

Impact of Violence Exposure on Aggression, Anxiety, and Hostility Among Male Adolescent Students

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ABSTRACT

Adolescence is a developmental period marked by rapid cognitive, emotional, and social changes that may increase sensitivity to environmental influences. The present study investigated pre- to post-exposure differences in aggression, anxiety, and hostility among male adolescent students following exposure to violent audiovisual material. A one-group pretest–posttest repeated-measures design was used with 100 male adolescent students (M age = 12.70 years, $SD = 0.67$). Participants completed measures of overall aggression, state and trait anxiety, physical aggression, verbal aggression, anger, and hostility before and after approximately 30 minutes of violent movie clips from Tamil-language films. Paired-samples t tests were used to compare pre-exposure and post-exposure scores. Overall aggression increased from $M = 81.90$ ($SD = 8.20$) to $M = 103.70$ ($SD = 15.60$), $t(99) = 12.08$, $p < .001$, with a large within-person effect ($d_z = 1.21$). State anxiety increased from $M = 40.60$ to $M = 47.60$, $t(99) = 6.03$, $p < .001$, $d_z = 0.60$, and trait anxiety increased from $M = 42.90$ to $M = 50.90$, $t(99) = 7.73$, $p < .001$, $d_z = 0.77$. Significant increases were also observed in physical aggression, verbal aggression, anger, and hostility. The findings indicate significant pre–post differences across all assessed outcomes. Because the study had no comparison group, the findings do not establish that violent media exposure alone caused the observed differences. The results highlight the value of media literacy, parental mediation, and school-based prevention.

Keywords: Adolescent development, Aggression, Anxiety, Hostility, Media violence, Violent media exposure

INTRODUCTION & LITERATURE REVIEW

Adolescence is a major developmental transition involving physical maturation, cognitive growth, emotional regulation, identity formation, and changing peer relationships. During this period, young people become increasingly capable of abstract reasoning and self-reflection while remaining responsive to novelty, peer influence, and emotionally salient experiences. These characteristics make adolescence an important period for examining environmental influences on social and emotional behaviour. Media is particularly relevant because adolescents encounter audiovisual content through films, television, streaming services, online videos, social media, and electronic games.

Violent media may portray aggression as effective, rewarding, justified, humorous, or free from realistic consequences. Repeated observation of such portrayals may make aggressive responses more accessible and strengthen behavioural scripts. Social Learning Theory proposes that behaviour can be acquired through observing models and the consequences associated with their actions. Bandura et al. (1961) demonstrated that children exposed to aggressive models could reproduce aggressive behaviour. Applied to media, this perspective suggests that fictional characters can function as models and that repeated observation may influence responses to conflict.

Research has provided substantial evidence linking violent media exposure with aggression, although the magnitude and interpretation of these associations remain debated. Anderson and Bushman (2001), in a meta-analytic review, reported associations between violent video-game exposure and aggressive behaviour, aggressive cognition, aggressive affect, and physiological arousal, together with reduced prosocial behaviour. Anderson et al. (2003) reviewed evidence across television, film, video games, and music and concluded that media violence was associated with increased aggressive behaviour among young people. Bender et al. (2018) similarly noted that violent media content can influence aggressive responses, while emphasizing methodological and contextual factors. In contrast, Ferguson (2015) reported relatively small associations in a meta-analysis of video-game effects among children and adolescents, indicating that the evidence requires careful interpretation.

Aggression is generally defined as behaviour intended to harm another person who is motivated to avoid the harm. It may be expressed physically or verbally and may include affective and cognitive components. Buss and Perry (1992) conceptualized aggression through four related dimensions: physical aggression, verbal aggression, anger, and hostility. Physical aggression involves behaviour intended to cause bodily harm, whereas verbal aggression involves hostile or confrontational expression. Anger represents an affective component, while hostility reflects negative beliefs, mistrust, resentment, and antagonistic interpretations of others. Examining these dimensions separately can provide a more detailed account of changes associated with violent content.

Anxiety is another psychological response relevant to threatening or disturbing material. State anxiety refers to temporary tension, apprehension, and physiological arousal, whereas trait anxiety reflects a more enduring tendency to perceive situations as threatening (Spielberger et al., 1970). Violent media may produce emotional arousal and apprehension, particularly when content is vivid or threatening. Madan et al. (2014) examined media violence and anxiety in late adolescence, supporting the relevance of anxiety alongside behavioural outcomes. However, because trait anxiety represents a relatively stable individual difference, short-term changes in trait-anxiety scores require cautious interpretation and should not automatically be considered lasting personality change.

Hostility is related to aggression but differs from overt aggressive behaviour. It includes negative attitudes, suspicion, resentment, and a tendency to interpret other people's behaviour in an antagonistic manner. Hostile cognitions may increase the likelihood that ambiguous social actions are perceived as provocation. Violent media may therefore influence both behavioural aggression and cognitive-affective processes. Nathanson and Cantor (2000) demonstrated that active mediation can reduce aggression-promoting responses to violent cartoons, suggesting that media effects may depend partly on how viewers process and discuss violent content.

The General Aggression Model provides a complementary framework. Person and situational variables influence internal states involving cognition, affect, and arousal, which subsequently affect appraisal and behaviour (Anderson & Bushman, 2001). Violent audiovisual material can function as a situational input that activates aggressive concepts and emotional arousal. This framework is therefore useful for interpreting changes in aggression, anger, hostility, and anxiety following exposure.

A developmental perspective is also important. Adolescents are still developing executive control, emotional regulation, and social decision-making skills. Responses to media may be shaped by family relationships, peer norms, previous exposure to violence, personality, and emotional regulation. Violent media should therefore not be viewed as a uniform influence affecting all adolescents in the same way.

The present study focuses on male adolescent students and examines multiple psychological outcomes within the same participants. It compares overall aggression, state anxiety, trait anxiety, physical aggression, verbal aggression, anger, and hostility before and after exposure to approximately 30 minutes of violent movie clips. Although previous studies have examined media violence extensively, fewer have simultaneously assessed these behavioural, emotional, and cognitive-affective outcomes using repeated assessment of the same adolescent participants.

The study addresses this gap by examining pre–post changes across several psychological domains within a focused adolescent sample. It is also relevant to current concerns about adolescents' increasing access to violent digital and audiovisual content. The findings may inform media-literacy education, parental mediation, and school-based prevention. However, the one-group pretest–posttest design contains no nonviolent comparison group. Accordingly, the study examines significant pre–post changes and does not establish a definitive causal effect of violent media exposure.

METHODOLOGY

The study employed a one-group pretest–posttest repeated-measures design. The same participants completed psychological measures before exposure to violent audiovisual material and again after exposure. This design permits examination of within-person change; however, without a nonviolent comparison group, observed differences cannot be attributed conclusively to the media exposure alone.

Participants were 100 male adolescent students with a mean age of 12.70 years ($SD = 0.67$). The sample was drawn from the accessible adolescent student population using the nonprobability/purposive recruitment approach described in the methodological summary.

The study materials contain an earlier reference to simple random sampling; therefore, the actual recruitment procedure should be verified against the original field records before final submission. The sample was restricted to male adolescents, limiting generalization to female and gender-diverse adolescents.

Violence exposure was operationalized as approximately 30 minutes of violent movie clips extracted from Tamil-language films. The clips were selected because they contained violent content. The available study material does not provide a standardized coding system for violence frequency, intensity, duration, or context; consequently, the stimulus is described as a set of violent movie clips rather than assigned a quantitative violence score.

Overall aggression was assessed using the R. L. Bhardwaj Aggression Scale, described as a 28-item self-administered measure for individuals aged 10 years and above, with five-point responses. The State–Trait Anxiety Inventory (STAI) was used to assess state and trait anxiety.

The Buss–Perry Aggression Questionnaire (BPAQ) was used to assess physical aggression, verbal aggression, anger, and hostility. The original BPAQ contains 29 items with a five-point response format (Buss & Perry, 1992). The exact age-appropriate STAI form used in the original data collection should be verified because the reported mean participant age was 12.70 years.

Participants first completed the pre-exposure assessment, followed by approximately 30 minutes of violent movie clips and the post-exposure assessment using the same measures. The available study material reports the post-test interval as 15 days in one methodological summary but one week elsewhere; this interval should be confirmed from the original data-collection records.

Descriptive statistics were calculated for participant characteristics and outcome scores. Paired-samples t tests compared pre-exposure and post-exposure means, with 99 degrees of freedom. Within-person effect sizes were estimated as Cohen's $d_z = t/\sqrt{n}$. Ninety-five percent confidence intervals for mean differences were derived from the reported mean differences and t statistics. Because participant-level raw data were not available, the effect sizes and confidence intervals are derived estimates accordingly.

RESULTS AND DISCUSSION

Sample Characteristics

The sample comprised 100 male adolescent students. The mean age was 12.70 years (SD = 0.67). The available study material describes most participants as approximately 13 years old.

Table 1 Participant Age Characteristics

Characteristic	M	SD	N
Age (years)	12.70	0.67	100

Pre–Post Changes in Psychological Outcomes

Paired-samples *t* tests indicated significant increases from pre-exposure to post-exposure assessment across all seven reported outcomes. Table 2 presents the descriptive statistics, mean changes, test statistics, effect sizes, and confidence intervals.

Table 2 Pre-Exposure and Post-Exposure Differences in Psychological Outcomes

Outcome	Pre M	Pre SD	Post M	Post SD	Mean Δ	t(99)	p	d _z	95% CI for Δ
Aggression	81.90	8.20	103.70	15.60	21.80	12.08	< .001	1.21	18.22–25.38
State anxiety	40.60	10.10	47.60	5.20	7.00	6.03	< .001	0.60	4.70–9.30
Trait anxiety	42.90	8.80	50.90	5.90	8.00	7.73	< .001	0.77	5.95–10.05
Physical aggression	23.40	5.06	31.70	6.40	8.30	10.18	< .001	1.02	6.68–9.92
Verbal aggression	14.30	4.10	19.30	5.20	5.00	7.10	< .001	0.71	3.60–6.40
Anger	18.80	5.50	23.10	5.90	4.30	5.30	< .001	0.53	2.69–5.91
Hostility	8.70	6.70	26.10	5.90	17.40	7.90	< .001	0.79	13.03–21.77

Note. Mean Δ = post-exposure mean minus pre-exposure mean. Effect sizes are estimated from the reported paired-samples *t* statistics as $d_z = t/\sqrt{n}$. Confidence intervals are derived from the reported mean differences and *t* statistics. Because participant-level raw data were not available, these are derived estimates.

The sample consisted of 100 male adolescent students. The mean age was 12.70 years ($SD = 0.67$), and the available study material describes most participants as approximately 13 years old. Thus, the findings primarily represent a relatively homogeneous group of early adolescent male students.

Paired-samples t tests showed significant increases from pre-exposure to post-exposure assessment for all seven psychological outcomes. Overall aggression increased from $M = 81.90$ ($SD = 8.20$) before exposure to $M = 103.70$ ($SD = 15.60$) after exposure, a mean increase of 21.80 points, $t(99) = 12.08$, $p < .001$, $d_z = 1.21$, 95% CI [18.22, 25.38]. This was the largest standardized within-person change and represents a large effect.

State anxiety increased from $M = 40.60$ ($SD = 10.10$) to $M = 47.60$ ($SD = 5.20$), a mean increase of 7.00 points, $t(99) = 6.03$, $p < .001$, $d_z = 0.60$, 95% CI [4.70, 9.30]. Trait anxiety increased from $M = 42.90$ ($SD = 8.80$) to $M = 50.90$ ($SD = 5.90$), a mean increase of 8.00 points, $t(99) = 7.73$, $p < .001$, $d_z = 0.77$, 95% CI [5.95, 10.05]. These results indicate significant pre–post differences in both forms of anxiety. However, the trait-anxiety finding requires caution because trait anxiety is conceptualized as a relatively stable characteristic.

The four BPAQ dimensions also increased. Physical aggression increased from $M = 23.40$ ($SD = 5.06$) to $M = 31.70$ ($SD = 6.40$), a mean difference of 8.30 points, $t(99) = 10.18$, $p < .001$, $d_z = 1.02$, 95% CI [6.68, 9.92]. Verbal aggression increased from $M = 14.30$ ($SD = 4.10$) to $M = 19.30$ ($SD = 5.20$), a mean difference of 5.00 points, $t(99) = 7.10$, $p < .001$, $d_z = 0.71$, 95% CI [3.60, 6.40]. Anger increased from $M = 18.80$ ($SD = 5.50$) to $M = 23.10$ ($SD = 5.90$), a mean difference of 4.30 points, $t(99) = 5.30$, $p < .001$, $d_z = 0.53$, 95% CI [2.69, 5.91]. Hostility increased from $M = 8.70$ ($SD = 6.70$) to $M = 26.10$ ($SD = 5.90$), a mean difference of 17.40 points, $t(99) = 7.90$, $p < .001$, $d_z = 0.79$, 95% CI [13.03, 21.77]. Effect sizes ranged from moderate to large, with the largest effects for overall aggression and physical aggression.

The overall pattern is consistent with research suggesting an association between violent media and aggressive responses. Bandura et al. (1961) demonstrated that children could reproduce aggression after observing aggressive models, providing a foundation for observational learning. Anderson and Bushman (2001) reported associations between violent video-game exposure and aggressive behaviour, cognition, affect, and physiological arousal. Anderson et al. (2003) found a broader association between media violence and aggressive behaviour across several media formats. The present findings are therefore compatible with the proposition that violent audiovisual material may be followed by changes in aggressive responses.

The increases in physical and verbal aggression indicate that the observed change was not restricted to one behavioural form. The large effect for physical aggression and moderate-to-large effect for verbal aggression are consistent with the multidimensional model of aggression proposed by Buss and Perry (1992). Anger also increased, supporting the possibility that emotional arousal and aggressive responses may occur together following exposure to salient violent material.

The increase in hostility is noteworthy because hostility represents a cognitive-affective orientation involving negative expectations, mistrust, and antagonistic interpretations. The 17.40-point increase and estimated effect size of 0.79 indicate a substantial pre–post difference. However, aggressive cognition and interpretation were not directly measured. The finding should therefore be interpreted as a change in self-reported hostility rather than evidence of a specific cognitive mechanism.

State anxiety increased after the study period. Violent material can be emotionally arousing and may produce tension or apprehension, making this change theoretically plausible. Madan et al. (2014) also examined the relationship between media violence and anxiety during adolescence. Nevertheless, the post-test interval should be confirmed because the study materials report both one week and 15 days. If the assessment occurred 15 days after exposure, the result cannot be interpreted simply as an immediate emotional reaction.

Trait anxiety also increased significantly. Because trait anxiety reflects a relatively enduring tendency, a short-term increase may reflect contextual influences, repeated testing, response characteristics, or other uncontrolled factors rather than lasting personality change. The appropriate conclusion is that reported trait-anxiety scores differed between assessments, not that violent media permanently altered trait anxiety.

The findings are broadly compatible with Social Learning Theory and the General Aggression Model. Violent characters provide observable models of aggressive behaviour, while violent scenes can serve as situational inputs that activate aggressive concepts and affective arousal. However, the study did not measure imitation, aggressive scripts, physiological arousal, or mediating and moderating variables, so these mechanisms cannot be directly tested.

Practical implications are primarily preventive. Schools can provide media-literacy programmes that help adolescents distinguish fictional portrayals from realistic consequences and recognize when aggression is presented as rewarding or acceptable. Parents and caregivers can use active mediation by discussing violent scenes, their consequences, and prosocial alternatives. Nathanson and Cantor (2000) demonstrated the relevance of active mediation in reducing aggression-promoting responses to violent cartoons.

Several limitations constrain interpretation. The absence of a nonviolent control group means that maturation, repeated testing, expectancy, contextual factors, and other events between assessments cannot be ruled out. The male-only sample and accessible recruitment approach limit generalizability. The violence stimulus was not quantified using a standardized coding framework, and the exact STAI version requires confirmation. Self-report measures may also be affected by response bias. Potential factors such as previous media exposure, family environment, peer influence, and baseline exposure to violence were not controlled.

Despite these limitations, the study provides a focused repeated-measures examination of multiple psychological outcomes in the same adolescent participants. Future research should use controlled or randomized designs, larger and more diverse samples, standardized violence coding, validated age-appropriate measures, and repeated follow-up assessments. These improvements would allow stronger conclusions about whether observed changes are specifically associated with violent media exposure and whether they persist over time.

CONCLUSION

The present study examined pre-exposure and post-exposure differences in aggression, anxiety, and hostility among 100 male adolescent students following exposure to approximately 30 minutes of violent movie clips. Significant increases were observed across all seven assessed outcomes: overall aggression, state anxiety, trait anxiety, physical aggression, verbal aggression, anger, and hostility. Overall aggression showed the largest within-person effect, followed by physical aggression, hostility, trait anxiety, verbal aggression, state anxiety, and anger. The consistent direction of change suggests that the exposure period was followed by measurable differences across behavioural, emotional, and cognitive-affective domains.

The increase in overall aggression and the changes in physical and verbal aggression are broadly consistent with Social Learning Theory and previous research on media violence. Observational learning provides a plausible explanation for how aggressive models presented in media may become available for imitation or activation. The General Aggression Model also provides a useful framework because violent media can operate as a situational input that may influence cognition, affect, and arousal. The present study did not directly measure aggressive scripts, imitation, physiological arousal. These theoretical explanations should therefore be regarded as plausible interpretations rather than mechanisms demonstrated by the study.

The anxiety findings require particular care. State anxiety increased, which may be compatible with the emotionally arousing nature of violent material. Trait anxiety also increased, but trait anxiety is generally conceptualized as a relatively stable individual characteristic. Consequently, the observed pre-post difference

should not be interpreted as evidence of permanent personality change. Confirmation of the actual interval between exposure and post-test is also important before drawing conclusions about the timing or persistence of anxiety changes.

The study has practical relevance for schools and families. The findings support preventive media-literacy education that helps young people critically evaluate violent content, identify unrealistic portrayals of aggression, and understand the consequences of aggressive behaviour. Parents and caregivers may use active mediation to discuss violent scenes and encourage reflection rather than relying only on restrictions. School counsellors can complement media-literacy activities with emotional-regulation and conflict-resolution skills. These implications should be framed as preventive strategies rather than evidence that exposure to any single violent programme or film inevitably produces aggression. The principal limitation is the one-group pretest–posttest design. Without a nonviolent comparison group, alternative explanations such as repeated testing, expectancy, contextual influences, maturation, or other events cannot be excluded. The male-only sample and accessible recruitment approach also restrict generalizability. Methodological details requiring verification include the exact sampling procedure, post-test interval, age-appropriate STAI form, ethical documentation, and characteristics of the violent clips.

In conclusion, the study demonstrates significant within-person increases in several psychological outcomes following the exposure period, while not establishing a definitive causal effect of violent media. Future research should use controlled or randomized designs, larger and more diverse samples, standardized stimulus coding, and longitudinal follow-up. Such research would clarify immediate and longer-term psychological responses to media violence and identify factors that may increase or reduce adolescents' susceptibility to its effects.

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