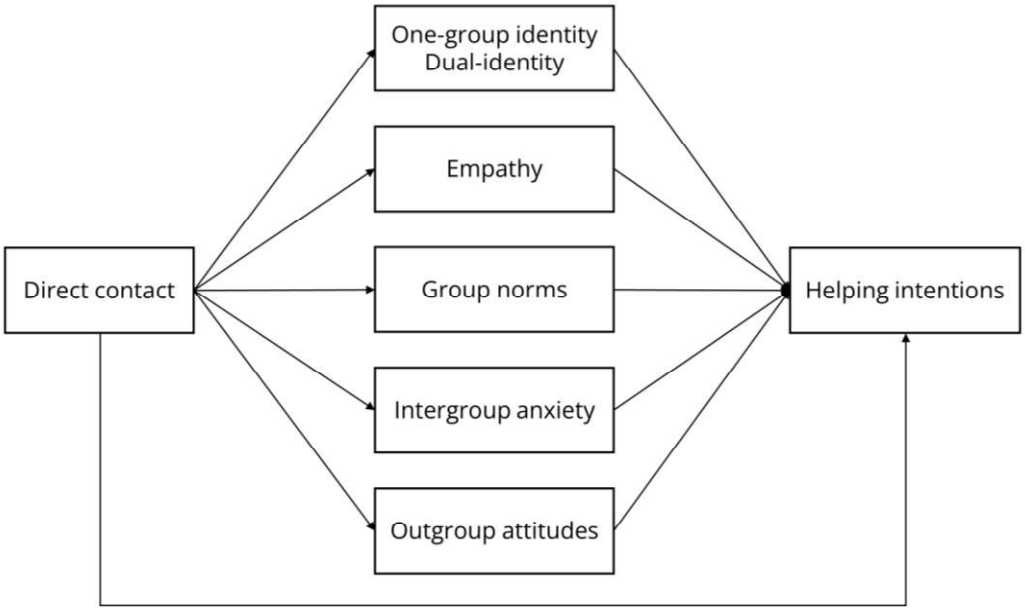
			LGBTQI+ youth		Black youth		
Dependent variables	*t*	Cohen's *d*	*M*	*SD*	*M*	*SD*	*p*
Helping intentions	8.86	.39	3.33	1.61	3.93	1.51	< .001
Empathy	10.42	.47	2.85	1.12	3.32	0.92	< .001
Group norms	16.83	.82	3.27	1.18	4.09	0.87	< .001
One-group	12.65	.60	4.65	2.10	5.78	1.76	< .001
Intergroup anxiety	−10.70	−.52	2.20	1.02	1.75	0.75	< .001
Outgroup attitudes	11.60	.58	67.41	32.51	83.08	22.69	< .001

Overall, the results are in line with previous social network research (Sterner & Felmlee, 2019), showing that bystanders' responses to cyberbullying episodes varied depending on the specific target of the bullying presented in the scenarios. Bystanders who observed a scenario of cyberbullying targeting an LGBTQI+ youth revealed more negative intergroup responses compared to those who observed an episode of cyberbullying targeting a Black youth. These results are further discussed in the General Discussion.

Study 2

The main goal of Study 2 was to explore, for the first time, one strategy that may improve helping intentions among bystanders in bias-based cyberbullying incidents. Specifically, this study explored if having LGBTQI+ and Black friends (i.e., high quality intergroup contact) is associated with greater endorsement of inclusive identity representations (i.e., one-group identity and dual-identity), more empathy, positive group norms, and outgroup attitudes, and less intergroup anxiety, thereby increasing bystanders helping intentions in a cyberbullying context. These theoretical predictions were tested across two target groups: LGBTQI+ and Black youth, assuring that our results are not driven by some singularities of one group alone. The model we tested is depicted in Figure 1.

Figure 1. *Proposed Theoretical Model.*



Based on the previous research, we expected that higher rates of high quality intergroup contact with LGBTQI+ and Black people would be associated with more intentions to help, via increased inclusive identity representations, increased empathy, increased positive group norms, decreased intergroup anxiety, and increased outgroup attitudes (H1a and H1b, for each outgroup).

Methods

Participants and Procedure

Participants were 2,254 Portuguese youth and emerging adults (55% female, 40% male, 5% transgender and gender diverse), aged between 15 and 32 (*M* = 17.3, *SD* = 2.63). Approximately 80% of the participants were in high school (10th to 12th years), 16% were in college/university, 2% were in middle school (7th to 9th years), and 2% were out of school. One thousand, seven hundred and ninety-two participants identified as heterosexual, 292 as LGBTQI+ (lesbian, gay, bisexual, trans, queer, and intersex, among other minority sexual identities), and the remaining did not answer or had doubts as to their sexual orientation. Most participants identified as White person/White Portuguese/of European origin (86.2%), 4% as Black person/Black Portuguese/afro-descendant/of African origin, and the remaining as Asian person/Portuguese person of Asian origin/of Asian origin, Roma person/ Portuguese Roma/ Roma/ of Roma origin, other origin, or mixed origin. Regarding participants' household income, 16.6% revealed having a low income and 83.4% considered their household income allowed them to live comfortably. Because this study focused on LGBTQI+ and Black people as the relevant outgroup targets, we did not include participants who self-identified as LGBTQI+ when the target of cyberbullying was an LGBTQI+ youth, and participants who identified as a Black person/Black Portuguese/afro-descendant/of African origin or other racial/ethnic minority identity were not included when the target was a Black youth. The procedure and materials were the same as used in Study 1: participants were randomly allocated to one of two scenarios of cyberbullying: LGBTQI+ target vs Black target. The final sample involved 855 heterosexual participants (52% identified as female) when in the LGBTQI+ target scenario, and 1,269 White person/White Portuguese/of European origin when in the Black target scenario (56% identified as female). The sample size was based on the criteria defined by the funding entity and data was collected through random sampling methods (November 2022–February 2023). A sensitivity power analysis indicated that the final sample size was adequate to detect small effects with a power over .90 for logistic regression analyses (*z* tests; Fritz & MacKinnon, 2007).

All youth who participated in the study had to provide prior informed consent, and before participating they were informed that their participation was voluntary and anonymous. After completing the survey, participants were debriefed and thanked for their participation.

Measures

Bystanders' helping intentions ($\alpha_{Blacktarget}$ = .84; $\alpha_{LGBTQI+target}$ = .85; α_{total} = .85), empathy ($\alpha_{Blacktarget}$ = .87; $\alpha_{LGBTQI+target}$ = .92; α_{total} = .90), inclusive identity representations, group norms ($\alpha_{Blacktarget}$ = .88; $\alpha_{LGBTQI+target}$ = .89; α_{total} = .90), intergroup anxiety ($\alpha_{Blacktarget}$ = .79; $\alpha_{LGBTQI+target}$ = .81; α_{total} = .81), and outgroup attitudes were assessed with the same measures used in Study 1. To assess high quality contact, we adapted 2 items from previous research (Stathi et al., 2020). Participants were asked to indicate how many outgroup members (depending on the target of the scenario: LGBTQI+ or Black target) they had as friends, on a 5-point scale: *0, 1, 2–5, 6–10, >10* and how often did they spend time with their outgroup friends ($r_{Blacktarget}$ = .49; $r_{LGBTQI+target}$ = .61).

Data Analysis

SPSS 28.0 was utilized to perform descriptive statistics (i.e., mean, and standard deviation of the main variables) and Pearson's correlation analysis between the variables of interest. We performed mediation analysis using IBM SPSS 28.0 PROCESS bootstrapping macro (Model 4) to examine the hypothesized model. Mediation effect analyses were carried out by using the bootstrapping method with 95% bias-corrected confidence intervals and 5,000 bootstrapped samples.

Results and Discussion

Descriptive findings and correlations are presented in Table 6.

Table 6. *Means, Standard Deviations, and Correlations Between the Variables (Study 2).*

	M	*SD*	1	2	3	4	5	6	7	8
LGBTQI+ youth as target (*N* = 855)										
1. High-quality contact	2.83	1.25	—							
2. One-group	4.65	2.04	.23**	—						
3. Dual-identity	3.73	2.02	.12**	.28**	—					
4. Empathy	2.86	1.10	.40**	.31**	.12**	—				
5. Group norms	3.35	1.13	.48**	.30**	.13**	.49**	—			
6. Intergroup anxiety	2.10	0.91	−.47**	−.37**	−.12**	−.48**	−.60**	—		
7. Outgroup attitudes	70.42	29.28	.52**	.30**	.12**	.55**	.63**	−.69**	—	
8. Helping intentions	3.27	1.54	.30**	.21**	.13**	.52**	.32**	−.27**	.38**	—
Black youth as target (*N* = 1,269)										
1. High-quality contact	3.07	1.14	—							
2. One-group	5.83	1.73	.09**	—						
3. Dual-identity	3.64	2.19	−.00	−.02	—					
4. Empathy	3.25	0.90	.13**	.16**	.01	—				
5. Group norms	4.08	0.89	.18**	.24**	−.05	.27**	—			
6. Intergroup anxiety	1.73	0.72	−.18**	−.24**	.12**	−.24**	−.47**	—		
7. Outgroup attitudes	83.17	22.45	.23**	.21**	−.07*	.23**	.42**	−.56**	—	
8. Helping intentions	3.95	1.51	.09**	.18**	.00	.39**	.24**	−.21**	.18**	—

Note. *$p < .05$, **$p < .01$.

We used PROCESS bootstrapping macro to test our mediation models (Model 4; Hayes, 2013). High-quality contact was entered as the predictor, one-group and dual-identity, empathy, intergroup anxiety, group norms, and outgroup attitudes as the mediators, bystanders' helping intentions as the outcome, and gender and age entered as covariates.

Mediation Analyses: Cyberbullying Targeting an LGBTQI+ Youth

The indirect effect of high-quality contact (predictor) on bystander helping intentions (outcome) through the potential mediators was tested with PROCESS bootstrapping macro. Table 7 reports the results of the bootstrapping analyses. Results revealed that high quality contact was positively related to empathy, that is, the more youth had LGBTQI+ friends, the more empathy they reported toward the victim of the cyberbullying episode. Contact was also positively related to outgroup attitudes, that is, the more youth had LGBTQI+ friends, the more positive attitudes they have toward LGBTQI+ people. Similarly, contact was positively associated with dual-identity representations, that is the more youth had LGBTQI+ friends, the more they felt heterosexual and LGBTQI+ people as having a dual-identity (two subgroups from the same team). Empathy, outgroup attitudes, and dual-identity were then positively associated with helping intentions. The positive indirect effects of high-quality contact on helping intentions through empathy, outgroup attitudes and dual-identity were significant. Contact was also negatively related to intergroup anxiety, that is, the more youth had LGBTQI+ friends, the less intergroup anxiety they reported toward meeting a LGBTQI+ person. In sum, high quality contact was indirectly and positively related to helping intentions toward a LGBTQI+ youth victim of cyberbullying through increased empathy: b = 0.13, 95% CI [0.09, 0.18], outgroup attitudes: b = 0.06, 95% CI [0.02, 0.11], and dual-identity: b = 0.01, 95% CI [0.00, 0.01]. Contact was also indirectly and positively related to helping intentions via decreased intergroup anxiety: b = −0.06, 95% CI [−0.10, −0.02]. These findings partially support H1a (significant effects did not emerge group norms).

Table 7. *High Quality Contact Indirect Effects on Helping Intentions: LGBTQI+ Youth as Target (Study 2).*

	M (empathy)			*M* (one-group)			*M* (dual-identity)			*M* (intergroup anxiety)			*M* (group norms)			*M* (outgroup attitudes)			Y (Helping intentions)		
	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*
Constant	2.54**	0.29	.000	5.15**	0.63	.000	3.25**	0.65	.000	2.53**	0.24	.000	2.98**	0.30	.000	59.67**	7.63	.000	2.89**	0.56	.000
(X) Contact	0.23**	0.03	.000	0.27**	0.07	.000	0.18*	0.07	.010	−0.26**	0.03	.000	0.36**	0.03	.000	9.20**	0.80	.000	0.06	0.05	.184
(cov) Gender	−0.66**	0.07	.000	−0.60**	0.16	.000	−0.19	0.17	.257	0.53**	0.06	.000	−0.49**	0.08	.000	−19.95**	1.96	.000	−0.41**	0.11	.000
(cov) Age	0.03*	0.01	.012	−0.02	0.03	.547	0.01	0.03	.661	−0.03*	0.01	.007	0.01	0.01	.696	0.79*	0.36	.031	−0.12**	0.02	.000
M (empathy)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60**	0.06	.000
M (one-group)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.03	.367
M (dual-identity)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05*	0.02	.045
M (intergroup anxiety)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.17*	0.08	.037
M (group norms)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.06	.533
M (outgroup attitudes)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01*	0.00	.016
	R^2 = .253			R^2 = .066			R^2 = .018			R^2 = .309			R^2 = .273			R^2 =.363			R^2 = .339		
	F(3,656) = 74.183, *p* < .001			*F*(3,656) = 15.502, *p* < .001			*F*(3,656) = 3.985, *p* = .008			*F*(3,656) = 97.657, *p* < .001			*F*(3,656) = 82.192, *p* < .001			*F*(3,656) = 124.767, *p* < .001			*F*(9,650) = 36.988, *p* < .001		

Note. *p < .05, **p < .01. The values are unstandardized regression coefficient.

Mediation Analyses: Cyberbullying Targeting a Black Youth

The indirect effect of high-quality contact (predictor) on bystander helping intentions (outcome) through the potential mediators was tested with PROCESS bootstrapping macro. Table 8 reports the results of the bootstrapping analyses. Results revealed that high quality contact was positively related to empathy, that is, the more youth had Black friends, the more empathy they reported toward the victim of cyberbullying. Contact was positively related to group norms, that is, the more youth had Black friends, the more they believed their best friends, friends in general, family, teachers, larger society, found it positive to have Black friends. Contact was also positively related to one-group identity, that is, the more youth had Black friends, the more they thought of White and Black people as part of the same more inclusive ingroup. Empathy, group norms and one-group identity were positively associated with helping intentions. The positive indirect effect of high-quality contact on helping intentions through empathy, group norms and one-group identity was significant. Specifically, high-quality contact was indirectly and positively related to helping intentions toward a Black youth victim of cyberbullying through increased empathy: b = 0.07, 95% CI [0.04, 0.10], group norms: b = 0.02, 95% CI [0.00, 0.04] and one-group identity: b = 0.01, 95% CI [0.00, 0.02]. These findings partially support H1b (significant effects did not emerge for intergroup anxiety and outgroup attitudes).

In sum, these findings provide important insights into the mechanisms through which high-quality contact is associated with helping intentions. The results highlight the significant role of empathy, group norms, one-group and dual identity, intergroup anxiety, and outgroup attitudes as mediators in this relationship. These findings support and extend previous intergroup contact research by showing the importance of interventions that focus on intergroup contact to promote more assertive and empathic bystanders in the online context (e.g., Abbott & Cameron, 2014).

Table 8. *High Quality Contact Indirect Effects on Helping Intentions: Black Youth as Target (Study 2).*

	M (empathy)			*M* (one-group)			*M* (dual-identity)			*M* (intergroup anxiety)			*M* (group norms)			*M* (outgroup attitudes)			Y (Helping intentions)		
	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*
Constant	3.15**	0.22	.000	5.87**	0.20	.000	3.94**	0.59	.000	1.66**	0.18	.000	4.22**	0.22	.000	81.46**	5.68	.000	2.73**	0.55	.000
(X) Contact	0.13**	0.02	.000	0.11*	0.05	.017	−0.05	0.06	.392	−0.11**	0.02	.000	0.12**	0.02	.000	4.33**	0.59	.000	0.02	0.04	.529
(cov) Gender	−0.45**	0.05	.000	−0.30*	0.10	.006	0.08	0.14	.577	0.31**	0.04	.000	−0.29**	0.05	.000	−8.18**	1.37	.000	−0.16	0.09	.072
(cov) Age	0.02	0.01	.071	−0.04	0.02	.084	−0.02	0.03	.542	−0.00	0.01	.694	−0.01	0.01	.594	−0.01	0.27	.973	−0.09**	0.02	.000
M (empathy)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.58**	0.05	.000
M (one-group)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07*	0.03	.007
M (dual-identity)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.02	.482
M (intergroup anxiety)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	−0.06	0.07	.431
M (group norms)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15*	0.06	.012
M (outgroup attitudes)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	.579
	R^2 = .093			R^2 = .015			R^2 = .001			R^2 = .075			R^2 = .055			R^2 = .081			R^2 = .108		
	$F(3,1001) = 34.258$, $p < .001$			$F(3,1001) = 5.164$, $p = .002$			$F(3,1001) = 0.472$, $p = .702$			$F(3,1001) = 26.936$, $p < .001$			$F(3,1001) = 19.460$, $p < .001$			$F(3,1001) = 29.334$, $p < .001$			$F(9,995) = 29.043$, $p < .001$		

Note. *$p < .05$, **$p < .01$. The values are unstandardized regression coefficient.

General Discussion

The current studies aimed to extend knowledge of bystanders' intentions to defend victims, specifically by examining the impact and limits of high-quality contact on bystanders' helping intentions in response to cyberbullying in a significantly understudied intergroup context, online aggression towards LGBTQI+ youth. Two studies examined a) intentions of youth bystanders to cyberbullying towards different minority groups: LGBTQI+ and Black youth, and b) if high-quality contact was associated with more bystanders' helping intentions. Taken together, the results of the two studies provide evidence for the variability of bystanders' responses to cyberbullying episodes depending on the specific target of the bullying, and for the potential of high-quality contact to foster bystanders' helping intentions in cyberbullying incidents.

These studies' first major contribution is their focus on comparing bystander responses to cyberbullying incidents targeting different minority groups. The results revealed variations in responses depending on the specific target of the bullying. Bystanders who were exposed to a cyberbullying scenario targeting an LGBTQI+ youth had significantly lower behavioral intentions to help the victim as well as less empathy, less positive group norms, less inclusive identities, less positive attitudes, and more intergroup anxiety, compared to those who observed an episode of cyberbullying targeting a Black youth. Importantly, a very recent report from the European Union Agency for Fundamental Rights (2024) revealed that almost 75% of LGBTQI+ Portuguese students were victims of bullying in schools in 2023, which highlights the high level of stigma that this group suffers. Similarly, data from the Centro de Investigação e Estudos de Sociologia (ISCTE) shows that "institutional racism" exists in Portuguese schools, where most students of African descent get worse grades, are more likely to fail and are almost all sent to vocational education, while there is no data on the violence they are subjected to. Data from the European Values Survey further revealed that in 1990, the LGBTQI+ group was one of the groups characterized by their behavior (along with alcoholics and drug addicts), but since 1999 it has been relatively accepted, unlike the Roma group, which continues to be associated with groups perceived as deviant. These findings align with previous social network research, highlighting the importance of considering the specific target group when examining bystander responses (Sterner & Felmlee, 2019). Specifically, Sterner and Felmlee (2019) found that in the cases of race/ethnicity victimization, the most common response to cyberbullying was to defend the victim, while when individuals were involved in a conversation that included a cyber-aggressive message relating to sexual orientation, most remained out of the conflict online, remaining as uninvolved bystanders (Sterner & Felmlee, 2019). This suggests that when it comes to cyberbullying related to sexual orientation, defending the victim, or having more positive attitudes may be perceived as less socially accepted or may result in higher social risks. Indeed, previous research in face-to-face victimization, highlighted that intervening in homophobic bullying incidents may result in higher social risks than in a general bullying incident, considering the heterosexist norms and beliefs rooted in societies (Poteat & Vecho, 2015). Given that sexual orientation is not readily identifiable, any heterosexual person can be inaccurately classified as LGBTQI+, which may result in concerns, for some heterosexual individuals, of being misclassified as such (Buck, 2010). Thus, cyberbullying related to sexual orientation may target both sexual minority and heterosexual individuals, and helping a victim of this behavior can lead people to fear stigma and "contagion", and to run the risk of becoming the target (Pichardo, 2015). Therefore, more efforts are needed to address cyberbullying targeting LGBTQI+ youth and to promote empathy and positive attitudes among bystanders. Future studies could further explore what inhibits bystanders' intentions to help LGBTQI+ victims of cyberbullying (e.g., social contagion concerns).

The second contribution of these studies is their investigation of the role of intergroup contact in influencing bystanders' helping intentions in online bullying situations. Partially supportive of our hypotheses, Study 2 provided some first evidence for the potential of high-quality contact to foster bystanders' intentions of acting on behalf of the victims of bias-based cyberbullying. These findings not only support, but also extend previous research (Abbott & Cameron, 2014), by considering two intergroup contexts, and combining both outgroup attitudes and helping intentions of bystanders in the online context. Thus, intergroup contact may play a central role in improving intergroup relations in these contexts. Our results showed that high-quality contact was positively associated with helping intentions via enhanced empathy, outgroup attitudes, and dual-identity representations and reduced intergroup anxiety for cyberbullying targeting an LGBTQI+ youth, via enhanced empathy, one-group identity, and group norms for cyberbullying targeting a Black youth. This highlights that classic offline intergroup contact can be a promising tool for interventions to promote more assertive and empathic bystanders in the online context.

Contrary to our predictions, different underlying mechanisms accounted for the relationship between intergroup contact and helping intentions, depending on the target of cyberbullying (i.e., an LGBTQI+ or a Black youth). Specifically, for the LGBTQI+ target, empathy, intergroup anxiety, outgroup attitudes and dual-identity representations significantly mediated the effect of intergroup contact on bystander helping intentions, and for the Black youth as target the effect was mediated by empathy, one-group identity, and group norms. Previous studies have demonstrated a positive relationship between intergroup contact and empathy, and between empathy and helping intentions and defending behaviors in face-to-face bullying scenarios (Abbott & Cameron, 2014; Caravita et al., 2009). Thus, empathy is one of the underlying mechanisms through which intergroup contact improves intergroup behaviors (e.g., Dovidio et al., 2011) and bystander helping intentions in bias-based bullying (Abbott & Cameron, 2014). Consistent with these findings and extending them to the online context, we found that intergroup contact was related to higher empathy, and in turn, greater bystander helping intentions. Importantly, this study focused on state empathy during message processing (Shen, 2010). In our study, we assessed specifically participants' empathy toward the target of cyberbullying in the Instagram post.

Contrary to our predictions, group norms, intergroup anxiety and outgroup attitudes had differential mediating effects on our models. The positive effect of one-group and dual-identity was in line with our predictions and previous research exploring the relationship between intergroup contact and prejudice (Dovidio et al., 2017). This finding aligns with the idea that intergroup contact can foster a sense of common identity and can promote recategorization, which involves altering the conceptual representations of distinct groups, shifting from an "us" versus "them" mindset to a more embracing "we" perspective (Dovidio et al., 2009). This redirection leads to fostering more positive attitudes toward those who were once viewed as members of an outgroup (Dovidio et al., 2017). Bystanders who have experienced positive interactions with Black individuals may perceive a shared identity, leading them to feel a greater willingness to intervene when these groups are targeted by cyberbullying. In contrast, for the LGBTQI+ target, dual-identity emerged as a significant mediator, indicating that the simultaneous activation of a common identity and original subgroup identities worked for the LGBTQI+ target. Indeed, high-quality contact with LGBTQI+ individuals was also positively associated with one-group identity, but the relation between high-quality contact and helping intentions was not mediated by one-group identity. This is consistent with previous research supporting dual-identity representations in facilitating the generalization of intergroup contact effects (Gaertner et al., 2016) and for the positive relation between dual-identity and bystanders' helping behavioral intentions in homophobic bullying incidents (António et al., 2024). Thus, future studies could compare the relative efficacy of both types of common identity representations, considering the specificities of each group target of cyberbullying.

When the target was an LGBTQI+ youth, group norms did not mediate the effects of high-quality contact on helping intentions, while when the target was a Black youth, it did. This difference could be attributed to the unique social and cultural contexts surrounding each group. Bystanders' perceptions of group norms may be influenced by broader societal attitudes and prejudices related to specific minority groups. For instance, the group norm for contact with LGBTQI+ may be less well-established, or have more variation across different groups or communities, leading to a weaker mediating effect of group norms in promoting helping intentions. Our measures ask about best friends, friends in general, family, teachers, and larger society - so maybe there is more variation or the acceptability of contact with LGBTQI+ may be more diverse depending on the group, and so youths' perceptions of norms for this group may be less established. Similarly, the finding that group norms did not mediate helping intentions suggests that pro-social norms might be weaker or less internalized when it comes to supporting LGBTQI+ individuals. This may reduce the motivational power of group norms in encouraging bystander intervention, as peers may fear backlash or social consequences for supporting LGBTQI+ victims.

On the other hand, this study highlights the indirect effect of intergroup anxiety, in that higher levels of intergroup contact were associated with lower levels of intergroup anxiety, which in turn, was associated with higher intentions to help, but only for the LGBTQI+ target. First, these findings are in line with intergroup contact theory which proposes that intergroup anxiety should decrease as a function of positive intergroup contact (Pettigrew & Tropp, 2008). Secondly, they extend previous research by Mereish and Poteat (2014) on the relationship between intergroup anxiety and behaviors, suggesting that having contact with LGBTQI+ people might facilitate positive experiences that reduce intergroup anxiety, resulting in greater helping intentions. In contrast, intergroup anxiety did not emerge as a significant mediator for cyberbullying targeting a Black youth. This may imply that, in the context of racial dynamics, the influence of intergroup contact on bystanders' helping intentions was not strong enough to reduce intergroup anxiety. It is essential to recognize that the absence of a

significant mediating role for intergroup anxiety does not negate the importance of reducing anxiety in intergroup interactions. Instead, it underscores the complexity of intergroup relations, where different mechanisms might come into play depending on the specific context. Contagion theory suggests that individuals - especially adolescents - may fear being socially misclassified as belonging to a stigmatized group if they are perceived as supporting LGBTQI+ individuals (Buck et al., 2013). Previous work has demonstrated that even after controlling explicit negative attitudes toward homosexuality, social contagion concerns independently predict anxiety and avoidance in imagined, anticipated, and actual contact with LGBTQI+ individuals (Buck et al., 2013). This aligns with our findings, which indicate that intergroup anxiety serves as a crucial mechanism through which contact influences bystander behavior - but only in the LGBTQI+ context. One possible interpretation of these results is that higher levels of intergroup contact may be required for individuals to overcome the fear of being labeled as LGBTQI+ simply because they support an LGBTQI+ victim. This would explain why direct contact was associated with helping intentions through reduced intergroup anxiety, as greater exposure may normalize interactions with LGBTQI+ individuals, mitigating misclassification concerns. By contrast, in the case of Black youth, social contagion fears are less relevant. These findings highlight the importance of addressing both cognitive (attitudinal) and affective (anxiety-related) barriers to bystander intervention in bias-based cyberbullying. Future research should further explore how concerns about social misclassification shape bystanders' responses, particularly in adolescence, when peer reputation and social conformity pressures are heightened.

Finally, when the target was a Black youth, outgroup attitudes did not mediate the effects of high-quality contact on helping intentions. The historical and systemic racism that Black individuals face could be more deeply ingrained, making the impact of intergroup contact on helping intentions through outgroup attitudes less straightforward. These differential effects highlight the complex nature of bystander responses in online bullying incidents and suggest that the underlying mechanisms guiding bystander behavior may vary based on the characteristics of the targeted group. Therefore, other underlying mechanisms may account for the positive relationship between high-quality contact and bystander helping intentions, depending on the target of cyberbullying. Future studies could test this finding experimentally, as well as explore other potential mediators (e.g., desire for contact, social contagion concerns, intergroup threat). Also, exploring how intersectional identities of the targets (e.g., a Black LGBTQI+ youth) influence bystanders' perceptions and reactions could provide a more comprehensive understanding of the dynamics at play in cyberbullying incidents.

These non-significant findings highlight the contextual sensitivity of mediating factors in the relationship between intergroup contact and bystanders' helping intentions. Interventions should consider the unique dynamics of each targeted group and recognize that different factors may come to the forefront in different contexts. While empathy consistently emerges as a significant mediator, the role of other variables such as one-group identity and intergroup anxiety may be contingent on the specific characteristics of the targeted group and the nature of cyberbullying incidents. In sum, interpreting the non-significant mediations underscores the importance of a nuanced understanding of intergroup dynamics and the need for tailored interventions that account for the complexities of cyberbullying scenarios depending on the targets. Future research could delve deeper into the specific conditions under which these non-significant mediators might become more salient and explore their potential impact on bystanders' helping intentions in diverse intergroup contexts.

Practical Implications

The findings from both studies have several implications for future research and interventions. First, Study 1 highlights the importance of considering the specific target group when designing interventions to promote positive bystander responses in cyberbullying incidents. Different groups may elicit distinct responses from bystanders, and interventions should be designed to address the unique challenges faced by each targeted group. Future research could further explore the underlying reasons behind these variations in bystander responses and identify strategies to encourage positive interventions in cyberbullying incidents targeting diverse groups. For instance, previous research revealed that social contagion concerns (i.e., concerns that contact with stigmatized group members results in misclassification as an outgroup member; Buck et al., 2013) were associated with fewer bystanders' helping intentions in homophobic bullying incidents and may also be a significant barrier to bystanders helping intentions in cyberbullying incidents.

Second, Study 2 highlights the potential of intergroup contact as a mechanism for promoting positive bystander responses in online bullying situations. Building on the well-established intergroup contact theory, interventions

could be developed to facilitate meaningful and positive interactions between individuals from different backgrounds. Future research could explore how different forms of intergroup contact (e.g., face-to-face interactions, virtual interactions) impact bystanders' responses to cyberbullying incidents and evaluate the effectiveness of intergroup contact-based interventions in promoting positive bystander behavior in different intergroup contexts.

Overall, these studies contribute to our understanding of group dynamics in cyberbullying and the role of intergroup contact in influencing bystanders' intentions to help in digital spaces. By delving deeper into the mechanisms underlying bystander responses, we can develop more targeted and effective interventions to create a safer and more inclusive online environment for everyone.

Limitations and Future Research Directions

Despite the valuable contributions of these studies, some limitations should be acknowledged. Firstly, we recognize the potential limitations of the scenarios with Instagram posts presented in the studies, given that these were fabricated by the researchers. Future studies could present real episodes of cyberbullying, which would better capture the complexity and nuances of actual online bullying incidents. Future research could also consider manipulating or explicitly measuring participants' perceptions of bystander presence and identity to assess their influence on intervention intentions. Previous studies on face-to-face incidents suggest that bystanders are more likely to intervene depending on the number of bystanders and their gender identity (Levine & Crowther, 2008). If the same mechanisms apply to cyberbullying, then bystanders may be more inclined to act if they recognize supportive ingroup members among the audience. Secondly, the study focused on youth participants, but reactions to cyberbullying incidents may vary among different age groups. Examining younger participants' reactions (i.e., those under 15 years old) could provide insights into how age influences bystander responses and the effectiveness of intergroup contact interventions.

Given the digitalized world we live in, exploring the effectiveness of digital intergroup contact in reducing prejudice and increasing bystanders helping intentions could also be valuable. Future research could investigate the impact of diverse forms of digital intergroup contact (e.g., computer-mediated communication - online chats or online intergroup contact, for example in social network sites) on bystanders' attitudes and intentions to intervene in cyberbullying incidents, and could compare the effects of digital/online intergroup contact and face-to-face intergroup contact to understand how the medium of communication impacts the outcomes. To further understand the mechanisms underlying intergroup contact, future studies could also manipulate indirect forms of intergroup contact (e.g., vicarious contact – observing an ingroup member interacting with an outgroup member) to assess their potential influence on bystander responses in cyberbullying situations.

While the present study highlights the positive effects of intergroup contact in fostering bystander intervention, it is also important to acknowledge the potential role of negative intergroup contact in shaping attitudes and behaviors (e.g., Pettigrew et al., 2011). Research emphasizes that while positive contact can reduce prejudice, negative intergroup contact may reinforce prejudice (Paolini et al., 2024). Given that online interactions often lack nonverbal cues and can escalate into hostility more easily, cyberbullying itself can serve as a form of negative intergroup contact, potentially exacerbating intergroup tensions rather than reducing them. This suggests that bystanders who have previously experienced negative interactions with the victim's group may be less inclined to intervene or even side with the perpetrator. Future research could explore how negative contact influences bystander responses, whether prior negative experiences moderate the effects of positive contact, and how interventions can be designed to mitigate the adverse effects of such experiences. Examining structured online interactions that emphasize constructive dialogue, and positive exposure may provide insights into counteracting the detrimental effects of negative contact in digital spaces.

Finally, the studies focused on LGBTQI+ and Black youth as target groups, but attitudes and responses toward other minority groups may differ significantly. Including scenarios with other ethnic minority potential targets of cyberbullying (e.g., Roma youth) could expand the understanding of group dynamics in online bullying and inform more inclusive interventions. For instance, in Portugal, recent data from the European Union Agency for Fundamental Rights (2023), including 568 participants, revealed that almost a quarter of Roma children experienced hate-motivated bullying/harassment due to being Roma while in school in the past 12 months, according to their parents/guardians. Future research could include scenarios with other ethnic minority potential targets of cyberbullying (e.g., Roma youth) to examine bystanders' attitudes and behavioral intentions toward this group, thereby expanding the understanding of group dynamics in online bullying. Exploring the

intersectionality of identities within target groups could also offer a deeper understanding of how multiple social identities influence bystander responses and attitudes in cyberbullying incidents.

In conclusion, despite these limitations, this paper sheds light on the group dynamics of cyberbullying and the role of bystanders in mitigating this issue. By comparing responses to cyberbullying incidents targeting different minority groups and examining the role of intergroup contact, this work provides valuable insights for understanding and addressing cyberbullying in the online realm. The findings highlight the need for targeted interventions and illustrate, for the first time, the potential of intergroup contact to foster positive bystander behavior in online bullying situations. Future research and interventions can build upon these findings to create safer and more inclusive online environments.

Footnote

[1] Participants age range was determined based on the funding agency.

Conflict of Interest

The authors have no conflicts of interest to declare.

Use of AI Services

The authors declare they have used AI services, specifically chatgpt and DeepL, for grammar correction and minor style refinements. They carefully reviewed all suggestions from these services to ensure the original meaning and factual accuracy were preserved.

Authors' Contribution

Raquel António: conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, project administration, supervision, validation, writing—original draft. **Rita Guerra:** methodology, validation, writing—review & editing. **Lindsey Cameron:** writing—review & editing. **Carla Moleiro:** writing—review & editing.

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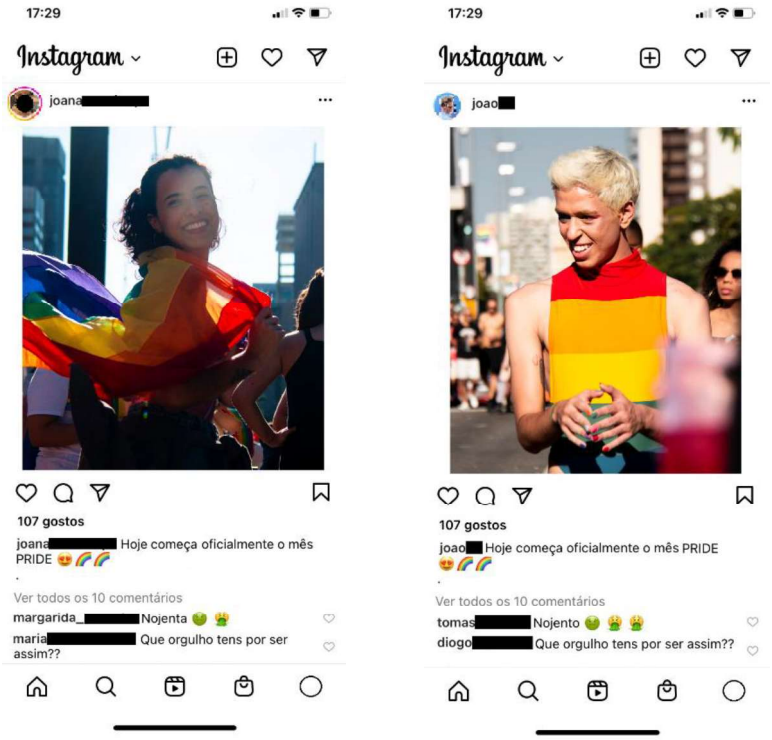
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Appendix

Stimuli Material: LGBTQI+ Target



Translated captions and comments:

joana: PRIDE month officially begins today

margarida: disgusting

maria: how proud are you to be like this?

joao: PRIDE month officially begins today

tomas: disgusting

diogo: how proud are you to be like this?

Stimuli Material: Black Target



Translated comments:

tomas: go back to where you came from

diogo: scrub yourself, you're too dark

margarida: go back to where you came from

maria: scrub yourself, you're too dark

About Authors

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