

CYBERBULLYING ON SOCIAL MEDIA AMONG YOUNG ADULTS: UNRAVELING ONLINE DYNAMICS

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SUMMARY

This study examined individual and relational predictors of cyberbully-victim involvement among young adults, focusing on social connectedness (offline, mixed offline–online, and exclusively online), parasocial relationships (PSRs) with social media influencers (SMIs), and social media addiction. Using a generalized logistic regression model, results revealed that being female and younger significantly increased the likelihood of dual-role involvement. Offline social connectedness emerged as a significant protective factor, while offline-online and exclusively online ties were not associated with cyberbully-victim status. Notably, stronger PSRs with influencers were linked to a decreased likelihood of dual-role involvement, suggesting a possible compensatory or protective role for vulnerable individuals. Social media addiction was confirmed as a strong risk factor, more than doubling the odds of cyberbully-victim involvement. These findings underscore the complex interplay between psychosocial vulnerabilities and digital relational dynamics, highlighting the need for prevention strategies that foster offline relationships, promote digital resilience, and address problematic social media use among young adults.

Key words: cyberbullying on social media - cyberbully-victims - social connectedness - parasocial relationships - social media addiction

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INTRODUCTION

Cyberbullying on social media represents an increasingly significant public health issue, owing to its pervasive nature, potential for anonymity, and the enduring visibility of harmful content (Campbell et al. 2018; Giumetti & Kowalski 2022). While the existing literature has largely concentrated on adolescents (e.g., Anderson 2018), there is a growing need to extend the focus to young adults, a demographic highly active on digital platforms and navigating critical developmental transitions. Despite this, research on cyberbullying among adults remains limited, with most studies addressing college populations (Watts et al. 2017). Importantly, cyberbullying may manifest differently and produce distinct psychological outcomes in adults compared to younger individuals (Cunningham et al. 2021; Kim et al. 2017), particularly within the context of social media use, which differs significantly across age groups in terms of platform preferences and patterns of engagement (Auxier & Anderson 2021). Within this emerging area, special attention should be paid to cyberbully-victims - individuals who simultaneously perpetrate and experience cyberbullying (Lozano-Blasco et al. 2021). This subgroup exhibits elevated psychological distress, including increased symptoms of depression, and social isolation, when compared to victims or perpetrators alone (Fabris et al. 2022; Li et al. 2021). As their dual involvement in online aggression places them at heightened risk, young adult cyberbully-victims represent a particularly vulnerable and underexplored population (Hinduja et al, 2021; Wang et al. 2019), warranting focused empirical investigation.

Among the factors that may contribute to cyberbullying involvement, social connectedness appears to play a crucial role (Kircaburun et al. 2019). Social connectedness, defined as a subjective sense of closeness and belonging in interpersonal relationships, can occur in offline contexts (face-to-face relationships), blended contexts (offline-online with known peers), or exclusively online interactions with virtual contacts (Lee et al. 2001; Riedl et al. 2013). Specifically, a study has explored the relationship between social connectedness and cyberbullying, reporting that cyberbully-victims feel significantly less socially connected than those never involved in cyberbullying (Spears et al. 2015). In contrast, recent findings by Mills et al. (2023) showed no significant association between overall social connectedness and cyberbullying behaviors, contradicting previous evidence. These discrepancies highlight the importance of considering the type and quality of social connections, particularly those formed online, which may influence young adults' perceptions and behaviors differently (Lamblin et al. 2017).

In addition, parasocial relationships (PSRs), the one-sided emotional and cognitive bonds individuals form with social media influencers (SMIs), should also be considered when investigating online interpersonal dynamics (Liebers & Schramm 2019; Rubin & Perse 1987). Although no studies to date have directly examined the relationship between cyberbullying involvement and PSRs, it is plausible to hypothesize their potential role in this context. On one hand, PSRs may serve as a protective function by partially compensating for a lack of offline or reciprocal connections, offering a sense of belonging or emotional support

(Hoffner & Bond 2022). On the other hand, intense parasocial involvement may act as a risk factor, by amplifying peer comparison processes, emotional sensitivity, and online social exposure, particularly among individuals with fragile offline ties or problematic social media use (Chae 2018; Farivar et al. 2022; Pries et al. 2022).

Finally, social media addiction has emerged as a significant psychological risk factor for involvement in cyberbullying during young adulthood (Çimke & Cerit 2021; Parmar et al. 2024). Excessive and dysregulated use of social platforms, marked by preoccupation, withdrawal symptoms, and functional impairments, has been associated with aggressive behavior, emotional dysregulation, and difficulties in interpersonal relationships (Gioia et al. 2021). Such problematic usage may heighten both the risk of exposure to and the perpetration of cyberbullying, thereby reinforcing the dynamics of the bully-victim cycle.

Together, these factors highlight the need for a more nuanced understanding of how different dimensions of social connectedness, parasocial involvement, and social media use behaviors interact to predict cyberbully-victim dynamics in young adults.

Present Study

The present study aims to examine the predictors of involvement in the cyberbully-victim role among young adults who are active users of social media platforms. Specifically, it investigates how age, sex, different forms of social connectedness - offline, offline-online, and exclusively online - alongside parasocial relationships with SMIs and symptoms of social media addiction, are associated with the likelihood of being both a perpetrator and a victim of cyberbullying. By focusing on a young adult university sample, this research addresses a critical gap in the literature, which has predominantly focused on adolescents, and contributes to a deeper understanding of how social media dynamics may influence the emergence of dual-role involvement in cyberbullying behavior.

METHOD

Participants and procedure

A total of 422 undergraduate students (81.5% female; $M_{age} = 21.00$, $SD_{age} = 2.65$), were recruited from several Italian universities. Participants were invited to complete an online survey, which was distributed via university mailing lists using a snowball sampling procedure. Participation was entirely voluntary and uncompensated. Respondents accessed the survey through a secure link and provided informed consent by selecting "Yes, I agree to participate" on the first page. The inclusion criteria was following at least one SMI. The study was conducted in

accordance with the ethical principles of the Declaration of Helsinki and was approved by the Ethics Committee of the Sapienza University of Rome (Prot. n. 0000009; 10/01/2022).

Measures

Socio-demographic information

Participants reported their age and biological sex (0 = male; 1 = female).

Cyberbully-victim

To assess involvement as a cyberbully-victim, a Brief Version of the Florence CyberBullying Scale (Palladino et al. 2015) was used, measuring both cyberbullying perpetration and victimization. Each dimension consisted of 4 items assessing the frequency of cyberbullying behaviors experienced or enacted in the past 2–3 months (e.g., "In the past 2/3 months, I have received threats and insults on the Internet (websites, chatrooms, social networks)"). Responses were rated on a 5-point scale ranging from 1 (never) to 5 (several times a week). Regarding perpetration and victimization dimensions the Cronbach's alpha were respectively 0.84 and 0.71. Based on the scores, a dichotomous variable was created to identify cyberbully-victims category: participants who scored at least 2 (once or twice) on both the victimization and perpetration scales were coded as cyberbully-victims (1), while all others were coded as 0.

Parasocial Relationship with SMI

To assess the intensity of the relationship that respondents develop with their favorite influencer(s), an adapted version of the Parasocial Interaction Scale (PSI) by Rubin et al. (1985) was used, tailored to the social media context. Specifically, participants who responded "yes" to the screening question "Do you follow any influencers through your social media profiles (e.g., Instagram, TikTok, Facebook, etc.)?" were then asked to complete 12 items measuring the unilateral emotional, cognitive, and behavioral bond developed with influencers or content creators (e.g., "I miss seeing my favorite influencer when they do not post photos or videos"). All items were rated on a 7-point Likert scale, ranging from 1 (Strongly disagree) to 7 (Strongly agree). The Cronbach's alpha was 0.90.

Offline social connectedness

To assess enduring interpersonal closeness within offline social contexts, 9 items were drawn from the revised version of the Social Connectedness Scale (Lee et al. 2001), as adapted by Nappa et al. (under review). This scale measures respondents' perceptions of closeness, sense of belonging, and ability to connect with others in face-to-face interactions (e.g., "I feel disconnected from the real-world around me"). Participants rated items such as using a 7-point Likert scale, ranging from 1 (Strongly disagree) to 7 (Strongly agree). The Cronbach's alpha was 0.90.

Offline-online social connectedness

To assess enduring interpersonal closeness within both the offline and online social context, 9 items were drawn from the revised version of the Social Connectedness Scale (Lee et al. 2001; Riedl et al. 2013) as adapted by Nappa et al. (under review). The scale assesses how participants feel close, connected, and able to connect with social media contacts whom they also know in real life (e.g., “I feel disconnected from my social media network - think about only contacts you also know in real-life”). Participants rated each item using a 7-point Likert scale, ranging from 1 (Strongly disagree) to 7 (Strongly agree). The Cronbach’ alpha was 0.84.

Online social connectedness

To assess cognitions of enduring interpersonal closeness within exclusively online social contexts, 9 items were selected from the revised version of the Social Connectedness Scale (Lee et al. 2001; Riedl et al. 2013), as adapted by Nappa et al. (under revision). This version specifically targets individuals’ perceived closeness, connectedness, and ability to form meaningful relationships with social media contacts known exclusively online. (e.g., “I feel disconnected from the social media world around me - think about only contacts you exclusively know online”). Participants rated items such as using a 7-point Likert scale, ranging from 1 (Strongly disagree) to 7 (Strongly agree). The Cronbach’s alpha was 0.85.

Social media addiction

To assess social media addiction, the Social Media Disorder Scale (van den Eijnden et al. 2016) was administered. Participants were asked to reflect on their behaviors and emotional experiences related to social media use over the past year (e.g., “During the past year, have you regularly felt dissatisfied because you wanted to spend more time on social media?”). All 9 items were rated on a 5-point Likert scale, ranging from 1 (Never) to 5 (Always). The Cronbach’s Alpha is 0.85.

Data analysis

First, descriptive statistics, frequencies, and correlations among the study variables were computed. Subsequently, given the dichotomous nature of the dependent

variable (i.e., cyberbully-victim involvement), a logistic regression model was performed. Thus, cyberbully-victim status was regressed on age, biological sex (coded as 0 = female, 1 = male), three types of social connection with peers (i.e., offline, online-offline, and exclusively online), parasocial relationship with SMIs, and social media addiction. All analyses were conducted using Jamovi software (version 2.4.11; The Jamovi Project 2023) and the GAMLj module (Gallucci 2019).

RESULTS

Correlations

Correlations between the investigated variables are reported in Table 1.

Generalized logistic regression model

The logistic regression model accounted for the 25.5% of the variance, $R^2 = 0.255$, $\chi^2(7) = 37.6$, $p < 0.001$.

Several predictors emerged as significant. Specifically, cyberbully-victim was negatively predicted by biological sex, $B = -2.44$, $SE = 0.70$, $Exp(B) = 0.09$, $p < 0.001$, indicating that males were about 91% times less likely than females to be involved in the cyber bully-victim role, age, $B = -0.22$, $SE = 0.11$, $Exp(B) = 0.80$, $p = 0.049$, suggesting younger individuals were about 20% times more at risk than older participants, offline social connectedness, $B = -0.72$, $SE = 0.27$, $Exp(B) = 0.49$, $p = 0.007$, suggesting that higher levels of social connectedness were about 51% times related to less cyberbully-victim involvement, and finally parasocial relationship with SMI, $B = -0.51$, $SE = 0.23$, $Exp(B) = 0.60$, $p = 0.026$, indicating that higher levels of parasocial relationship with SMI were about 40% times related to less cyberbully-victim involvement. Conversely, social media addiction was positively associated with cyberbully-victim role, $B = 0.98$, $SE = 0.37$, $Exp(B) = 2.67$, $p = .008$, indicating a higher likelihood of about 2.67 times to be involved in cyberbully-victim dynamics among those with problematic social media use. Offline-online and online social connectedness were not significant predictors. Full statistics are reported in Table 2.

Table 1. Correlations Among Variables

	1	2	3	4	5	6	7	8
1. Age	-							
2. Sex	-0.235**	-						
3. Offline social connectedness	0.028	0.046	-					
4. Offline-online social connectedness	-0.074	0.022	0.597**	-				
5. Online social connectedness	0.008	-0.077	0.192**	0.418**	-			
6. PRS with SMI	-0.156**	-0.067	-0.080	0.005	0.064	-		
7. Social media addiction	-0.261**	0.092	-0.329**	-0.204**	-0.018	0.306**	-	
8. Cyberbully-victim	-0.093	-0.165*	-0.245**	-0.123	0.051	-0.029	0.274**	-

Note: * $p < 0.05$; ** $p < 0.01$. Biological Sex was coded as 0 = females and 1 = males. Involvement in the cyber bully-victim role was coded as 0 = non-involvement and 1 = involvement. PRS = Parasocial Relationship; SMI = Social Media Influencer

Table 2. Factors associated to involvement in the cyber bully-victim role

Predictor	B	SE	Cyber Bully- Victim Role		z	p
			Exp(B)	95% CI for Exp(B)		
Biological Sex	-2.44	0.70	0.09	[0.02, 0.35]	-3.46	<0.001
Age	-0.22	0.11	0.80	[0.64, 1.00]	-1.97	0.049
Offline social connectedness	-0.72	0.27	0.49	[0.29, 0.82]	-2.68	0.007
Offline-online social connectedness	0.17	0.34	1.19	[0.61, 2.33]	0.50	0.615
Offline-online social connectedness	0.04	0.24	1.04	[0.65, 1.65]	0.15	0.881
PRS with SMI	-0.51	0.23	0.60	[0.38, 0.94]	-2.22	0.026
Social media addiction	0.98	0.37	2.67	[1.29, 5.54]	2.65	0.008

Note: Biological Sex was coded as 0 = females and 1 = males; CI = Confidence interval; PRS = Parasocial Relationship; SMI = Social Media Influencer

DISCUSSIONS

The findings of the present study provide a nuanced understanding of the individual and relational factors that contribute to cyberbully-victim involvement among young adults. First, consistent with prior evidence highlighting age and sex differences in cyberbullying role involvement (Chen et al. 2025; Wang et al. 2019), females were found to be significantly more likely than males to be involved as cyberbully-victims. This may reflect gender-specific patterns of digital communication, as young women could engage more in emotionally intense or conflict-laden exchanges on social media platforms (Campbell & Bauman 2018; Messina et al. 2024). Similarly, younger age was associated with a higher likelihood of dual-role involvement, suggesting that increasing emotional maturity and cognitive self-regulation across emerging adulthood may serve as protective factors against online hostility (Cunningham et al. 2021).

Among the dimensions of social connectedness examined, only offline social connectedness emerged as a significant protective factor. This finding aligns with previous research indicating that high-quality offline relationships can reduce the risk of cyberbullying victimization. A lack of strong real-world ties may drive individuals to seek validation and belonging online, where they might become more exposed to ambivalent or even hostile social dynamics. In contrast, neither mixed offline–online connections nor exclusively online ones significantly predicted cyberbully-victim status, supporting the notion that the presence of digital connections alone does not guarantee emotional closeness or social support (Mills et al. 2023).

Notably, parasocial relationships (PSRs) with social media influencers (SMIs) were inversely associated with cyberbully-victim involvement. Although PSRs are typically conceptualized as one-sided or compensatory (Liebers & Schramm 2019), the present findings suggest they may fulfill psychological needs for connection and offer a form of emotional regulation that reduces both the risk of victimization and the likelihood of engaging in online aggression, particularly for individuals lacking reciprocal social bonds (Hoffner & Bond 2022).

Finally, in line with previous findings (Çimke & Cerit 2021; Parmar et al. 2024), social media addiction emerged as a strong and independent risk factor. The association between dysregulated platform use and dual-role involvement supports theoretical models that link excessive social media engagement with emotional dysregulation, impulsivity, and increased exposure to online conflict (Carone et al. 2023; Gioia et al. 2021).

Despite its innovative contributions, this study presents some limitations. The cross-sectional design prevents causal inferences between social connectedness, parasocial relationships with SMI, social media addiction, and cyberbully-victim involvement. Future longitudinal studies could clarify these relationships over time. The use of self-report measures may have introduced social desirability bias, though the online format may have reduced this risk by ensuring participants' anonymity. Lastly, the non-probability, snowball sampling limits generalizability, as the sample is not representative of Italian young adults. In this sense, broader studies with more representative samples are needed.

Collectively, these findings underscore the importance of promoting high-quality offline relationships, fostering digital resilience, including through the support of SMIs and digital celebrities who can contribute to awareness campaigns (Laenen 2023), and addressing problematic social media use in interventions aimed at reducing cyberbullying involvement among young adults.

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Contribution of individual authors:

Maria Rosaria Nappa, Alessandra Ragona & Gaetano Maria Sciabica: conceptualization, data curation, formal analysis, investigation, methodology, project administration, visualization, validation, writing original draft, writing review & editing, supervision.

Luigi Juli & Mara Morelli: conceptualization, visualization, writing original draft, writing review & editing.

All authors approved the final manuscript.

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