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EMPIRICAL ARTICLE

The influence of hate speech on adolescents' bystander intention and TNB aggression

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Abstract

Although the visibility of trans and non-binary (TNB) individuals has increased in recent years, gender identity-based discrimination remains a significant social issue. However, there is an important gap in the research examining the mechanisms involved in TNB aggression. This study longitudinally analyzed the relationship between exposure to hate speech across different contexts and bystander intentions and aggression toward TNB individuals. Additionally, gender invariance was tested. A total of 755 adolescents aged 14 to 18 years (M_{age} = 16.28; SD = 0.88; 50.8% identified as girls, 48.7% as boys, and 0.3% as non-binary) completed measures assessing exposure to hate speech in several contexts, behavioral intentions when witnessing aggression, and TNB aggression at baseline. Behavioral intentions and aggression were assessed again three months later. Cross-sectional results indicated that hate speech in all contexts was associated with higher levels of aggression, with small to moderate effects. Longitudinal analyses showed that only hate speech among friends predicted aggression, with small effects. Regarding bystander intentions, none of the hate speech contexts were associated with bystander intentions either cross-sectionally or longitudinally, except for hate speech among friends, which predicted higher helping intentions with small effects. Furthermore, a bidirectional relationship was observed between bystander intentions and aggressive behaviors with small to moderate effects. Finally, the model was invariant across gender. Overall, these findings highlight the need to address adolescents' exposure to hate speech and to develop preventive strategies to reduce violence against TNB individuals, focusing on the bystander's role to promote safer and more inclusive adolescent environments.

KEYWORDS
adolescence, aggression, bystander intentions, hate speech, trans and non-binary

INTRODUCTION

Although visibility, public awareness, and recognition of the rights of trans and non-binary (TNB) individuals have increased in recent years, discrimination based on gender identity remains a significant social issue (Nogueira et al., 2022). Currently, gender identity is understood as each person's internal and individual perception of their own gender, regardless of the gender assigned at birth (APA, 2015). In this sense, trans and/or non-binary individuals are those whose gender identity differs from the one assigned at birth. Trans identities can be either binary—male or female—or non-binary. Specifically, individuals who identify under the umbrella term "non-binary" represent a broad and diverse category that encompasses multiple identities that do not conform to the traditional binary concept of gender. For example, some individuals do not identify with any specific gender, identify with both genders, or with a third gender (Richards et al., 2016).

According to Minority Stress Theory (Brooks, 1981; Meyer, 2003, 2015), individuals with non-normative gender identities (i.e., TNB individuals) constitute a minority (Testa et al., 2015). These individuals challenge traditional conceptions of gender and deviate from the social norms established

based on the gender assigned at birth. As a result, they are particularly exposed to the dynamics of stigmatization and marginalization (Domínguez-Martínez et al., 2023; Ybarra et al., 2022) as well as to experiencing aggression from early adolescence (Espelage et al., 2018). In fact, a recent report by the Federación Estatal LGTBI+ in Spain highlighted the persistence of violence and discrimination against the TNB population. In 2024, 37.80% of TNB individuals reported having experienced discrimination, 35.60% reported harassment, and 26.70% stated that they had been physically or sexually assaulted (FELGTBI+, 2024). Moreover, experiencing transphobic aggression has a direct impact on the mental health and psychosocial adjustment of these individuals, being associated with higher levels of depression, anxiety, suicidal ideation, and attempts (Calvete et al., 2025; Di Fini et al., 2025; Price-Feeney et al., 2020; Ramos & Marr, 2023).

Hate speech as a potential predictor of aggressive behavior

One of the most influential theoretical frameworks for explaining the perpetration of aggressive behaviors is the General Aggression Model (GAM; Bushman & Anderson, 2002). This model suggests that both personal and situational factors influence cognitive and emotional processes—such as behavioral intentions—which, in turn, lead to aggressive behavior. One of the main situational factors included in the GAM is exposure to violence (Bushman & Anderson, 2002; Dragone et al., 2024), which can take the form of exposure to hate speech (Pluta et al., 2023). Hate speech is defined as any behavior manifested through derogatory expressions (e.g., words, text messages, images, etc.) that are directed, either directly or indirectly, at individuals based on assigned group characteristics (e.g., nationality, gender identity, sexual orientation, religion) (Kansok-Dusche et al., 2023). Thus, unlike other forms of violence, hate speech is characterized by not being directed at individuals in isolation, but rather by seeking to devalue and attack people simply because they belong to a particular social, ethnic, racial, or religious group (Hawdon et al., 2016).

Furthermore, a recent systematic review indicated that adolescence is one of the stages with the highest levels of exposure to hate speech, targeting different minority groups (Kansok-Dusche et al., 2023). For example, a study conducted in seven countries reported online hate speech exposure rates ranging from 31.4% to 68.5%, with Spanish adolescents reporting the highest rate (Wachs et al., 2019). In another study, 67% of adolescents reported having witnessed such incidents at school (Castellanos et al., 2023). Despite these high prevalence rates, the literature on this phenomenon remains limited. The available findings suggest that hate speech is associated with higher levels of prejudice (Bilewicz & Soral, 2020; Soral et al., 2018) and aggressive behaviors toward minority groups (Wachs et al., 2022; Wachs & Wright, 2018). In this regard, and in line with the epidemic model of hate speech (Bilewicz & Soral, 2020), repeated exposure to hate speech increases the likelihood of using derogatory language and engaging in broader forms of outgroup discrimination. Moreover, previous research suggests that hate speech related to sexual and gender identity shares a common ideological framework rooted in cisheteronormative beliefs about gender and sexuality, and that these forms of hate speech are highly interrelated and correlated with one another, thereby increasing prejudice toward identities and expressions that fall outside the cisheteronormative framework (Norton & Herek, 2013; Worthen, 2016).

The influence of hate speech on bystanders' behavior

Aggressive dynamics involve not only those who perpetrate or directly experience violence but also those who witness it. The literature on bullying and cyberbullying has highlighted that bystanders play a crucial role, as they may reinforce violence, remain passive, or intervene in the defense of the victim (González-Cabrera et al., 2019; Orue et al., 2023; Wachs et al., 2024). In this regard, several studies have begun to examine how exposure to violent situations influences bystanders' intentions, showing that exposure to hate speech is associated with lower levels of empathy and a decrease in prosocial behaviors toward victims (Pluta et al., 2023). Moreover, it has been observed that even brief or subliminal exposure can significantly influence the attitudes and behaviors of those who witness it. For instance, Fasoli et al. (2016) found that subliminal exposure to hate speech (e.g., homophobic slurs) predicted negative reactions toward homosexual individuals. Similarly, exposure to insults directed at homosexual individuals, refugees, or members of ethnic minorities increased dehumanization and social distancing while simultaneously reducing the intention to help or cooperate with them (e.g., Weber et al., 2020; Ziegele et al., 2018). However, most studies have focused on hate speech targeting sexual orientation or race. As a result, a gap remains in the literature regarding the effects of exposure to such discourse and its relationship with aggression, specifically targeting TNB individuals.

The role of gender when witnessing hate speech

Another important issue is the gender of individuals who witness hate speech. The results of previous studies have suggested that girls are more exposed than boys to hate speech in general, a trend observed both in digital settings (Castellanos et al., 2023; Wachs & Wright, 2018) and offline contexts (Castellanos et al., 2023). In addition, the literature indicates that boys exhibit externalizing behaviors more frequently (Gomes et al., 2022) as well as higher levels of transphobic attitudes (Nagoshi et al., 2008; Orue et al., 2021). Finally, to the best of our knowledge, no studies have directly examined gender differences in helping intentions toward TNB individuals. However, previous research on bystander

JOURNAL OF Research on Adolescence

roles in bullying has suggested that girls tend to engage more frequently in helping behaviors (Tamm & Tulviste, 2014), whereas boys are more likely to adopt a passive role (Pozzoli & Gini, 2012).

Likewise, there is a significant gap regarding gender differences in the role that hate speech plays in aggression and intentions directed toward TNB individuals. However, this has been examined in relation to other forms of violence, with mixed results. Some studies, for example, have found that the relationship between exposure to family violence and child-to-parent violence is similar for boys and girls (Gámez-Guadix & Calvete, 2012), whereas the relationship between exposure to family violence and general aggression is stronger among girls (Calvete & Orue, 2013). One study found that exposure to homophobic language at home predicted higher levels of homophobic bullying only in girls (Orue et al., 2018). Taken together, these findings suggest that gender differences in the effects of exposure to violence depend on the type of violence being examined.

The current study

The high rates of aggression and discrimination experienced by TNB individuals highlight the need to identify the factors that may contribute to these behaviors. Although numerous studies have applied the GAM framework to explain the role of exposure to violence in predicting future aggression, to the best of our knowledge, no research has specifically addressed this phenomenon in the context of aggression toward TNB individuals. Moreover, the role of bystanders is crucial, as their reactions can promote the defense of the victim by providing support or stopping aggression through direct confrontation with the perpetrator (González-Cabrera et al., 2019; Orue et al., 2023). Therefore, it is also necessary to identify factors, such as exposure to hate speech, that may predict bystanders' helping intentions. Although this phenomenon has been examined in other contexts (e.g., Fasoli et al., 2016; Pluta et al., 2023; Weber et al., 2020), a gap remains. Specifically, little is known about bystander behaviors and aggression toward TNB individuals, as well as the potential influence of exposure to hate speech across different contexts (family, friends and peer groups, and social media).

Therefore, the primary objective of the present study is to longitudinally analyze the relationship between exposure to hate speech across different contexts (i.e., family, friends and peers, and social media) and bystander intentions and aggressive behavior toward TNB individuals. It was expected that exposure to hate speech across different contexts would predict lower helping intentions among bystanders and higher levels of aggressive behavior toward TNB individuals. Moreover, in line with the GAM, it was expected that the intentions of bystanders would predict aggressive behaviors against TNB individuals. Additionally, gender differences were examined across all study variables, and the invariance of the associations between variables across girls and boys was examined. Consistent with previous studies, it was expected that girls would report greater exposure to hate speech across all contexts (Castellanos et al., 2023; Wachs & Wright, 2018) and higher levels of helping intentions (Tamm & Tulviste, 2014). In contrast, boys were expected to show higher aggressive intentions and aggressive behavior toward TNB individuals (Gomes et al., 2022). Since gender differences in the relationships between exposure to hate speech, bystander intentions, and aggression toward TNB individuals have not been previously examined, this objective was exploratory in nature, and no hypotheses were established.

METHODS

Researchers' positionality

This research was conducted with a reflexive awareness of how the researchers' personal identities and experiences could influence the design of the study and the interpretation of its findings. Accordingly, at the time of writing the manuscript, the three authors identified as cisgender women.

Participants

In the first wave of data collection (W1), a total of 755 adolescents aged between 14 and 18 years ($M_{age} = 16.28$; $SD = 0.88$) from four educational institutions in northern Spain participated. Among them, 50.8% identified as girls, 48.7% as boys, and 0.3% as non-binary individuals. Three months later, 640 adolescents completed the second measurement wave (W2), resulting in a retention rate of 82.58%. According to the criteria of the National Institute of Statistics of Spain (Instituto Nacional de Estadística, 2011), the distribution of families' professions was as follows: restaurant and security service workers and salespeople (22.3%), scientific and intellectual professionals (20%), artisans and skilled workers in the manufacturing and construction industries (17.5%), accounting and administrative employees (8.8%), elementary occupations (7.6%), technicians and support professionals (5.2%), machinery operators (4.8%), directors and managers (2.8%), skilled agricultural, livestock, forestry, and fishery workers (0.9%), and military personnel (0.2%). Furthermore, 1.2% of the sample were retired, 2.3% were not working, and 6.4% of adolescents either did not respond to this question or provided insufficient information to be categorized.

Procedure

The schools were randomly selected from a broader list of educational institutions in Bizkaia and Cantabria

(two neighboring autonomous communities in northern Spain) to ensure a balanced representation of different socioeconomic groups. The school management teams were informed about the objectives of the study, and ultimately, four schools agreed to participate. Once the schools agreed to participate in the study, the adolescents and their families were informed about its objectives. Participation was voluntary and anonymous, and required the informed consent of both the adolescents and their mothers, fathers, or legal guardians. Only six parents refused to allow their children to participate in the study. All recruited participants agreed to participate and completed the questionnaires during school hours in the classroom across the two waves of the study, under teacher supervision and in the presence of a researcher. The researcher encouraged the participants to express any doubts to ensure a better understanding of the questions. Participants completed all questionnaires online via Qualtrics®, which took approximately 40–60 min. The Ethics Committee of the University of Deusto approved this study in 2024 (Ref. ETK-83/23-24).

Measures

Exposure to hate speech

Exposure to hate speech was assessed using an ad hoc questionnaire created specifically for this study, based on a previous study (Orue & Calvete, 2018). In the original study, exposure to hate speech in the family context based on sexual orientation was assessed using a single item. However, during adolescence, other contexts become more relevant, particularly peer groups (Dryburgh et al., 2022) and social media, which tend to be more prominent during this stage (Avci et al., 2025). Building on this approach, the present study expanded the assessment to include these two other social contexts relevant during adolescence (i.e., peers and social media). In addition, the target groups were expanded to also assess exposure to hate speech motivated by gender identity and gender expression. In line with the literature, different forms of hate speech directed at non-cisheteronormative individuals are highly interrelated and strongly correlated with one another (in the present study, $r > .80$). Accordingly, participants reported how often they had been exposed to hate speech across these contexts by answering the following questions: (1) "How often have you seen your mother, father, or relatives insult or make offensive comments?" (2) "How often have you seen people your age insult or make offensive comments?" and (3) "How often have you seen insults or offensive comments on social media?" The three questions were answered regarding three categories: (a) gay, lesbian, or bisexual people; (b) trans or non-binary people; and (c) people who behave or have an image that is different from what is expected of a man or woman. Therefore, participants answered three questions for each of the three target groups (i.e., gay, lesbian, bisexual, TNB, and gender-dissenting individuals), resulting in a total of nine different items. The questions were answered using a 5-point Likert scale ranging from 1 (*never*) to 5 (*daily*). Cronbach's α coefficients at W1 were as follows: hate speech from family = .90, hate speech from friends and peers = .89, and hate speech from social media = .95. Cronbach's α coefficients at W2 were as follows: hate speech from family = .90, hate speech from friends and peers = .91, and hate speech from social media = .95.

Bystander intentions

The intention to act when witnessing aggressive behavior based on gender identity was assessed using an ad hoc measure based on the Witnesses' Cyberbullying Intentions Questionnaire (Calvete et al., 2022; Larrucea-Iruretagoyena et al., 2026). The Witnesses' Cyberbullying Intentions Questionnaire originally assessed bystander intentions in cyberbullying contexts through four items administered after respondents read a scenario describing an online aggression situation. For the present study, this scenario was adapted to the context of aggression toward TNB individuals. In addition, given that the original scenario focused exclusively on online contexts, an additional item was included to assess participants' intentions to intervene in offline situations. This adaptation allowed the evaluation of bystander responses to TNB aggression in both online and offline contexts. The following scenario was presented to the participants, who were asked to evaluate their bystander intentions in response to TNB aggression: "Imagine you witness someone mocking a person for being trans, laughing, and making comments such as, 'You will never be a real woman.'" After reading the scenario, participants answered five items that evaluated possible courses of action to take in response to aggression. The items were: (1) "I would tell those making the comments that it's not funny and that they should stop"; (2) "I would show support or give some advice to the person being targeted"; (3) "I would tell an adult what is happening"; (4) "I would join in with the comments being made"; and (5) "If I saw a similar situation on social media, I would share the photos, messages, videos, etc." The first three items comprise the bystander helping intention subscale, as they assess the witness's intention to help the victim when observing aggression toward TNB individuals. The fourth and fifth items belong to the bystander aggressing intention subscale, which captures a witness's intention to behave aggressively when witnessing an act of aggression. The questionnaire was completed using a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The original validation study reported adequate psychometric properties (Larrucea-Iruretagoyena et al., 2026), and in this study, Cronbach's alpha coefficients at W1 were as follows: bystander helping intention = .80 and bystander aggression intention = .65. Cronbach's α coefficients at

JOURNAL OF Research on Adolescence

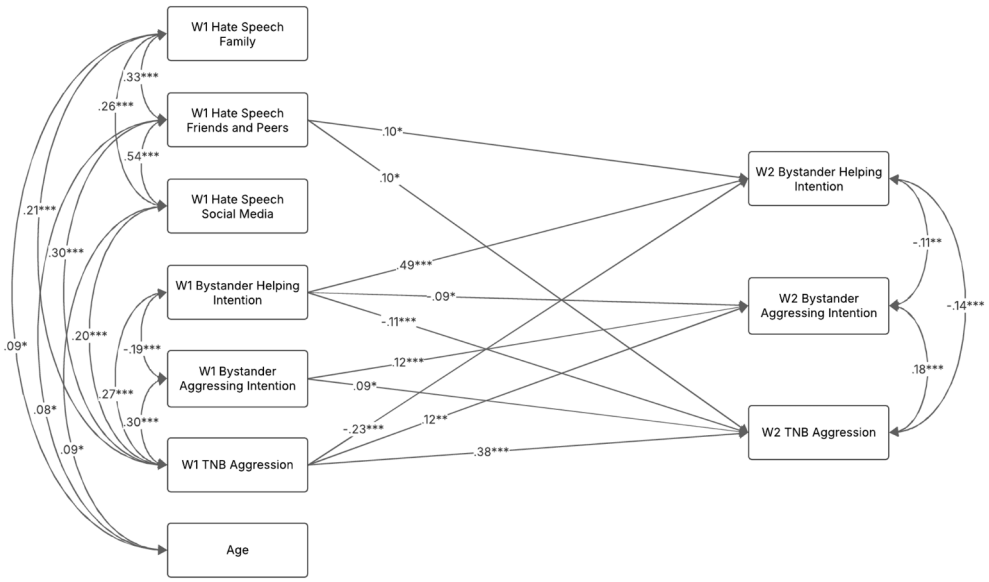

FIGURE 1 Predictive model. W1 = Wave 1; W2 = Wave 2. Values provided are standardized coefficients. *$p < .05$, **$p < .01$, ***$p < .001$.

W2 were as follows: bystander helping intention = .80 and bystander aggression intention = .79.

Gender identity-based aggression

Gender identity-based aggression was assessed using an adaptation of the Spanish version of the Transphobic Bullying Scale (Orue et al., 2023). In the present study, 14 items from the perpetration subscales of the original questionnaire assessing aggression toward trans girls and trans boys were retained, and seven additional items were included to assess aggression toward non-binary individuals. The final instrument comprised 21 items assessing the frequency with which participants have engaged in specific aggressive behaviors toward TNB individuals. Specifically, the measure includes seven distinct forms of aggressive behavior, each assessed separately in relation to three target groups: trans women, trans men, and non-binary individuals (e.g., "I spread negative rumors or gossip about a trans man"). Responses were recorded on a 5-point Likert scale ranging from 0 (*never in my life*) to 4 (*every day*). In the original Spanish validation, the perpetration subscales showed good to excellent internal consistency, with Cronbach's alpha coefficients of 0.78 and 0.84 for perpetration of bullying toward transgender boys and perpetration of bullying toward transgender girls, respectively. In this study, a total aggression score was computed, and Cronbach's alpha coefficients were .94 for W1 and .95 for W2.

Data analyses

An exploration of the variables showed that all were normally distributed, except for the gender identity-based aggression measures, which showed high kurtosis values (43.33 at W1 and 57.76 at W2). This was due to the fact that a large proportion of participants did not report engaging in aggression toward TNB individuals during the study period. To address this, outliers in the aggression variables were winsorized at 3 standard deviations above the mean (a total of 12 values were adjusted at W1 and 8 at W2). Winsorization was used to reduce the influence of extreme values without removing cases from the analysis. This approach helped preserve the sample size while minimizing distortions in the distribution of the variable. Subsequently, the TNB aggression variables were transformed using the square root, which resulted in a normal distribution.

IMB SPSS Statistics (Version 28) software was used to analyze the descriptive data and Pearson correlations between the study variables. In addition, *t*-tests were performed to examine gender differences in all study variables. Mplus 8.8 software was used to test the hypotheses of the study (Muthén & Muthén, 2021).

The hypothesized model (see Figure 1) included the following paths: (a) autoregressive paths between bystander helping intention, bystander aggressing intention, and TNB aggression at W1 and W2; and (b) cross-lagged predictive paths from hate speech at W1 (i.e., hate speech from family, friends, and social media contexts) to bystander helping intention at W2, bystander aggressing intention at W2 and TNB aggression at W2. Finally, given that the study included a wide age range (14–18 years), age was included in the model to control for its potential influence on the study variables.

Additionally, the model's invariance across genders was examined, excluding non-binary participants from this analysis. In the first step, all parameters were freely estimated within each group, and in the second step, a constrained model was tested in which all longitudinal paths were set equal between girls and boys.

The goodness of fit model was examined using the comparative fit index (CFI), Tucker–Lewis fit index (TLI), root

TABLE 1 Correlations, means, and standard deviations of variables.

	1	2	3	4	5	6	7	8	9	10
1. W1 hate speech—family	1									
2. W1 hate speech—friends and peers	.33***	1								
3. W1 hate speech—social media	.26***	.54***	1							
4. W1 bystander helping intention	−.03	−.03	−.02	1						
5. W1 bystander aggression intention	.03	.07	.01	−.19***	1					
6. W1 TNB aggression	.21***	.30***	.19***	−.27***	.30***	1				
7. W1 age	.08*	.07	.08*	.01	−.01	−.03	1			
8. W2 bystander helping intention	.00	.05	.03	.52***	−.17***	−.30	.04	1		
9. W2 bystander aggression intention	.02	.06	.02	−.13***	.17***	.17***	.02	−.19***	1	
10. W2 TNB aggression	.11***	.23***	.17***	−.22	.23***	.44***	−.11***	−.28***	.25***	1
Mean	1.63	3.13	3.16	3.84	1.50	0.13	16.28	3.80	1.44	0.11
SD	0.81	1.06	1.19	1.10	0.88	0.27	0.88	1.12	0.87	0.26

Note: W1 = Wave 1; W2 = Wave 2.

Abbreviation: TNB, trans and non-binary.

*$p < .05$. ***$p < .001$.

mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). According to Little (2024), RMSEA values in the range of 0.02–0.05 suggest a good model fit. CFI and TLI values of .95 or higher reflect a good fit. Finally, SRMR values lower than 0.08 indicate that the model adequately fits the data (Kline, 2016). The data that support the findings of this study are openly available in the Open Science Framework [https://osf.io/6wdhc/files].

The number of participants in the two waves of the study was as follows: 755 adolescents in W1 and 640 in W2. Little's missing completely at random (MCAR) test was conducted to evaluate missingness. The results of this test were statistically significant (χ^2 (39) = 99.331, $p = .000$), indicating that the data were not MCAR. Adolescents who did not complete the W2 measurement point scored lower on helping intentions ($t = -3.47$, $p = .001$, $d = 1.08$), and higher on aggressing intentions ($t = 2.50$, $p = .015$, $d = .88$) and TNB aggression ($t = -2.44$, $p = .008$, $d = .28$). In addition, those who did not complete the second wave were significantly older than the participants who completed both waves ($t = 2.48$, $p = .007$, $d = .87$). Therefore, multiple imputation (MI) was used to address the missing values. MI is used when the MCAR assumption is not met (Little et al., 2014), as it generates multiple plausible values for missing data. In this study, 100 imputed datasets were generated. Mplus performs MI of missing data using a Bayesian approach (Rubin, 1987; Schafer, 1997). Parameter estimates are obtained as the average across all analyses, whereas standard errors are calculated by combining the average of the standard errors from each analysis with the variability of the parameter estimates across analyses (Rubin, 1987; Schafer, 1997). All variables included in the analytical models were incorporated into the imputation process. In addition, age was included as an auxiliary variable, as participant age was associated with missingness.

RESULTS

Descriptive statistics and gender differences

Table 1 shows the descriptive statistics and correlation coefficients of all variables. It also presents their means and standard deviations. Differentiated contexts of exposure to hate speech were positively associated with each other and were not associated with helping intentions or with aggressing intentions at either time point. However, they were related to higher levels of aggression at W1 and W2. Bystander helping intentions were consistently and negatively related to aggressive intentions across both measurement waves. Bystander helping intentions were negatively associated with aggression at W1 but not at W2, whereas bystander aggressing intentions were positively associated with aggression at W1 and W2. Correlations between the same constructs across waves indicated temporal stability in helping intentions, aggressive intentions, and TNB aggression. Finally, age was positively associated with exposure to hate speech from family and social media at W1 and negatively with TNB aggression at W2. Table 2 presents the gender differences between individuals identified as girls and boys across the study variables. The results showed statistically significant differences in all variables except age. Girls reported higher levels of exposure to hate speech across all contexts at W1 and higher intentions to help in situations of aggression at both waves, whereas boys scored higher on intentions to aggress and aggressive behavior toward TNB individuals at both W1 and W2. Effect sizes, measured using Cohen's *d*

JOURNAL OF Research on Adolescence

TABLE 2 Gender differences in all study variables.

	Girls ($n = 384$)		Boys ($n = 368$)				
	Mean	*SD*	Mean	*SD*	*t*	*p*	Cohen's *d*
W1 hate speech—family	1.72	0.80	1.51	0.79	3.61	<.001	.80
W1 hate speech—friends and peers	3.25	0.97	3.00	1.13	3.28	.001	1.05
W1 hate speech—social media	3.30	1.09	3.00	1.26	3.44	<.001	1.18
W1 bystander helping intention	4.18	0.83	3.48	1.21	9.15	<.001	1.04
W1 bystander aggression intention	1.32	0.73	1.69	0.99	−5.65	<.001	0.87
W1 TNB aggression	0.07	0.19	0.18	0.32	−5.40	<.001	0.27
W1 age	16.29	0.87	16.28	0.89	0.09	.466	0.88
W2 bystander helping intention	4.14	0.92	3.38	1.20	8.62	<.001	1.05
W2 bystander aggression intention	1.25	0.65	1.67	1.04	−5.80	<.001	0.84
W2 TNB aggression	0.06	0.18	0.17	0.32	−5.10	<.001	0.25

Note: W1 = Wave 1; W2 = Wave 2.
Abbreviation: TNB, trans and non-binary.

statistic, were large across variables, with the exception of aggression at W1 and W2, which showed small effects.

Predictive model

The predictive model tested via path analysis demonstrated excellent fit indices: χ^2 (6, $n = 755$) = 10.650, $p = .788$, RMSEA = .032 (90% confidence interval [.000–.063]), CFI = .991, TLI = .954, and SRMR = .014. The model accounted for 34.7% of the variance in bystander helping intention at W2, 26.2% of the variance in TNB aggression at W2, and 6% of the variance in aggressing intention at W2.

Figure 1 displays the significant longitudinal autoregressive and cross-regressive coefficients of the model. The autoregressive paths were statistically significant, indicating stability over the 3-month follow-up. Regarding cross-regressive paths, exposure to hate speech from friends and peers predicted higher levels of helping intention and higher TNB aggression. Moreover, helping intention predicted lower levels of aggressing intention and lower TNB aggression. Bystander aggressing intention predicted higher TNB aggression, whereas TNB aggression predicted lower levels of bystander helping intention.

Gender differences in the predictive model

The above model was examined for invariance in girls and boys. The model was first estimated simultaneously for both subsamples, which showed adequate fit: χ^2 (12, $N = 752$) = 16.33, $p = .177$, RMSEA = .031 (90% confidence interval [.000, .065]), CFI = .990, TLI = .948, and SRMR = .019. Subsequently, a model was estimated in which all longitudinal paths were constrained to be equal across the two subsamples. The model yielded the following fit indices: χ^2(41, $N = 752$) = 50.71, $p = .142$, RMSEA = .025 (90% confidence interval [.000, .046]), CFI = .987, TLI = .975, and SRMR = .036. This did not represent a statistically significant increase in χ^2 ($\Delta\chi^2$[29] = 34.29, $p = .229$). Therefore, the model can be considered invariant across girls and boys.

DISCUSSION

Adolescence is a stage characterized by high prevalence rates of aggression toward TNB individuals (FELGTBI+, 2024; Nath et al., 2024); therefore, it is essential to understand the factors that may maintain or reinforce such aggression. The main objective of this study was to longitudinally analyze the relationship between exposure to hate speech across different social contexts and bystander intentions and aggressive behavior toward TNB individuals. In this way, the study contributes to filling an important gap in the literature by expanding the understanding of factors that may predict specific aggression dynamics toward TNB individuals.

First, in line with previous literature showing that repeated exposure to violent content is associated with an increase in aggressive behaviors (Bushman & Anderson, 2002; Dragone et al., 2024), the cross-sectional results of the present study showed that greater exposure to hate speech was associated with higher levels of aggression toward TNB individuals. Specifically, exposure to hate speech across all contexts (i.e., family, friends and peer group, and social media) was associated with higher levels of aggression at both measurement points. However, at the longitudinal level, only exposure to hate speech within the context of friends and peer groups predicted an increase in aggression levels. These findings highlight the central role of peer groups during adolescence, a developmental stage in which family influence decreases while friendships become increasingly important in shaping identity, attitudes, and behavior (De Goede et al., 2009; Dryburgh et al., 2022). Moreover, during adolescence, the need for belonging and the search for identity increase sensitivity to group norms (Laursen & Veenstra, 2021). As a result, hate

speech originating from peer groups may be perceived as socially acceptable, fostering the normalization of hostility and, consequently, an increase in aggressive behaviors.

While the results showed that exposure to hate speech was associated with higher levels of aggression toward TNB individuals, none of the hate speech contexts was cross-sectionally related to bystanders' intentions. However, contrary to expectations, at the longitudinal level, hate speech in the context of friendships predicted a slight increase in helping intentions toward TNB individuals. Given the relative absence of statistically significant relationships between exposure to hate speech and helping intentions in this study, this association should be interpreted with caution. One possible explanation for this significant, although weak, association is that exposure to hate speech within friendship contexts may also entail greater exposure to aggressive situations against TNB individuals. Such exposure may increase involvement in aggressive behaviors but may also, in some cases, heighten awareness of aggression and lead to a slight increase in bystander helping or intervention intentions. Moreover, helping intentions may depend on factors other than exposure to hate speech, such as the personal characteristics of the observers, including empathy or moral disengagement (Pöyhönen et al., 2010; Thornberg et al., 2020). Future studies should examine whether these variables moderate the relationship between exposure to hate speech and bystanders' intentions. Finally, another explanation is that this association could be the result of a suppression effect due to the inclusion of several related variables in the model.

Importantly, the results of the study revealed the existence of bidirectional relationships between bystander intentions and aggressive behavior toward TNB individuals over time. On the one hand, higher helping intentions predicted a reduction in aggressive behavior, whereas bystander intentions to aggress predicted an increase in aggressive behavior toward TNB individuals. This pattern is consistent with previous studies that found that intentions to aggress predicted higher levels of aggressive behavior (Alimoradi et al., 2022; Heirman & Walrave, 2012). On the other hand, the results indicated that the perpetration of aggressive behavior toward TNB individuals predicted lower helping intentions and higher intentions to aggress against them, reinforcing the notion of a bidirectional relationship between both processes. These results are consistent with the GAM (Allen et al., 2018; Bushman & Anderson, 2002). The model proposes a feedback process in which aggressive intentions increase the likelihood of aggressive behavior, which in turn reinforces and consolidates those intentions. From this model, the observed bidirectional relationships may also be influenced by socioemotional factors such as empathy (e.g., Barchia & Bussey, 2011) and moral disengagement (e.g., Thornberg et al., 2020), which shape both aggressive behaviors and bystander intentions. In this way, repeated involvement in aggressive behaviors may reduce empathic concern for TNB individuals (Falla et al., 2021) and facilitate moral disengagement processes (Thornberg et al., 2019), thereby reinforcing aggressive intentions over time. Conversely, higher levels of empathy may promote helping intentions (Barchia & Bussey, 2011) and inhibit aggressive responses (Dou & Zhang, 2025), potentially disrupting this feedback loop. Although these variables were not directly assessed in the present study, they may represent psychological mechanisms underlying the observed bidirectional relationship and should be examined in future research.

Regarding gender, significant differences were identified across all variables analyzed. In accordance with previous literature, girls were more exposed than boys to hate speech in all contexts (Castellanos et al., 2023; Wachs & Wright, 2018) and showed higher levels of helping intention in situations of aggression (Tamm & Tulviste, 2014). In contrast, boys scored higher on the intention to aggress and in aggressive behavior toward TNB individuals. Although no previous studies have specifically analyzed aggression directed toward TNB people, this pattern of results was consistent with research on more general externalizing behaviors in which boys tended to show higher levels of aggression (Gomes et al., 2022). The literature has consistently indicated that socialization processes operating from early ages through expectations, norms, and social practices differ by gender (Chavez-Dueñas & Adames, 2022). In this regard, gender socialization may foster the development of greater sensitivity among girls toward interpersonal relationships and the consequences of harmful behaviors (Cross & Madson, 1997; Suberviola Ovejas, 2020), in line with a pattern more oriented toward care and attention to others' needs. As a result, girls may be more likely to identify and recognize violent dynamics. This may increase both their perceived and reported exposure to hate speech and their intentions to help when witnessing aggression, while reducing aggressive behavior toward TNB individuals.

Furthermore, this study explored whether the associations of the model differed between girls and boys. The results of the present study indicated that exposure to hate speech was associated with both intention and aggressive behavior toward TNB individuals in an equivalent way for both girls and boys. These results differ from those found by Orue et al. (2018), who observed that exposure to homophobic language at home predicted higher levels of homophobic bullying only in girls. Nevertheless, they are in line with the results obtained by Calvete and Orue (2013), who did not find gender differences in the relationship between exposure to violence and general aggression.

LIMITATIONS, STRENGTHS, AND FUTURE RESEARCH

The present study has a number of limitations that can be addressed by future research. First, only two waves were considered; therefore, it would be advisable to conduct studies with additional follow-ups over time to examine the stability

of the associations among the variables. Second, all measures were based on self-report instruments. Although anonymity was guaranteed to encourage honest responses, the influence of social desirability or self-perception biases cannot be ruled out (Paulhus & Vazire, 2007). Future research should consider incorporating additional data sources that allow for a more accurate assessment of the study variables, such as peer reports. Third, the missing data were not completely random. Specifically, adolescents who did not complete W2 showed lower helping intentions and higher aggressive intentions and aggressive behaviors toward TNB individuals. This pattern is consistent with previous longitudinal research indicating that attrition is often selective and more frequent among participants with higher-risk profiles or less socially desirable characteristics (Asendorpf et al., 2014; Wolke et al., 2009). This selective attrition may have affected the representativeness of the final sample and potentially led to an underestimation of aggression-related outcomes. Nevertheless, this issue was addressed through MI, a method recommended for this type of data pattern (Little et al., 2014). Fourth, since age was associated with participant attrition between waves, it was included as a covariate in the analyses to minimize possible biases resulting from nonresponse. Fifth, a limitation of the present study is that potentially relevant variables that could act as mediators or moderators of the relationships examined were not included. Previous studies indicate that factors such as prejudice, moral disengagement, and contact with individuals belonging to minority groups play an important role in these dynamics (Dou et al., 2024; Orue & Calvete, 2018; Smith & Stathi, 2022). The inclusion of these variables in future studies would allow for a better understanding of the mechanisms underlying the results of the present study. Finally, the present study assessed the frequency of adolescents' exposure to hate speech during the previous three months. However, the duration of exposure was not examined. Future studies could extend these findings by incorporating measures of exposure duration, which would allow for a more precise understanding of the effects of hate speech exposure.

Despite some limitations, this study also has a number of strengths, such as a large sample of adolescents and a longitudinal design. In addition, the study introduces an innovative approach by assessing exposure to hate speech in different contexts (family, friends and peers, and social media). Finally, the study addresses a form of aggression that has been scarcely analyzed in the literature—aggression directed toward TNB individuals—which helps fill an important gap and expand knowledge about gender identity-based violence during adolescence.

CONCLUSIONS

The results of this study show that exposure to hate speech based on sexual orientation, gender identity, and gender-dissent in family, friendship, and social media contexts is correlated with higher levels of aggression toward TNB individuals. Moreover, exposure to hate speech within the context of friendships and peer groups predicts an increase in aggressive behaviors toward TNB individuals over time. These findings underscore the need for future studies to evaluate the effectiveness of preventive interventions addressing the consequences of hate speech, with particular attention to the role of friendship relationships as a key context for the transmission and normalization of such discourse. Nevertheless, since exposure to hate speech is not associated with bystanders' intentions at either the cross-sectional or longitudinal level, future research should examine which factors are determinants in promoting such prosocial intentions in situations of aggression. In addition, the results highlight the fundamental role of the bystander in aggression dynamics, as the intentions of those who witness such behaviors can significantly influence their maintenance or reduction. Therefore, interventions should include strategies to promote prosocial and active helping behaviors among bystanders as an important way to build safer and more inclusive everyday environments for TNB individuals. Finally, since there are no previous studies that specifically analyze aggression directed toward TNB individuals, future research should continue to explore this issue in greater depth.

AUTHOR CONTRIBUTIONS

Esther Calvete, Nerea Cortazar-Enciondo, and Naiara Gorostiaga-Marcos: Conceptualization; design. Naiara Gorostiaga-Marcos: Data curation; investigation. Naiara Gorostiaga-Marcos and Esther Calvete: Formal analysis. Naiara Gorostiaga-Marcos: Writing—first draft. Nerea Cortazar-Enciondo and Esther Calvete: Review; supervision.

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CONFLICT OF INTEREST STATEMENT

The authors have no relevant financial or non-financial interests to disclose.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in the Open Science Framework at https://osf.io/6wdhc/files.

ETHICS STATEMENT

This project has been approved by the Research Ethics Committee of the University of Deusto (Ref: ETK-83/23-24).

CONSENT TO PARTICIPATE

Informed consent was obtained from parents or legal guardians, as well as assent from all adolescent participants included in the study.

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