

For Video Games, Bad News Is Good News: News Reporting of Violent Video Game Studies

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Abstract

News coverage of video game violence studies has been critiqued for focusing mainly on studies supporting negative effects and failing to report studies that did not find evidence for such effects. These concerns were tested in a sample of 68 published studies using child and adolescent samples. Contrary to our hypotheses, study effect size was not a predictor of either newspaper coverage or publication in journals with a high-impact factor. However, a relationship between poorer study quality and newspaper coverage approached significance. High-impact journals were not found to publish studies with higher quality. Poorer quality studies, which tended to highlight negative findings, also received more citations in scholarly sources. Our findings suggest that negative effects of violent video games exposure in children and adolescents, rather than large effect size or high methodological quality, increase the likelihood of a study being cited in other academic publications and subsequently receiving news media coverage.

Keywords: video games, news media, publication bias, child development

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Introduction

WHETHER VIOLENT VIDEO games cause aggression and the extent to which this is so has been a sore spot of contention in the academic literature for decades.¹ Despite extensive research, there is no consensus among members of the academic community on the reality of the relationship between violent video games and aggression.² The evidence consists of a conflicting series of articles, some suggesting violent video games are likely to cause aggression³ while others refute such claims.⁴ With such a conflicting evidence base, it is worth exploring avenues by which existing research may inform public opinion.

Researchers have more recently started to examine the various social and political processes which could contribute to the general public's understanding and interpretation of the potential link between violent video games and aggression (as well as crime). Findings suggest that public's understanding is based on a variety of factors, including an individual's subjective interpretation and own biases concerning the topic,⁵ ideological positions of professional organizations,⁶ opportunistic actions of politicians,⁷ and epistemological problems inherent to the field.⁸ This article aims to add to this newly scrutinized area of video game research by examining several important contributors to, and

specific predictors of the news media coverage of published violent video game effects studies.

Research on effects of violent video games

To better understand newer research on the social and political influences on the public's perception of the link between violent video games and aggression, it is worth summarizing the academic debate. Among various potential effects of exposure to violent video games, aggression has been the most studied.⁹ Both, some individual studies¹⁰ and meta-analyses,³ have linked violent games to aggression. Some academics have made unsupported claims in linking violent video game play and criminal behavior. For example, when commenting on how serial killers' criminal urges influenced their future behavior, Hickey¹¹ stated "using alcohol, pornography, or other such types of graphic literature may be useful in expediting the offender's urge to kill"^(p113) and that video game research has "yielded some additional insights into aggressive behavior"^(p133). He then cited several studies on the relationship between violent video games and aggression, none of which was conducted on samples of serial killers.

A growing body of evidence contradicts these claims and points toward important methodological flaws in these

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studies. Ward¹² noted that the association between violent video game play and fighting in adolescents was only modest and not statistically significant once additional demographic variables were controlled. Ferguson and Kilburn¹³ pointed out that the abovementioned findings by Anderson et al.³ relied heavily on bivariate correlations instead of more sophisticated multivariate analyses. Anderson et al.'s³ own analysis produced considerably weaker effect sizes when controlling for one or two variables. Ferguson⁴ highlighted several pervasive problems in previous research, including the use of mismatched games and failure to pretest the participants' levels of aggression in experimental studies, the use of nonstandardized aggression measures and extrapolating findings based on nonclinically relevant measures to explain mass shooting incidents. Other problems included failure to control for "third variables", selective interpretation of findings, selection bias in literature reviews, and lack of generalizability to real-world violence.¹⁴ Some studies even showed a decrease in real-life violence.¹⁵

Authors have argued that since homicide rates in countries such as the United States have declined with the rise of violent video game play, other societal factors should be considered.¹⁶ Adachi and Willoughby⁸ found that the competitive nature rather than the violent content of video game play predicted aggression. Waddell and Peng¹⁷ similarly found that competitive game play was associated with aggression, whereas gaming that was cooperative by nature increased cooperation among players. Some players begin playing violent video games with already higher-than-average trait aggression.¹⁸ Research in potentially "at-risk" populations such as individuals with neurodevelopmental or psychiatric conditions did not support the hypothesis of their vulnerability to video game violence effects.^{20,21} Any association between violent video game play and players' aggression thus appears less straightforward than previously suggested; single explanations such as desensitization²² seem unlikely.

Politics and video games

Violent video games have become a source of political capital for politicians and professional agencies with an interest in taking a stance against violent games.²³ In other words, politicians oppose violent video games because, "elected public officials are politicians who may capitalize on the news to further their political agendas and to gain support of voters".^{24(p3)} Politicians often make use of symbolic crimes¹⁴ by blending rhetoric and symbolic policy initiatives (which are also popular with the public) to ease public fear of crime.²⁵ Copenhaver's⁷ qualitative document analysis of bills proposed since the early 1990s found politicians propose bills designed to regulate or address the perceived problems associated with violent games, for example, taxation of violent video game sales and warning labels stating violent video games cause aggression; such proposals continued even after the Supreme Court's 2011 ruling in *Brown vs. Entertainment Merchants Association*.

Media effects on public's understanding

The news media play an important role in shaping the public's understanding of, and facilitating political stances on crime.²⁴ Such role is often understood in the academic

literature through the interpretive sociological notion of social constructionism.²⁶ According to this theory, human beings create their social realities through processes of social relationships and communication; this created reality often diverges from objective reality.¹⁴ Potter and Kappeler²⁷ highlighted many instances where the news media were used to construct crime problems and shape the public's understanding of the reality of crime. Ferguson⁶ also pointed toward the consequences of the politicians' use of research on violent video games' effects that had actually been discredited within the academic community.

An additional concern is that of accuracy in today's American journalism. The financial pressures faced by newspaper companies and decreases in newspaper sales²⁸ contribute to news media attempts to capture readers' attention with intriguing constructions. News agencies are responsible for determining what types of stories exhibit "newsworthiness," therefore, journalists would select those elements more likely to generate public interest and lead to increases in revenue.²⁸ Arguably, it would be more difficult to attract public interest in reading articles that did not immediately lead the reader to believe violent video games have dramatic negative influences on players. The publication bias in the relevant literature⁴ adds to this by potentially limiting the amount and quality of scientific evidence to which journalists have access.

The current study

This study examined articles published in academic journals that reported on the effects of exposure to violent video games in children and adolescents. The following hypotheses were tested:

H1: Studies with a large effect size were more likely to receive newspaper coverage compared with studies with a small or null effect size.

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H2: Studies with a large effect size were published in high impact compared with low-impact journals.

H3: Studies with a large effect size were published in high-impact journals independently of study quality.

Methods

Included studies

The 68 studies included in the present analysis had been previously included in a recent meta-analysis of the effects of video game use on a range of outcome variables in child and adolescent samples.⁴ We selected those studies that specifically examined exposure to violent video games as the predictor variable, as opposed to general video game use. Initial screening was done by reading the abstract (initially 750 hits), with confirmation coming once the entire article was scrutinized for methods. One hundred one studies on a variety of video game issues were reduced to the current sample once focused on the issue of violence in games. Aggression was the outcome variable in the majority of studies (86.76 percent); other outcome variables were prosocial behavior (11.76 percent) and depression (1.47 percent). Studies were published between 1984 and 2014, with the majority (57, 86.82 percent) being published in the 2000s

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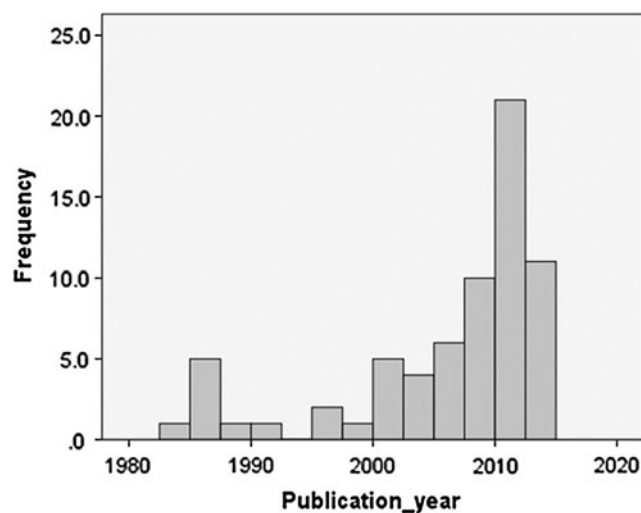


FIG. 1. Frequency of violent video game studies published by year.

and only a small number in the 1980s (seven studies) and 1990s (four studies). Figure 1 presents data on studies published by year.

Studies were coded for several variables, including outcome, effect size, the presence of citation bias, year published, and the impact factor of the journal in which the study was published. Citation bias occurs when authors only cite prior studies that agree with their hypotheses, failing to inform readers of controversies or inconsistencies in the field. Impact factor was not available for five studies as they were published in books, book chapters, or other similar outlets. For those studies with multiple outcomes, the effect sizes were combined into a single effect size (as per standard meta-analytical practice).

Study quality was assessed by using a “best practices” coding employed in the original meta-analysis. A full accounting of this procedure is provided in the original article and was not deviated from here. Of the studies included, 18 (26.5 percent) met these criteria for best practices. The best practices criteria were designed to consider recent controversies over measurement and internal validity in video game experiments. Studies had been assessed on the following criteria:

- The use of well-validated, standardized outcome measures. Many studies employ unstandardized, poorly validated measures, increasing the potential for Type I error. Measures, whose use change without explanation from one study to another, including within the same research group, and which have not been validated against clinical measures of aggression, would be examples of poor measures.
- Careful matching of video games and careful control of game content in experimental studies. Recent analyses⁸ have indicated that many experiments introduced confounds and potential false positives by failing to match video games on variables other than violence. Matching a highly competitive first-person shooter game with strong characters and narrative with a relaxing puzzle game without these features would be an example of poor matching of conditions.

(c) In addition, lastly, the control of gender, trait aggression, and prior aggression in correlational/longitudinal studies.⁴ Such controls are considered essential to isolate the potential effects of violent video games from other, third variables.

All included studies were examined for whether they had received newspaper coverage using the LexisNexis database, which includes coverage from over 1,600 newspapers. For each study, we conducted searches by using the name of first author, title of the journal, publication year, and the topic “video games.” Studies were coded as Yes/No for whether they had received newspaper coverage. Data for the study can be found at: christopherjferguson.com/NewspaperStudy.xlsx. A full list of studies included is available on request.

Results

To test the first hypothesis, a binomial logistic regression was employed using newspaper coverage as the dependent variable, with study effect size, publication year, journal impact factor, and best practices as predictor variables. However, this model proved to be highly unstable given collinearity between effect size and the other predictor variables. As such, a comparison analysis of studies with and without newspaper coverage was conducted using *t* test with effect size as the outcome. Among the studies considered, 18 (26.5 percent) had received some newspaper coverage. Results indicated that effect sizes were nearly identical for studies with ($M=0.0879$, standard deviation [SD]=0.107) and without ($M=0.0773$, $SD=0.099$) newspaper coverage [$t(66)=0.380$; $p=0.707$].

Although it no longer included our main predictor variable (i.e., effect size), we nonetheless ran the binomial logistic regression with the remaining predictor variables, which did not result in an unstable model. This exploratory analysis resulted in a significant regression model ($\chi^2=17.86$, $p=0.001$; Nagelkerke $R^2=0.359$). Only publication year ($B=0.208$, standard error [SE]=0.103; Wald=4.099 $p=0.043$) was significantly associated with newspaper coverage: recent studies were more likely to be covered by newspapers. There was an inverse although nonsignificant relationship between best practices and newspaper coverage ($B=-1.401$, $SE=0.751$; Wald=3.479 $p=0.062$). As noted earlier, 18 studies (26.5 percent) met best practices criteria.

To examine the other two hypotheses, we employed stepwise regression with journal impact factor as the outcome and effect size, best practices and publication year as predictors. The resultant model was significant [$F(1, 61)=4.77$, $p=0.033$; $adjR^2=0.057$.] Again, only publication year was significantly associated with journal impact factor ($\beta=0.269$, $p=0.033$). Neither effect size nor best practices were significantly associated with publication in high-impact journals.

Exploratory follow-up analysis

Although not part of our original hypotheses, we also obtained data on the number of PsycINFO citations for each study. Predictor variables included effect size, publication year, journal impact factor, and best practices, with results run in a stepwise model. The resultant model was significant [$F(2, 58)=5.53$, $p=0.006$; $adjR^2=0.131$.] In this model, the

number of citations was negatively associated with publication year ($\beta = -0.323$, $p = 0.010$). The number of citations was also inversely related to best practices ($\beta = -0.277$, $p = 0.026$).

Discussion

This article aimed to add to the existing literature by examining a number of potential contributors to, and specific predictors of the news media coverage of published studies on the potential effects of violent video games exposure in children and adolescents. By controlling for a range of variables we were able to identify factors predictive of whether news media outlets would inform the public about particular studies published in academic journals.

Contrary to our hypotheses, study effect size was not a predictor of either newspaper coverage or publication in high-impact journals. It is worth noting that all included studies were conducted in children and adolescents and could therefore have smaller effect sizes compared with similar studies in a population of young adults such as college students.^{30,31}

Our findings of an association between study publication year and both newspaper coverage and journal impact factor indicate that research on the effects of violent video games exposure in children and young people has gained increasing attention from both the academic field and the news media coverage in recent years. It is worth noting that the great majority of the studies examined in this article were published in the 2000s, suggesting that video game violence exposure in children and adolescents became a “hot” topic for researchers at that time. High-impact journals appear to recently publish more studies in this field, suggesting a potential trend. It is therefore worrying that neither effect size nor the overall methodological quality of such studies seems to predict publication in high-impact journals. These findings contradict the belief that high-impact journals publish better research articles in this field, and suggest that other factors play a role in ensuring publication success. This would also warrant further exploration in future studies. The inverse relationship between publication year and the number of PsycINFO citations could be explained by the fact that recent publications were unlikely to have received a high number of citations.

Although study quality did not predict publication in high-impact journals, poorly designed studies (those not meeting best practices criteria) were more likely to be cited by other academic publications and potentially receive more news media coverage. The inverse relationship between best practices and newspaper coverage suggests that newspapers were potentially more likely to cover poorer quality studies. We note that the interpretation of results with p -values above 0.05 is difficult and Type I error rates become higher. However, the effect size of this result was fairly high and the reduced p -value was likely due to study power. Furthermore, we found a similar, inverse relationship between best practices and number of PsycINFO citations that indicated that studies of poorer quality received more citations. Although the result of tentative analysis and thus requiring cautious interpretation, these findings would be worth further, more detailed exploration in future studies.

The greater attention that poorly designed studies potentially receive from both academics and the public is a worrying issue and definitely requires clarification. This is more so as previous research has indicated that poorly designed studies were more likely to show negative effects of violent video games’ exposure.⁴ This seems to suggest that findings of a negative effect of violent video games’ exposure, rather than a large effect size or high methodological quality, increase the chances for a study to receive attention in the academic field as well as news media coverage. One could also infer that it is thus the negative effects that increase the likelihood of a study being published in a high-impact journal. One potential explanation could be that negative effects feed into pre-existing beliefs among the general public as well as academics on the harmful effects of violent video game playing in children and young people. There is also the question on the nature and quality of reporting of results in academic articles, with authors sometimes over-emphasizing the scientific or practical importance of weak effects.

Although publication bias on video game violence effects literature has previously been investigated, this is the first exploration of factors associated with the news media coverage of relevant research in children and adolescents. Our findings are consistent with previous reports, highlighting publication bias as a serious problem in this field.^{4,31} Our results are limited by the number of included studies, therefore impacting on study power.

High-impact journals are generally seen as gatekeepers between the full range of scientific studies and news media. Articles in high-impact journals may benefit from highly visible press releases, such as from the professional organizations which publish the journals in question (e.g., the American Psychological Association, the Association for Psychological Science). Authors have previously pointed out that journal impact factor and study quality are poorly associated,^{32,33} suggesting that the journals’ gatekeeping role is more likely linked to the “newsworthiness” nature of any scientific evidence. If high-impact journals are more inclined to publish research showing negative effects of violent video game exposure, even if such effects are relatively weak and mostly come from poor rather than high-quality studies, and such research is most visible to journalists, this would further distort the perspective of the scientific evidence among the general public.

Author Disclosure Statement

No competing financial interests exist.

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Supplementary Data

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