

EXPOSURE TO VIOLENT CONTENT ON FACEBOOK, INSTAGRAM, AND YOUTUBE AND ITS ASSOCIATION WITH VIOLENCE ACCEPTANCE AND INTENTIONS TO IMITATE VIOLENT BEHAVIORS AMONG ADOLESCENTS AND YOUNG ADULTS: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: The rapid expansion of social media has substantially increased adolescents' and young adults' exposure to violent digital content. Repeated exposure to such content may influence behavioural attitudes by increasing violence acceptance and encouraging imitation of aggressive behaviours. However, evidence from India examining these associations remains limited.

Objectives: To assess the exposure to violent content on Facebook, Instagram, and YouTube and determine its association with violence acceptance and intentions to imitate violent behaviours among adolescents and young adults in Chengalpattu district, Tamil Nadu.

Methods: A community-based analytical cross-sectional study was conducted among 1,000 adolescents and young adults aged 15–24 years using multistage stratified random sampling. Data were collected using a structured questionnaire assessing sociodemographic characteristics, social media usage patterns, exposure to violent content, violence acceptance, and imitative behavioural intentions. Descriptive statistics, Chi-square test, independent t-test, logistic regression analysis, and adjusted odds ratios (AORs) with 95% confidence intervals were calculated using SPSS version 29. Statistical significance was considered at $p < 0.05$.

Results: Instagram was the most frequently used social media platform (42.0%), followed by YouTube (33.5%) and Facebook (24.5%). Overall, 41.2% of participants reported frequent exposure to violent social media content, while 34.1% demonstrated high violence acceptance. Violence acceptance was significantly higher among rural participants (39.1% vs. 30.0%), males (41.8% vs. 26.7%), and participants exposed to violent content on four or more days per week (53.6% vs. 20.4%; $p < 0.001$). Frequent exposure independently predicted high violence acceptance (AOR=3.58; 95% CI: 2.61–4.91) and high imitative intent (AOR=2.96; 95% CI: 2.16–4.06). Participants with daily screen time exceeding six hours also demonstrated significantly greater imitative intent (AOR=1.87; 95% CI: 1.31–2.67). Violence acceptance emerged as the strongest independent predictor of imitative intent (AOR=4.11; 95% CI: 3.01–5.60).

Conclusion: Frequent exposure to violent content on social media is significantly associated with increased violence acceptance and intentions to imitate violent behaviours among adolescents and young adults. The findings highlight the importance of content-specific digital health interventions, media literacy education, parental guidance, and responsible regulation of violent online content to promote safer digital environments and reduce the behavioural impact of harmful social media exposure. Future longitudinal studies are recommended to establish causal relationships and inform evidence-based public health strategies.

KEYWORDS: Social media; Violent content; Violence acceptance; Imitative behaviour; Adolescents; Young adults; Digital media; Public health; Cross-sectional study.

INTRODUCTION

Violence is a major global public health problem that affects individuals across all age groups and has profound consequences for physical, psychological, social, and economic well-being. The World Health Organization (WHO) defines violence as the intentional use of physical force or power, threatened or actual, against oneself, another person, or a community that results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation.[1] Globally, violence is responsible for more than 1.6 million deaths annually, while millions more experience

non-fatal injuries, disability, emotional trauma, and long-term psychological consequences. The burden of violence disproportionately affects children, adolescents, and young adults, making violence prevention a major public health priority worldwide.[1]

Children and adolescents remain particularly vulnerable to violence because of their ongoing physical, emotional, and cognitive development. According to the WHO Global Status Report on Preventing Violence Against Children 2020, up to one billion children aged 2–17 years experience physical, emotional, or sexual violence every year, representing nearly one in two children globally.[2] Violence during childhood is associated with adverse health outcomes throughout life, including depression, anxiety, substance abuse, poor educational attainment, aggressive behavior, self-harm, and increased risk of perpetrating violence in adulthood.[2]

The rapid expansion of internet accessibility and smartphone ownership has transformed the social environment of adolescents and young adults. Digital media platforms such as Facebook, Instagram, and YouTube have become integral components of everyday life, serving as important sources of communication, education, entertainment, and social interaction. UNICEF estimates that approximately one in three internet users worldwide is younger than 18 years, while hundreds of millions of adolescents access social media platforms daily.[3] Although digital technologies provide numerous educational and developmental opportunities, they simultaneously expose young users to harmful online experiences including violent videos, cyberbullying, hate speech, graphic injuries, domestic violence, and criminal activities.[3]

Recent global surveillance data demonstrate that social media use among adolescents continues to rise rapidly. The Centers for Disease Control and Prevention (CDC), through the Youth Risk Behavior Surveillance System (YRBSS), has consistently reported increasing concerns regarding adolescent mental health, exposure to violence, bullying, suicidal behaviors, and other health-risk behaviors among school-going youth.[4] Such findings highlight the importance of understanding digital exposures that may contribute to unhealthy behavioral outcomes during adolescence.

Exposure to violent media has been extensively studied as a potential determinant of aggressive attitudes and behaviors. The American Academy of Pediatrics has emphasized that repeated exposure to violent media may increase aggressive thoughts, emotional desensitization, fear, and acceptance of violence as a normal method of conflict resolution among children and adolescents.[5] Social learning theory suggests that repeated observation of violent behaviors through visual media may reinforce imitation, particularly among younger individuals who are still developing cognitive and emotional regulation skills.

From a public health perspective, violence prevention has evolved beyond addressing only physical injuries to include identification of behavioral, environmental, and digital determinants of violence. Modern preventive medicine emphasizes reducing modifiable risk factors through health education, community participation, school-based interventions, parental supervision, digital literacy, and policy development.[6] The growing influence of social media has therefore become an important area of research for public health professionals seeking to understand emerging behavioral risks among adolescents.

Epidemiological methods provide a systematic approach for investigating associations between behavioral exposures and health outcomes. Analytical cross-sectional studies are particularly useful for estimating the prevalence of health-related behaviors and identifying factors associated with important public health outcomes within a population.[7] Such studies provide valuable evidence for designing preventive interventions and generating hypotheses for future longitudinal research.

International organizations have increasingly recognized violence prevention in digital environments as a priority area. The WHO Violence Prevention Programme advocates strengthening surveillance systems, improving digital safety, promoting protective social environments, and implementing evidence-based interventions to reduce violence across the life course.[8] Similarly, UNICEF emphasizes protecting children from both offline and online violence through integrated child protection systems, digital literacy, and safe internet practices.[9] The CDC further recommends continuous monitoring of youth behaviors to identify emerging threats associated with violence, risky behaviors, and digital media exposure.[10]

Despite increasing internet penetration and widespread use of social networking platforms, there remains limited evidence regarding the association between exposure to violent social media content and behavioral outcomes such as violence acceptance and imitative intent, particularly among adolescents and young adults in low- and middle-income countries. Most existing research has primarily focused on mental health outcomes, cyberbullying, or screen time, with comparatively fewer studies examining how repeated exposure to violent online content influences acceptance of violence as a socially acceptable behavior or intentions to imitate aggressive acts. Furthermore, evidence comparing these associations across different social media platforms remains scarce.

Understanding these relationships has important implications for adolescent health promotion, violence prevention, school health programs, digital literacy initiatives, and evidence-based policymaking. Therefore, the present study was undertaken to assess the association between exposure to violent content on Facebook, Instagram, and YouTube and violence acceptance and imitative intent among adolescents and young adults using a quantitative cross-sectional study design. The findings are expected to contribute to the growing evidence base on digital media and adolescent behavioral health and support the development of targeted public health interventions aimed at promoting safer online environments and preventing violence among young people.

METHODOLOGY

Study Design and Setting

A community-based analytical cross-sectional study was conducted to assess the association between exposure to violent content on Facebook, Instagram, and YouTube and violence acceptance and imitative intent among adolescents and young

adults residing in Chengalpattu district, Tamil Nadu, India. Chengalpattu district, established in 2019, is one of the rapidly developing districts of Tamil Nadu with a diverse urban and rural population, making it an appropriate setting for studying digital media exposure and its behavioral consequences among young individuals. The district comprises multiple municipalities, town panchayats, village panchayats, educational institutions, and rapidly expanding suburban regions, reflecting varying socioeconomic and cultural backgrounds. The study was conducted over a period of one year from January 2026 to December 2026.

Study Population

The study population included adolescents and young adults aged 15 to 24 years residing in Chengalpattu district. Participants were recruited from higher secondary schools, colleges, universities, and community settings located in both urban and rural areas of the district. Individuals who had been residing in the district for at least six months and who reported using at least one of the selected social media platforms (Facebook, Instagram, or YouTube) during the preceding six months were considered eligible for participation. Individuals with diagnosed severe psychiatric disorders, cognitive impairment that interfered with questionnaire completion, inability to comprehend either Tamil or English, or those unwilling to participate were excluded from the study. For participants younger than 18 years, written parental or guardian consent together with participant assent was obtained before enrolment.

Sample Size and Sampling Technique

A total of 1000 participants were included in the study. The sample size was considered adequate to provide sufficient precision for estimating the prevalence of exposure to violent social media content and adequate statistical power for identifying factors associated with violence acceptance and imitative intent using multivariable regression analyses. A multistage stratified random sampling technique was employed. Initially, Chengalpattu district was stratified into urban and rural sectors. Educational institutions and community clusters from each stratum were selected using simple random sampling. Subsequently, eligible adolescents and young adults were selected using systematic random sampling from the selected institutions and community clusters. The sample was proportionately distributed according to the district's population characteristics, resulting in 550 participants from urban areas and 450 participants from rural areas, thereby ensuring adequate representation of both populations.

Study Instrument

Data were collected using a structured, pretested, interviewer-administered questionnaire developed after an extensive review of published literature and validated instruments. The questionnaire consisted of five sections. The first section collected sociodemographic information, including age, gender, educational status, residence, socioeconomic status, family type, and parental educational status. The second section assessed social media usage patterns, including the frequency and duration of Facebook, Instagram, and YouTube use, average daily screen time, preferred platform, frequency of exposure to violent content, type of violent content viewed, and duration of exposure. The third section measured violence acceptance using the Acceptance of Interpersonal Violence (AIV) Scale, a validated instrument widely used to assess attitudes toward interpersonal violence. The fourth section assessed imitative intent using a structured behavioral intention questionnaire developed from the Theory of Planned Behavior and adapted from previously published studies evaluating media influence on aggressive behavior. Higher scores reflected greater intentions to imitate violent behaviors observed on social media. The final section obtained information regarding previous exposure to community violence, history of bullying, parental monitoring of internet use, family supervision, and participation in extracurricular activities, which were considered potential confounding variables.

Pilot Study

Before commencement of the main study, a pilot study was conducted among 50 adolescents and young adults selected from educational institutions outside the final sampling areas. The pilot participants were excluded from the final analysis. The pilot study was undertaken to assess the clarity, feasibility, comprehensibility, sequence of questions, and average time required to complete the questionnaire. Based on participant feedback and expert recommendations, minor modifications were incorporated to improve language clarity and questionnaire flow.

Data Collection Procedure

Following approval from the Institutional Ethics Committee and permission from the respective educational institutions and local administrative authorities, eligible participants were approached during scheduled visits. The objectives and purpose of the study were explained in detail, and written informed consent was obtained before enrolment. For participants below 18 years of age, written parental consent and participant assent were obtained. Each participant completed the questionnaire in a supervised environment to minimize missing responses and ensure confidentiality. The average time required for questionnaire completion was approximately 20–25 minutes. Participants were assured that all information would remain anonymous and confidential and that participation was entirely voluntary.

Study Variables

The primary outcome variables were violence acceptance and imitative intent. Independent variables included age, gender, place of residence, educational status, socioeconomic status, daily screen time, preferred social media platform, frequency of social media use, frequency of exposure to violent content, duration of exposure, parental monitoring, and previous exposure to violence. Violence acceptance and imitative intent scores were categorized into low, moderate, and high levels using predetermined cut-off values for descriptive analysis and dichotomized for regression analyses where appropriate.

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using IBM SPSS Statistics version 29.0. Data cleaning and validation were performed before analysis. Continuous variables were summarized using mean and standard deviation or median and interquartile range depending on data distribution, whereas categorical variables were presented as frequencies and percentages. Normality of continuous variables was assessed using the Shapiro–Wilk test. Differences between categorical variables were analyzed using the Chi-square test or Fisher's exact test, while differences in continuous variables between two groups were assessed using the Independent Student's t-test. Comparisons involving more than two groups were performed using one-way analysis of variance (ANOVA) followed by Bonferroni post hoc analysis where appropriate. Pearson or Spearman correlation coefficients were calculated to examine relationships between screen time, exposure duration, violence acceptance scores, and imitative intent scores. Variables demonstrating a p-value of <0.20 in univariate analyses were entered into multivariable binary logistic regression models to identify independent predictors of high violence acceptance and high imitative intent. Adjusted odds ratios (AORs) with 95% confidence intervals (95% CI) were calculated. Model calibration was assessed using the Hosmer–Lemeshow goodness-of-fit test, and explanatory performance was evaluated using Nagelkerke's R^2 statistic. All statistical tests were two-tailed, and a p-value of less than 0.05 was considered statistically significant.

Ethical Considerations

The study protocol was reviewed and approved by the Institutional Ethics Committee before initiation of the study. Permission was obtained from the District Education authorities and the heads of participating educational institutions. Written informed consent was obtained from all adult participants, while parental consent and participant assent were obtained for minors. Participant anonymity and confidentiality were strictly maintained throughout the study by assigning unique identification codes and excluding personal identifiers from the database. All study procedures were conducted in accordance with the ethical principles outlined in the Declaration of Helsinki (2013 revision) and Good Clinical Practice guidelines.

RESULTS

Table 1. Sociodemographic Characteristics of Participants (N = 1000)

Variable	Urban (n=550)	Rural (n=450)	Total	%
Age (years)				
15–17	140	155	295	29.5
18–20	215	165	380	38.0
21–24	195	130	325	32.5
Gender				
Male	270	220	490	49.0
Female	280	230	510	51.0
Education				
School	155	190	345	34.5
College	395	260	655	65.5

Table 2. Social Media Usage Pattern (N = 1000)

Variable	n	%
Daily screen time <2 h	125	12.5
2–4 h	295	29.5
4–6 h	360	36.0
>6 h	220	22.0
Primary platform – Facebook	245	24.5
Instagram	420	42.0
YouTube	335	33.5
Frequent exposure to violent content	412	41.2
Occasional exposure	430	43.0
Rare/Never	158	15.8

Table 3. Violence Acceptance According to Participant Characteristics

Variable	High Violence Acceptance n (%)	p value
Urban	165 (30.0)	
Rural	176 (39.1)	0.003
Male	205 (41.8)	
Female	136 (26.7)	<0.001
Exposure $\geq$ 4 days/week	221 (53.6)	
Exposure <4 days/week	120 (20.4)	<0.001

Table 4. Imitative Intent According to Social Media Exposure

Variable	High Imitative Intent n (%)	p value
Facebook	58 (23.7)	
Instagram	171 (40.7)	
YouTube	105 (31.3)	<0.001
>6 h screen time	122 (55.5)	
≤6 h screen time	212 (27.2)	<0.001

Table 5. Association Between Frequency of Violent Content Exposure and Violence Acceptance

Exposure Frequency	High Violence Acceptance	Low Violence Acceptance	Total
Rare/Never	19	139	158
Occasionally	106	324	430
Frequently	216	196	412

Chi-square = 128.6, $p < 0.001$

Table 6. Multiple Logistic Regression for High Violence Acceptance

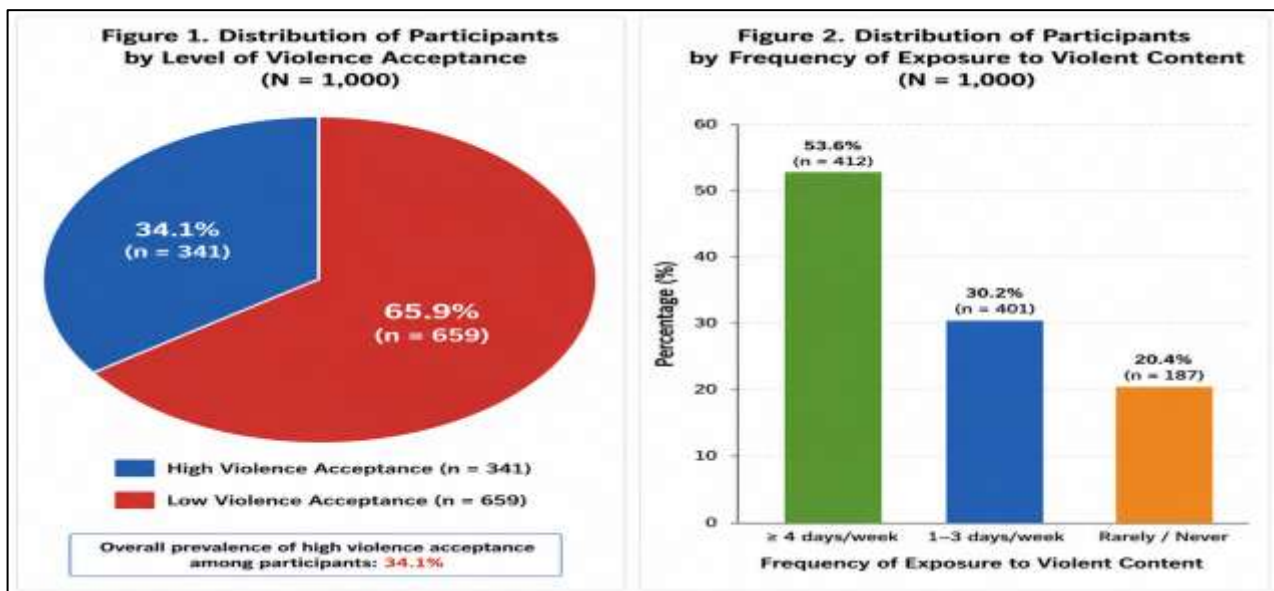
Predictor	Adjusted OR	95% CI	p value
Frequent exposure to violent content	3.58	2.61–4.91	<0.001
Screen time >6 h/day	2.19	1.54–3.12	<0.001
Male gender	1.78	1.31–2.42	<0.001
Rural residence	1.42	1.04–1.95	0.028
Age 21–24 years	1.26	0.91–1.74	0.162

Model fit: Nagelkerke $R^2 = 0.31$; Hosmer–Lemeshow $p = 0.61$.

Table 7. Multiple Logistic Regression for High Imitative Intent

Predictor	Adjusted OR	95% CI	p value
High violence acceptance	4.11	3.01–5.60	<0.001
Frequent exposure to violent content	2.96	2.16–4.06	<0.001
Instagram as primary platform	1.74	1.23–2.46	0.002
Screen time >6 h/day	1.87	1.31–2.67	<0.001
Male gender	1.39	1.02–1.91	0.039

Model fit: Nagelkerke $R^2 = 0.36$; Hosmer–Lemeshow $p = 0.74$.



DISCUSSION

The present community-based analytical cross-sectional study investigated the association between exposure to violent content on Facebook, Instagram, and YouTube and violence acceptance and intentions to imitate violent behaviours among adolescents and young adults in Chengalpattu district, Tamil Nadu. Among the 1,000 participants, Instagram was the most commonly used platform (42.0%), followed by YouTube (33.5%) and Facebook (24.5%). Nearly 41.2% of participants reported frequent exposure to violent social media content. High violence acceptance was identified in 34.1% of participants and was significantly more common among rural residents (39.1% vs. 30.0%), males (41.8% vs. 26.7%), and those exposed to violent content on ≥ 4 days/week (53.6% vs. 20.4%; $p < 0.001$). Multivariable logistic regression further demonstrated that frequent exposure to violent content independently increased the likelihood of high violence acceptance (AOR=3.58; 95% CI: 2.61–4.91) and high imitative intent (AOR=2.96; 95% CI: 2.16–4.06). Moreover, high violence acceptance emerged as the strongest independent predictor of imitative intent (AOR=4.11; 95% CI: 3.01–5.60),

indicating that repeated exposure to violent digital content may substantially influence adolescents' behavioural attitudes and intentions.

In the present study, participants reporting frequent exposure to violent social media content had significantly greater violence acceptance and imitative intent than those reporting occasional or rare exposure. These findings are comparable with the systematic review and meta-analysis by Purba et al.[11], who synthesized evidence from multiple international studies and concluded that greater social media use is consistently associated with health-risk behaviours among young people, including aggression, violence-related behaviours, and other adverse behavioural outcomes. While their review evaluated overall social media exposure, the present study specifically demonstrates that violent content exposure itself independently predicts violence acceptance and imitative intent, thereby providing more focused evidence regarding the behavioural consequences of exposure to violent digital media.

High violence acceptance was observed among 34.1% of participants in the present study, with significantly higher prevalence among males (41.8%) than females (26.7%) and among participants frequently exposed to violent content (53.6% vs. 20.4%; $p < 0.001$). These findings are consistent with the review by Rodenhizer and Edwards[12], who reported that repeated exposure to violent and sexually explicit media contributes to more permissive attitudes toward interpersonal violence and may influence aggressive behavioural intentions through repeated cognitive reinforcement. The observed gender difference in the present study may also reflect sociocultural influences, differential media preferences, and greater engagement of males with aggressive online content.

Participants frequently exposed to violent content had 3.58-fold higher odds of high violence acceptance than those with infrequent exposure. These findings agree with Gatuguta et al.[13], who emphasized that adolescents' perceptions and understanding of violence are shaped by repeated exposure within family, community, peer, and media environments. Likewise, the systematic review on early adolescent development in the face of violence highlighted that repeated exposure to violence during adolescence adversely affects behavioural regulation, emotional development, and social functioning.[14] Although the present study did not assess developmental outcomes, the significant association between repeated violent content exposure and violence acceptance suggests that digital media may contribute to behavioural normalization of aggression during this vulnerable developmental period.

The present study further demonstrated that prolonged social media exposure was associated with adverse behavioural outcomes. Participants with screen time exceeding six hours daily had significantly greater imitative intent (55.5% vs. 27.2%; AOR=1.87; 95% CI: 1.31–2.67; $p < 0.001$). These findings support the observations of Odgers and Jensen[15], who emphasized that adolescent behavioural outcomes depend not only on the duration of digital media use but also on the quality and context of online experiences. Similarly, Boer et al.[16] concluded that problematic social media use is more consistently associated with adverse behavioural and psychological outcomes than duration of screen exposure alone. Our findings reinforce this concept by demonstrating that both prolonged screen time and frequent exposure to violent content independently influence behavioural attitudes.

Instagram was the primary platform used by 42.0% of participants and was independently associated with higher imitative intent (AOR=1.74; 95% CI: 1.23–2.46). Participants using Instagram also demonstrated significantly higher imitative intent than Facebook users (40.7% vs. 23.7%; $p < 0.001$). These findings complement the longitudinal observations reported by Kelly et al.[17], who identified adverse behavioural and mental health consequences associated with excessive social media engagement. Similarly, Valkenburg et al.[18] emphasized that the impact of social media depends on individual susceptibility and the characteristics of digital content rather than exposure duration alone. The present study extends these observations by identifying violent content as a specific digital exposure associated with aggressive behavioural intentions.

Participants with prolonged daily screen time and repeated violent content exposure demonstrated significantly greater odds of high imitative intent. These findings are broadly comparable with Coyne et al.[19], who reported that long-term social media engagement may influence behavioural outcomes depending on individual characteristics and usage patterns. Likewise, George and Odgers[20] argued that concerns regarding adolescent digital technology use should focus on the nature of online experiences rather than technology use itself. The present study supports this perspective by demonstrating that exposure to violent content, rather than simple platform use, independently predicts aggressive behavioural intentions. An important finding of the present study was that high violence acceptance increased the likelihood of high imitative intent by more than four-fold (AOR=4.11), making it the strongest predictor identified in the regression model. This finding is consistent with the theoretical framework proposed by Nesi et al.[21], who suggested that social media has transformed adolescent peer interactions through increased opportunities for observational learning, behavioural modelling, and peer reinforcement. Similarly, Orben and Przybylski[22] concluded that digital technology may exert greater behavioural effects among susceptible individuals exposed to harmful online experiences. The present study provides empirical evidence supporting this framework by demonstrating that violence acceptance serves as an important intermediary between violent media exposure and behavioural intentions.

Although psychological outcomes were not directly evaluated, the behavioural findings observed in the present study complement those reported by Keles et al.[23], who identified consistent associations between problematic social media use and depression, anxiety, and psychological distress among adolescents. Emotional dysregulation associated with these conditions may contribute to increased aggression and reduced inhibitory control. Likewise, Viner et al.[24] highlighted cyberbullying, sleep disruption, and reduced physical activity as potential mechanisms linking social media use with poorer adolescent wellbeing. These behavioural pathways may also contribute to increased violence acceptance and should be explored in future longitudinal studies.

Finally, the present findings support the narrative review by Orben[25], who emphasized that understanding what adolescents view online is more informative than simply measuring screen time. Consistent with this perspective, the present study demonstrated that repeated exposure to violent content independently predicted both violence acceptance

and intentions to imitate violent behaviours, even after adjusting for demographic variables and screen time. These findings underscore the importance of shifting future research from measuring social media duration alone to evaluating the behavioural consequences of specific types of digital content.

CONCLUSION

The present study demonstrated a significant association between exposure to violent content on social media platforms and increased violence acceptance and intentions to imitate violent behaviours among adolescents and young adults. Frequent exposure to violent content, prolonged daily screen time, male gender, and rural residence were independently associated with higher levels of violence acceptance, while violence acceptance itself emerged as the strongest predictor of imitative intent. Instagram was the most commonly used platform and showed the highest proportion of participants with elevated imitative intentions. These findings suggest that the behavioural impact of social media depends not merely on the duration of use but also on the nature of the content consumed. Repeated exposure to violent digital content may normalize aggressive attitudes through observational learning and behavioural reinforcement, increasing the likelihood of adopting similar behaviours. Given the widespread use of social media among young people, comprehensive interventions focusing on digital literacy, media literacy education, parental supervision, responsible platform regulation, and early behavioural counselling are essential to minimize the harmful effects of violent online content. Future longitudinal studies are warranted to establish causal relationships and evaluate the effectiveness of preventive interventions aimed at promoting safer digital environments and healthier behavioural development among adolescents and young adults.

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