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Examining the Relationship Between Media Use and Aggression, Sexuality, and Body Image

Temple Northup
University of Houston - Main, temple@uh.edu

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Introduction

Shortly after the mass shooting in the midnight screening of *Batman: The Dark Knight Rises* that occurred in the summer of 2012, some commentators began to point out that the shooter may have been, in some manner, imitating what he had seen in the media, either perhaps copying the popular villain “the Joker”¹ or even one of the stories from the *Batman* comic series.² Although it remains unclear as to the exact motives of the shooter, the notion that he was imitating something he saw in the media is a common and disturbing storyline that is frequently mentioned as a justification for limiting what the media can and cannot show. Rather than jump to any conclusions, though, the more pragmatic approach would be to use this as an opportunity to pause and consider what effect, if any, the media may actually have on individual behaviors or attitudes.

In addition to speculating about the ways media may cause an individual to become aggressive or violent, there are two other topics that are particularly relevant as they too lead to particularly problematic behavioral outcomes. The first is the media’s influence on sexuality and sexual permissiveness; the second is the media’s impact on body image. Like aggression, both of these can lead to negative outcomes and cause individuals to engage in risky behaviors.

The purpose of this research is to explore what role, if any, the media play in creating individuals who act in a more aggressive manner, are more sexually promiscuous, or who have a poor body image. In order to fully appreciate this, this research will be contextualized within the broader communication field with a brief review of some of the key literature. It should be noted that the term “media” is an all-encompassing concept that can relate to many different mediums, ranging from television to computers to cell phones. Unless otherwise specified, whenever the term “media” or “media use” is used, it is referring to the overall consumption of different types of media, often because research findings have been consistent across platforms (eg, violent films and violent television shows cause similar effects). It will be highlighted when results are limited to specific types of media.

Effects of Media on Aggression

One of the most contested and discussed effects of the media relates to aggression. As the introduction above noted, it is common after any sort of violent event to hear speculation that the perpetrator was influenced to perform the act in some way because of the media. Although most social scientific research is interested in populations and not specific individuals, the outcry is, in some ways, supported by the research. Indeed, numerous

meta-analyses that have examined the relationship between media and aggression have found there to be a causal link.³⁻⁶

Generally speaking, the effects of media consumption on aggression can be considered from two different standpoints: cognitive or behavioral. When discussing cognitive effects, research generally supports the idea that heavy consumers of the media tend to perceive the world as a more dangerous place than it actually is.⁷ The reason for this is simple: the world on television is a violent one, so if one watches a lot of that mediated world, over time one will come to believe that the violent world on TV reflects the real world.⁸

When considering the behavioral effects of media consumption, critics typically argue that increased viewing of television leads to more aggressive behaviors.⁹ The process behind this effect is assumed to work through four mechanisms. The first is imitation, which suggests that individuals—and children in particular—imitate behaviors they see in the media.¹⁰ If the media present a violent world then it follows that it would create violent consumers. The second mechanism is desensitization, which means that as viewers of the media watch more and more violent material, it begins to affect them less and less.¹¹ The long-term effect of this is that they become more accepting of violence. The third mechanism is disinhibition, which directly results from desensitization.¹² As viewers become more accepting of violence and violent behavior, they themselves become empowered to behave in such a way—that is, their behavior becomes disinhibited. Finally, research suggests that the media causes arousal in viewers.¹³ Although this does not explain long-term effects, the arousal experienced from viewing violent material can cause one to react more violently in the short-term.

Importantly, it should be noted that the “reverse hypothesis” has generally not found support in academic research.¹⁴ Put simply, the reverse hypothesis states that media do not cause aggression but rather aggressive people tend to seek out the media (in particular, violent media). However, researchers consistently reject the argument, in part because longitudinal studies have never shown the reverse to occur. Therefore, correlations between media and aggression are typically viewed as providing support for the theory on media’s negative influence, although there is a recognition that correlations cannot demonstrate causation.

Effects of Media on Sexuality

As with aggression, there is generally great public interest in what effects heavy consumption of the media may have on one’s sexual attitudes and

behaviors. Researchers who have examined these effects tend to focus on one of three distinct arenas.

First, researchers have investigated the effects of the media on sexual arousal.¹⁵ Perhaps not surprisingly, numerous studies have found that the media, ranging from explicit films to internet pornography use, are able to sexually arouse the viewer.¹⁶⁻¹⁸ Although individuals may be aroused by different sexual stimuli, as well as different levels of explicitness, there is a consistent effect that consumers of sexually suggestive media often become aroused.¹⁹

Second, media consumption has been found to change values and attitudes over time (eg, becoming more accepting of rape).²⁰ Just as individuals can become desensitized to media violence, individuals can become desensitized to sexual behaviors presented in the media.²¹ The effect of this is behavior that was previously seen as scandalous or taboo becomes seen as normal. This change in values is particularly pronounced among men and heavy viewers of sexually explicit materials.²²

Finally, researchers also investigate the relationship between media consumption and sexual behaviors.²³ As with aggression, desensitization to sexual activities because of media content can lead to a disinhibitory effect, such that previously unpermitted sexual behaviors (including sexual intercourse itself) become common practice over time.

Although the “reverse hypothesis” has never specifically been investigated in relation to sexually explicit media, based on the similar pattern of research findings between aggression and sexuality, one could argue that correlations between media consumption and sexual attitudes are likely to find their cause in the former rather than the latter. That is, it is more likely that heavy consumers of explicit media have their attitudes changed over time to be more sexually permissive rather than sexually permissive people seeking out more sexually explicit material. Of course, correlational research—which is most common in this area—is unable to definitively answer the direction of the causation; nevertheless, it is worth noting that most communication researchers would argue it is the media that is the primary driving force of these relationships.

Effects of Media on Body Image

One final area of media research relates to the negative effects of media consumption on body image. Content analyses of the media consistently suggest that a very narrow definition of attractiveness is presented.²⁴ Specifically, the beauty ideal shown for women is usually White, young, and almost always very thin.²⁵ In fact, the size of women presented in the media is so consistently skinny that researchers refer to the beauty

standard presented in the media as the “thin ideal.” The primary focus of media research, then, is to understand how a constant and consistent exposure to the thin ideal influences one’s body image.

Using the theoretical lens of social comparison, research suggests the more one sees the beauty ideals in the media, the more one compares oneself to those ideals, which in turn causes dissatisfaction with the self because the ideals are almost impossible to achieve.²⁶ Therefore, heavy media consumption, especially among women but also among men (whose ideal is typically less-focused on becoming thin and more focused on being muscular), can lead to body dissatisfaction and dejection.²⁷ In fact, research investigating body dissatisfaction has found that body-related images are automatically processed and can unconsciously lead to negative psychological outcomes, such as depression.²⁸ Meta-analyses have also demonstrated a consistent effect such that media exposure to the thin ideal is related to body disturbance and dissatisfaction.²⁹

Although there is a growing body of experimental research trying to demonstrate causality, it is worth again mentioning the possibility of a “reverse hypothesis” as so many body image related studies are correlational in nature. As with aggression and sexuality, there is no clear reason to believe that it is body dissatisfaction that could be driving media use rather than the assumed direction of media use driving body dissatisfaction. Still, it is important to recognize the limitations of drawing conclusions from correlational data.

Implications

Taken together, previous research clearly suggests the media can negatively impact both attitudes and behaviors. It is important, then, to continually investigate how media influences individuals, both because of the attention the effects related to media tend to garner and because society is increasingly connected by and consumed in media. This present study will specifically examine the relationship between media consumption and aggression, sexuality, and body image. Because previous research has found that different types of media can cause different effects, a media use survey will be included that contains a number of different genres and media types to attempt to isolate any negative effects that have occurred.^{30,31}

This research will add substantially to the existing body of literature in two important ways. First, it will provide some of the most comprehensive and up-to-date effects research related to these three topics. Often, once an effect is established (eg, media consumption causes aggression), the research is not replicated or updated, which means that much of the cited research tends to be outdated. Considering

the constantly evolving media landscape, it seems wise to assess these effects often. Second, this study has a racially diverse sample. The research cited throughout the literature review is similar in that all of their samples contain insufficient numbers of non-White participants to draw any definitive conclusions. Although this is fairly common in a wide array of disciplines, to truly understand the negative effects the media may have, it is necessary to have a racially diverse sample to compare how the effects differ depending on racial groupings.

Method

In order to investigate the influence the media have on aggression, sexuality, and body image, a survey was conducted using the measured variables outlined below. For each of the three general concepts (aggression, sexuality, and body image), we used at least two dependent measures. First, a variable that measured the behavioral outcome related to each (eg, number of sexual partners as a behavioral outcome related to sexuality); second, a variable that measured the participants' attitudes toward the perceived social norms related to that behavior. It is hypothesized that the media can influence both the actual behaviors as well as how "normal" or "socially acceptable" those behaviors are seen.

Participants

A total of 407 undergraduate students at a large, public university located in the Southwestern United States participated for extra credit in their communication courses. The average age of the participants was 22.98 years, $SD = 4.96$, with roughly one-third of the participants being male. Approximately 37 percent of the sample was White, 25 percent Hispanic, 18 percent Black, and 14 percent Asian, meaning this was a fairly diverse sample that in many ways reflect the current make-up of the United States (although not perfectly in terms of gender). The survey was sent to 524 students, giving a response rate of 78%.

Procedure

During the final two weeks of September 2012, participants received a link to an online survey. The link was provided in an email that outlined the general purpose of the survey, how long the survey would take, and other pertinent information. If the participants clicked on the link, they would arrive at the launch page of the survey, where much of the information was repeated to ensure that they understood the purpose and length of the survey. Once they had indicated that they were over the age of 18 and willing to participate, they proceeded through the survey. The first set of questions they encountered related to their media consumption. Following

those were the questions related to the dependent variables listed below. Finally, participants complete demographic questions. Upon completion of the survey, the participants were directed to a thank-you page that included contact information for the principal investigator, should they have any questions about the study.

Media Variables

Media scholars have not converged to establish the best method for obtaining an accurate media use measure. The options range from the basic—asking participants to estimate the number of days per week a type of media (eg, television news) they consume—to the exceptionally detailed (eg, keeping a daily media diary). The measures listed below represent a hybrid of different approaches. For television use, we employed a more detailed instrument because we believed that participants can accurately report this. For other media use variables, such as general pornography use (regardless of medium) and magazine use, we used a less precise and more general measure.

Television Use. In order to gauge the duration each participant watched television each week, a series of questions was asked where each person had to estimate the total hours of television viewing during a “typical weekday” as well as a “typical weekend day”. Specifically, participants had to rate the number of hours they watched in the morning (6 AM – 12 PM), afternoon (12 PM – 6 PM), evening (6 PM – 12 AM), and late night (12 AM – 6 AM). We then summed their responses to each question to create the “typical” weekday and weekend day, and then used a weighted average to create each participant’s average television viewing hours per day, $M = 3.84$, $SD = 2.54$.

Video Game Use. In order to gauge the amount of time each participant plays video games, we employed the same technique as with television use. This created an average number of hours each participant played video games per day, $M = .86$, $SD = 2.01$.

Internet Use. In order to estimate the amount of time participants spent on the internet, we employed a similar technique as described above. This resulted in an average number of hours each participant spent online each day, $M = 6.15$, $SD = 3.51$.

Pornography Use. A series of variables was used to measure exposure to pornography (regardless of medium). The first simply asked participants at what age they first viewed something pornographic, $M = 13.83$, $SD = 3.43$. The second variable asked how frequently, on a scale from 1 (= never) to 5 (= all the time), did the participants currently view pornography, $M = 2.69$, $SD = 1.04$. The remaining questions asked participants to estimate how frequently they looked at pornography when

they were in middle school, $M = 1.78$, $SD = .99$, using the same four-point scale mentioned above with television use. Of note, 75 percent of the participants had indicated that they had viewed pornography at some point in their lives.

Television by Genre Use. To determine the extent to which participants watched different genres of television, each participant had to rate how frequently they watched a variety of programs. Specifically, each participant rated on a scale from 1 (= never) to 5 (= all the time) how frequently they watched a large list of different types of programming within three broad categories: comedic programs, dramatic programs, and reality series. For comedies, there were five sub-genres they rated for frequency (eg, animated comedies); for dramas, there were seven sub-genres (eg, medical dramas); and for reality, there were 17 sub-genres (eg, fashion-themed series). Their reported frequencies for each of the sub-genres were averaged to create a single-item composite that represented, on average, the frequency that the participants viewed the different types of programming. All composites represented reliable scales (alphas for comedy, drama, and reality were .79, .79, and .94 respectively). Average frequencies for each genre were: comedy, $M = 2.74$, $SD = .96$.; drama, $M = 2.31$, $SD = .81$.; and reality, $M = 2.04$, $SD = .86$.

Magazine Use. In order to gauge how frequently participants read magazines, which could include reading them in the traditional “print” format or online or on an e-reader, participants were asked, on average, how many minutes they spent reading magazines each day. Overall, participants spent a little over 15 minutes per day, $M = 15.93$, $SD = 34.11$.

Magazine by Genres Use. Participants were also asked to rate how frequently they read magazines from a list of eight possible genres (eg, sports magazines, fashion magazines, fitness magazines, etc.). Using principal components analysis to categorize the data, two primary factors emerged: women-focused magazines (which included the categories of Fashion, Women’s Lifestyle, Teen-focused, and Fitness) and men-focused magazines (which included Sports and Men’s Lifestyle). The reported frequencies of reading for each of the associated genres were then averaged to get an overall women-focused magazine use variable, $M = 1.91$, $SD = .83$, and an overall men-focused magazine use variable, $M = 1.58$, $SD = .79$.

Dependent Variables

For most of the dependent variables, we used reliable and validated measures. We created some measures, such as those related to

perceived norms, for this research and believe that they meet, at a minimum, face validity requirements.

Aggression. The 29-item Aggression Questionnaire³² was used to assess each individual's level of aggression based on four characteristics: anger, hostility, physical aggression, and verbal aggression. Each of the four factors were highly correlated, so all items were collapsed into a reliable (alpha = .92), single item measure of overall aggression, with scores ranging from 1 (=not at all like me) to 5 (=just like me), where higher numbers indicate a more aggressive personality, $M = 2.54$, $SD = .55$. This item serves as the primary dependent behavioral variable related to aggression.

Aggression Norms. To measure what participants thought in relation to how normal it was to act aggressively, they were each asked four questions (eg, I think most people have gotten into a physical fight), which they responded to on a 5-point strongly disagree-strongly agree scale. The four items created a reliable measure (alpha = .78), which was averaged to create the single composite variable, $M = 2.60$, $SD = .85$. This item serves as the primary dependent attitudinal variable related to aggression.

Sexual Experience. In order to gauge each participant's sexual behavior, we asked a series of questions beginning with the question as to whether they had ever engaged in sexual intercourse before. If the respondent indicated that they had, the participants were asked to estimate the total number of sexual partners each participant has had. This should provide some indication of how active sexually the participants are. Most participants had engaged in sexual intercourse (= 81.8 percent), with the average age of their first sexual experience being 16.75, $SD = 2.38$. The average number of sexual partners was 6.18, $SD = 8.85$. These items serve as the primary dependent behavioral variables related to sexuality.

Sexual Permissiveness. As an additional measure of sexuality, we used the 10-item sexual permissiveness scale from the Brief Sexual Attitudes Scale³³. These 10 items were reliable (alpha = .93) and were therefore averaged into one variable, $M = 1.95$, $SD = .69$, with the possible scores ranging from 1 (= not sexually permissive) to 4 (=highly sexually permissive). This item serves as one of the primary dependent attitudinal variables related to sexuality.

Sexual Norms. To measure what participants thought of how normal it was to be engaged in sexual activity, participants were asked a series of four questions (eg, It is seen as normal by my friends to have sex with someone you aren't in a serious relationship with). These four items represented a reliable measure (alpha = .83), $M = 2.83$, $SD = .70$. This

variable serves as the other dependent attitudinal variable related to sexuality.

Restricted Eating. To measure restricted eating habits, we used the 10 items related to restrained eating from the Dutch Eating Behavior Questionnaire³⁴. Participant scores could range from 1 (= highly restricted eating behavior) to 6 (=not restricted eating behavior), $M = 4.06$, $SD = 1.31$. This item serves as one of the dependent behavioral variables related to body image.

Bulimic Behavior. This was measured using six items from the Multidimensional Eating Disorder Inventory.³⁵ This scale was highly reliable ($\alpha = .90$). Participant scores could range from 1 (= frequently engaged in bulimic behavior) to 6 (= not frequently engaged in bulimic behavior), $M = 4.63$, $SD = 1.01$. This item serves as the other dependent behavioral variable related to body image.

Thin Ideal Internalization. To gauge the extent to which participants have internalized the thin ideal present in the media, we used the Sociocultural Attitudes Towards Appearance Questionnaire³⁶. This measure has 14 items and was highly reliable ($\alpha = .83$). Participant scores could range from 1 (= thin ideal not internalized) to 5 (= thin ideal highly internalized), $M = 3.14$, $SD = .61$. This item serves as one of the dependent attitudinal variables related to body image.

Body Dissatisfaction. This variable was measured using nine items from the Multidimensional Eating Disorder Inventory.³⁷ This scale was highly reliable ($\alpha = .85$). Participant scores could range from 1 (=satisfied with self) to 5 (=not satisfied with self), $M = 2.92$, $SD = .56$. This item serves as other dependent attitudinal variable related to body image.

Data Analysis

We used a series of statistical tests in order to examine what effect media consumption had on the dependent measures. The first step of this analysis used correlations among the media measures and dependent variables, which should illuminate whether any relationships exist. Based on those results, we conducted follow-up analyses, including regressions to isolate which variables may contribute most to a given relationship. We did all of these analyses not only with the overall sample, but also broken down by gender and race. Finally, for each of the major topics—aggression, sexuality, and body image—we used a structural equation model allowing for relationships among multiple variables to be simultaneously examined.

Results: Media & Aggression

In order to investigate the relationship between media consumption and aggression, an initial series of correlations was conducted. Results suggest that Television Use, Internet Use, and Video Game Use all positively correlated with the behavioral measure of aggression ($r_s = .18, .15, .12$ respectively, all $p < .05$). Television Use was also positively correlated with attitudes about the social norms of acting aggressively, $r = .13, p < .05$. Of note, when considering genre use within television programming, Reality, Dramatic, and Comedic programming use all correlated with aggression, too ($r_s = .11, .13, .11$ respectively, all $p < .05$).

To try to isolate the influence of different types of media, we performed regression analyses with Television, Internet, and Video Game Use entered to predict aggression (see Table 1 for all regression coefficients from this and subsequent analyses). As expected, the overall model was significant, $R^2 = .05, F(3, 403) = 6.82, p < .001$. Of the three predictors, both Television and Video Game Use were significant, whereas Internet use was not.

Next, the data were split by gender to determine if there were any differences based on participant sex. Considering males first, another regression was conducted with Television, Internet, and Video Game Use again all being entered to predict aggression. Once again, the overall model was significant, $R^2 = .06, F(3, 133) = 2.91, p < .05$. However, Internet and Video Game Use were the significant predictors, not Television Use. Considering women next, the overall model was again significant, $R^2 = .04, F(3, 267) = 3.73, p < .05$. Of the individual predictors, only Television Use was significant.

Next, we examined differences based on race by running the regressions separately for each racial group. Considering first the White participants, the model was significant, $R^2 = .07, F(3, 145) = 3.65, p < .05$. Of the three predictors, Television Use and Internet Use were significant. Among Black participants, the overall model approached significance, $R^2 = .08, F(3, 69) = 2.10, p = .11$, with Television Use being the only media type that appeared to matter. For the Hispanic participants, the model also approached significance, $R^2 = .07, F(3, 98) = 2.38, p < .10$, with Video Game Use being the only media type that yielded any results. Finally, for Asian participants, the model was not significant, $F(3, 54) < 1$.

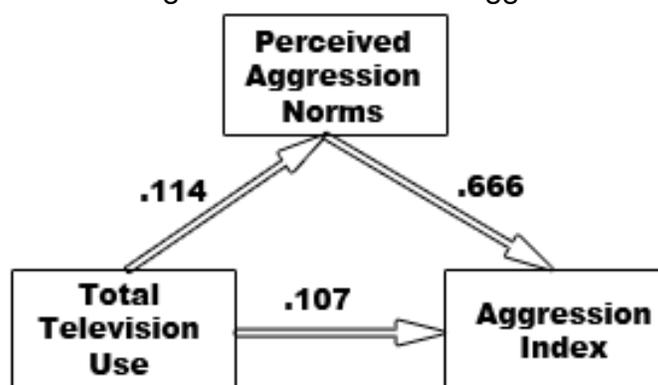
Table 1. Summary of regression coefficients for media use variables predicting aggression.

Variables	B	SE B	β
Model 1:			
All Participants			
Television Use	0.029	0.011	0.132 ^a
Internet Use	0.011	0.008	0.067
Video Game Use	0.031	0.014	0.114 ^a
Model 2:			
Male Participants			
Television Use	0.013	0.018	0.066
Internet Use	0.019	0.011	0.151 ^b
Video Game Use	0.03	0.018	0.148 ^b
Model 3:			
Female Participants			
Television Use	0.042	0.015	0.187 ^a
Internet Use	0.003	0.011	0.016
Video Game Use	0.01	0.023	0.028
Model 4:			
White Participants			
Television Use	0.038	0.019	0.174 ^a
Internet Use	0.012	0.014	0.08
Video Game Use	0.033	0.02	0.13 ^b
Model 5:			
Black Participants			
Television Use	0.043	0.024	0.239 ^b
Internet Use	0.015	0.017	0.107
Video Game Use	-0.006	0.028	-0.028
Model 6:			
Hispanic Participants			
Television Use	0.033	0.029	0.119
Internet Use	-0.009	0.017	-0.058
Video Game Use	0.076	0.038	0.208 ^a
Model 7:			
Asian Participants			
Television Use	0.007	0.035	0.029
Internet Use	0.022	0.027	0.11
Video Game Use	0.038	0.04	0.128

a. $p < .05$ b. $p < .01$

In a final step to understand the full impact of television exposure on perceived norms and behaviors, the structural equation modeling software Amos was used to test the model shown in Figure 1. Although the Chi-square statistic was significant, the goodness of fit measures suggest the model does fit the data well, $\chi^2 = 225.09$, $df = 115$, $p < .01$, $CFI = .95$, $RMSEA = .05$. All specified path coefficients were significant, meaning that television use simultaneously predicted social norms and behavior, and that perceived social norms also predicted aggressive behavior.

Figure 1. Model outlining effects of media on aggression



Results: Media and Sexual Behaviors

The first step to investigate the media's influence on sexual behaviors and attitudes is to perform a series of correlations among the media variables and the variables related to sexuality. Unlike with aggression, none of the primary media variables (television, internet, or video game use) correlated with sexual behavior or attitudes.

One particular type of media, regardless of where it is consumed (ie, regardless of whether it is viewed online or on the pages of magazines), believed to influence sexual attitudes and behaviors is pornography. To investigate the effects of explicit material, the reported first age of viewing pornography was used along with participants self-reported pornography use when 10-13 years old as well as their current use.

Considering first the age pornography was first viewed (see Table 2 for full correlation matrix), there was a significant relationship between first exposure and number of sexual partners, sexual permissiveness, and perceived social norms related to sexual behavior. Next, considering pornography use when 10-13 years old and in college, there were positive

correlations with number of partners, sexual permissiveness, and sexual norms.

Table 2. Correlations for all participants among Age of First Porn Exposure, Frequency of Porn Use, Sexual Permissiveness, Perceived Sexual Norms, and Number of Sexual Partners

Variables	1	2	3	4	5	6
1. Age of First Porn Use	*	-0.48 ^a	-.22 ^a	-0.19 ^a	-0.19 ^a	-0.20 ^a
2. Middle School Porn Use		*	.40 ^a	0.30 ^a	0.16 ^a	0.17 ^a
3. College Porn Use			*	.41 ^a	.24 ^a	.22 ^a
4. Sexual Permissiveness				*	0.45 ^a	0.4 ^a
5. Perceived Sexual Norms					*	0.3 ^a
6. Number of Sexual Partners						*

a. $p < .05$

Next, the data were split by gender with the same correlations run again (see Tables 3 and 4). Among male participants, there was a positive relationship between age of first pornography exposure and college pornography use with sexual permissiveness, sexual norms, and number of sexual partners, but no significant relationship between childhood pornography use and those variables. For females, first childhood exposure correlated with sexual norms and sexual partners, whereas childhood and college pornography use was correlated with sexual permissiveness, norms, and partners.

Table 3. Correlations for male participants among Age of First Porn Exposure, Frequency of Porn Use, Sexual Permissiveness, Perceived Sexual Norms, and Number of Sexual Partners

Variables	1	2	3	4	5	6
1. Age of First Porn Use	*	-0.46 ^a	-.06	-0.17 ^b	-0.23 ^a	-0.19 ^b
2. Middle School Porn Use		*	.27 ^a	0.08	0.12	0.09
3. College Porn Use			*	.35 ^a	.34 ^a	.18 ^b
4. Sexual Permissiveness				*	0.55 ^a	0.37 ^a
5. Perceived Sexual Norms					*	0.36 ^a
6. Number of Sexual Partners						*

a. $p < .05$
 b. $p < .01$

Table 4. Correlations for female participants among Age of First Porn Exposure, Frequency of Porn Use, Sexual Permissiveness, Perceived Sexual Norms, and Number of Sexual Partners

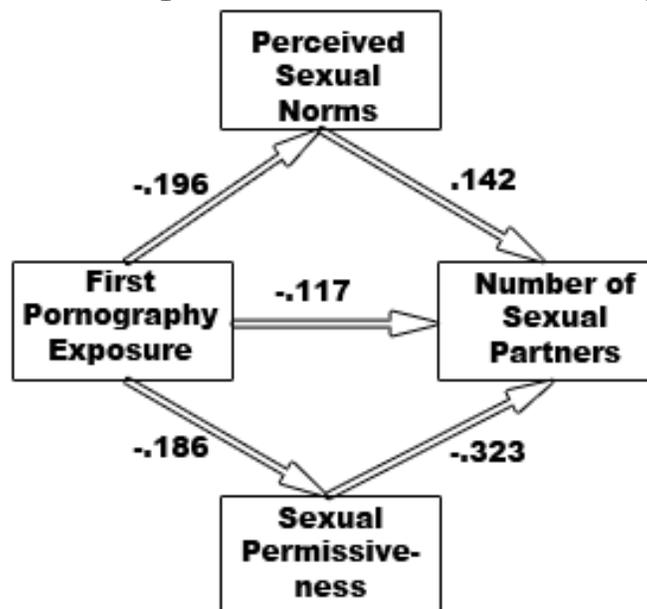
Variables	1	2	3	4	5	6
1. Age of First Porn Use	*	-0.49 ^a	-.18 ^a	-0.08	-0.15 ^b	-0.19 ^a
2. Middle School Porn Use		*	.29 ^a	0.23 ^b	0.13 ^b	0.21 ^a
3. College Porn Use			*	.29 ^a	.12 ^b	.23 ^a
4. Sexual Permissiveness				*	0.35 ^a	0.39 ^a
5. Perceived Sexual Norms					*	0.24 ^a
6. Number of Sexual Partners						*

a. $p < .05$
 b. $p < .01$

We next split the data by race to see if there were any differences; however, no differences based on race emerged. Instead, we found a similar pattern wherein early pornographic use, as well as current pornographic use, generally correlated with sexual norms, attitudes, and behaviors.

In a final step to understand the full impact of early pornography exposure on attitudes and behaviors, the structural equation modeling software Amos was used to test the model shown in Figure 2. The overall model achieved a good fit, $\chi^2 = 99.12$, $df = 85$, $p = .14$, $CFI = .99$, $RMSEA = .03$. All specified path coefficients were significant, with the exception of the path between sexual norms and number of partners, although that path trended toward significance, $p = .059$. These results would suggest that early pornography exposure directly and simultaneously influences the number of sexual partners one has, sexual permissiveness, and the perceived normalcy of highly sexual behavior. This model further implies that not only does the media have a direct effect on behavior, but also an indirect effect on behavior working through those attitudinal variables.

Figure 2. Model outlining effects of media on sexual activity



Results: Media and Body Image

In order to investigate the influence of media on body image and associated negative behaviors, we ran correlations between media use and the dependent variables (see Table 5 for full correlation matrix).

Considering first the overall media consumption variables, correlations between those and the negative outcome variables were not significant.

However, because magazines often focus on perpetuating specific physical ideals, it was hypothesized that magazine use could lead to one's internalization of those ideal. Although time spent with magazines in general did not correlate with thin internalization, looking specifically at women-focused magazines resulted in a significant correlation between frequency of reading those and thin internalization, body dissatisfaction, restricted eating, and bulimic behaviors.

Of note, thin internalization also strongly correlates with body dissatisfaction, restricted eating, and bulimic behaviors, meaning that for those individuals who have internalized the thin ideal, regardless of media source, there is increased body dissatisfaction, increased restricted eating, and increased bulimic behaviors.

Table 5. Correlations for all participants among the variables: Television Use, Internet Use, Magazine Use, Women's Magazine Use, Thin Internalization, Self Appearance Inventory, Restricted Eating Index, Bulimia Index

Variables	1	2	3	4	5	6	7	8
1. Television Use	*	0.35 ^a	0.09 ^b	0.06	0.03	-0.07	0.05	0.03
2. Internet Use		*	0.18 ^a	0.12 ^a	0.09 ^b	-0.15 ^a	-0.05	-0.10 ^a
3. Magazine Use			*	0.30 ^a	-0.03	0.04	-0.09 ^b	-0.11 ^a
4. Women's Magazine Use				*	0.21 ^a	-0.24 ^a	-0.30 ^a	-0.31 ^a
5. Thin Internalization					*	-0.59 ^a	-0.38 ^a	-0.32 ^a
6. Self Appearance Inventory						*	0.42 ^a	0.40 ^a
7. Restricted Eating Index							*	0.76 ^a
8. Bulimia Index								*

a. $p < .05$

b. $p < .01$

Next, the data were split by gender and then race (see Table 6). Consistent with the overall results, it was only women's magazine use that drove results. Among men, women's magazine use correlated with bulimic behaviors. For female participants, magazine use correlated with all outcome variables. Among White participants, there was a strong correlation between Women's Magazine Use and the negative outcome variables. A similar patterned emerged among Hispanic participants. Among Black and Asian participants, magazine consumption only correlated with restricted eating and bulimic behaviors.

Table 6. Correlations of women's magazine use with thin internalization, self appearance, restricted eating, and bulimia by gender and race

Variables	Thin Internalization	Self Appearance	Restricted Eating	Bulimia Index
Women's Magazine Use Among:				
Male Participants	.13	-.11	-.07	-.19 ^a
Female Participants	.21 ^a	-.25 ^a	-.34 ^a	-.33 ^a
White Participants	.45 ^a	-.44 ^a	-.36 ^a	-.39 ^a
Black Participants	-.02	-.02	-.19 ^b	-.28 ^a
Hispanic Participants	.17 ^b	-.27 ^a	-.37 ^a	-.38 ^a
Asian Participants	.08	-.12	-.42 ^a	-.23 ^a

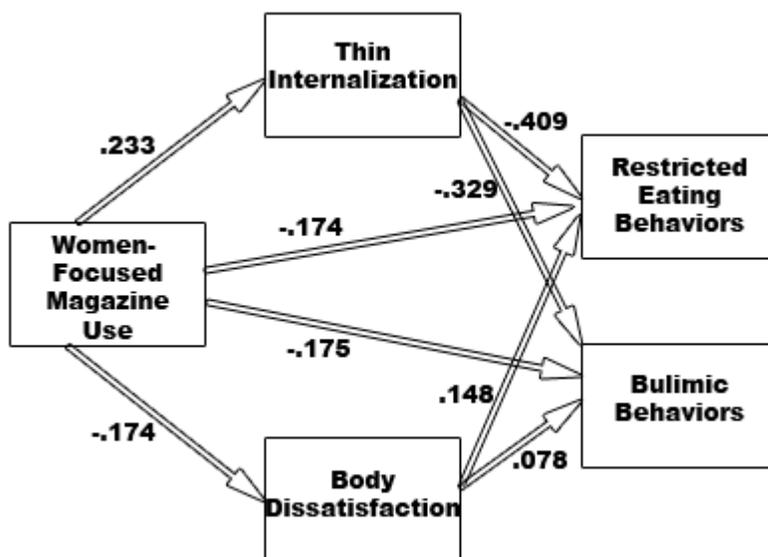
a. $p < .05$

b. $p < .01$

In a final step to understand the full impact of magazine exposure on attitudes and behaviors, we used the structural equation modeling software Amos to test the model shown in Figure 3. Although the Chi-square statistic was significant, the goodness of fit measures suggest the model does fit the data well, $\chi^2 = 267.27$, $df = 149$, $p < .01$, $CFI = .97$, $RMSEA = .05$. All specified path coefficients were significant except for the path between body dissatisfaction and bulimic behaviors ($p = .11$). This model suggests that heavy consumption of women-focused magazines may have a direct impact on all of the negative outcome variables,

including increasing thin internalization, decreasing body satisfaction, increasing restricted eating behaviors, and increasing bulimic behaviors. Furthermore, this model suggests that magazine consumption may have an indirect effect, too, working through both the thin internalization variable and the body dissatisfaction variable to influence eating and bulimic behaviors.

Figure 3. Model Outlining Effects of Media on Restricted Eating and Bulimia



General Discussion

The purpose of this research was to examine the media’s influence on individuals, specifically investigating any relationship that may exist between media consumption and aggression, sexual attitudes and behaviors, and body image. Unlike most prior research, this analysis was conducted on a diverse sample that allowed comparisons to be made by racial group.

Considering first the media’s influence on aggression, through correlational analysis it was clear that a general relationship exists between media use and aggression. Furthermore, when examined by media type and genre, all types of television programming positively and significantly correlated with aggression. This suggests that the media tend to present a consistently violent world that, regardless of programming choice, may contribute to the development of more aggressive individuals.

This is not to say that only television use predicted aggression. Indeed, through a series of regressions, it was clear that television and

video game use were consistently the types of media that were associated with aggression. Among males, it appeared that it was video game use rather than television consumption that drove the results; among females, it was television and not video games. This is an important distinction to note. Although it is hard to speculate from these data why this is the case, it could be that men tend to play more video games than women; therefore, those negative effects would tend to be more pronounced among men, perhaps overshadowing any negative effects associated with television use.

There were also interesting patterns that emerged by race. Among White participants, both television use and video game play predicted aggression, whereas for African Americans it was only television use and for Hispanic participants it was only video game use. No media relationships were found with Asian participants. As with gender, it would be impossible from a survey of this nature to try to determine why these differences among racial groups emerged; however, it is worth noting that they were there. Future research would do well to build upon this to determine a more detailed and comprehensive examination of why different media have different effects based on race.

As noted in the literature review, research suggests the media's influence on individuals affects behavior through a cognitive route. To investigate this, we presented a structural equation model that looked at the media's direct relationship with aggression as well as an indirect relationship via perceived aggression norms. The results suggest that television use not only predicted aggression but also perceived norms related to acting aggressively, which in turn also predicted aggression. This means the media's influence works through multiple channels by not only affecting behavior directly, but indirectly by changing attitudes about what constitutes normal behavior.

Next, we conducted analyses looking at the media's relationship with sexual attitudes and behaviors. Unlike with aggression, general media use variables did not have any relationship with sexual attitudes or behaviors. However, correlational analyses demonstrated that there was a relationship between pornographic use—whether measured by first exposure, middle school use, or current use—and sexual permissiveness, perceived sexual norms, and number of sexual partners. Of note, those who reported viewing pornography during middle school continued to report viewing pornography today, suggesting that pornographic use, when started early, is a behavior that tends to persist. This is important because all of the childhood measures correlated with current sexual permissiveness as well as perceived sexual norms. They also correlated with the number of sexual partners the participants reported having.

Together, this points to early pornographic exposure leading to continued use of pornographic materials, which in turn may lead to a changing of attitudes, beliefs and behaviors.

Indeed, we tested this pattern using structural equation modeling. The model demonstrated that early pornographic use not only influenced the number of partners, but also influenced sexual permissiveness and perceived sexual norms, which in turn predicted sexual behavior. As with aggression, the media therefore not only directly influence behavior, but indirectly influence by changing attitudes toward and perceived norms related to the behavior. However, in this case, it was only a specific type of media—pornography—that had these effects.

Of note, the pattern of results discussed above was remarkably consistent regardless of gender or race of the participants. Unlike with aggression, where significant gender and racial differences emerged, the effects of pornography were remarkably similar for anyone who consumed it. This suggests that pornography is unique in its ability to change values, attitudes, and behaviors.

Finally, we investigated the relationship between media use and body image disturbance—including thin internalization, negative self-appearance, restricted eating, and bulimic behavior. As with the analysis related to sexuality, there were no relationships between overall media consumption and any of the negative outcomes. However, by examining the effects of different types of media, we established that there were significant correlations between women's magazine use and all of the negative outcome variables. This suggests that for those participants who read a lot of women-focused magazines (eg, *Cosmopolitan*), they are more likely to have internalized the thin ideal, have negative views of their appearance, and engage in restricted eating and bulimic behaviors.

As with aggression, these results varied by gender and race. Considering gender first, among women, magazine use correlated with all of the dependent variables; among men, there was only a correlation between women's magazine use and bulimic behaviors. This correlation among men is a somewhat surprising result, as most previous research has suggested that body image effects are confined to women. One possible explanation, based on the present data, for previous null findings is that the research typically has looked only at the direct relationship between media use and body image disturbance and not behavioral outcomes. In this analysis, the relationship between media use and body image disturbance was not significant. However, there was a relationship between the women's magazine consumption and bulimic behaviors. This suggests that having body image disturbance is not a necessary step in

the relationship between media use and negative behaviors. Further research is warranted to continue this line of inquiry.

When looking at the results by race, the effects of women's magazine consumption appear to be strongest among White participants followed by Hispanic participants. In fact, among magazine consumers, both White and Hispanic participants tended to internalize the thin ideal present in the media as well as feel worse about themselves. Although it is hard to know why White and Hispanic participants were influenced when Black and Asian participants were not, it is possible that women's magazines tend to focus more on the beauty ideals of White and Hispanic women more so than Black or Asian women, who make up a smaller market. Regardless of whether the thin ideal was internalized, all racial groups demonstrated a relationship between women's magazine consumption and restricted eating and bulimic behaviors. As with the male participants, it is not clear why just these behaviors would result, but it is nevertheless important to recognize the pattern that is developing that appears to transcend race and gender: women's magazine consumption leads to restricted eating and/or bulimic behaviors. These are both negative and dangerous outcomes that seem to be tied to a specific type of media consumption.

Finally, a structural equation model was used to see how women's magazine consumption worked to directly and indirectly affect the negative outcomes of restricted eating and bulimic behaviors. Based on the model, not only did media consumption directly predict restricted eating and bulimic behaviors, but they also predicted thin internalization and body dissatisfaction, too, which in turn led to the negative outcomes. This provides further support to the argument that media consumption can both directly influence negative behaviors (in this case, restricted eating and bulimia) and indirectly influence behavior through the adoption of attitudes (body dissatisfaction) related to that behavior.

It is important to reiterate that thin internalization had its own significant relationship with negative self-appearance, restricted eating, and bulimic behaviors. This relationship suggests that anyone could be susceptible to the negative influence of the media if he or she internalizes the message. In other words, within this data it was only women's magazine consumption that significantly predicted thin internalization, but it is possible that for some individuals, other media could cause the ideal to be internalized.

Taken together, these results suggest that although the media do not have a uniform effect, they do nevertheless tend to be associated with a number of different negative effects. For aggression, it was overall media use that predicted aggressive behaviors, although the effect may

have been particularly strong for video game use among men and television use among women. For sexuality, it was pornographic exposure that was the most important determinant of sexual permissiveness and sexual behaviors regardless of race or gender. For body image, it was women's magazines use that led to negative outcomes, with the effects largest for women (when compared to men) as well as White and Hispanic participants (when compared to other racial groups). In future studies, therefore, when trying to examine any effects associated with the media, it is important to treat it as a dynamic and complex variable. Although general usage of media is still an important variable to include, it is apparent from this research that a more nuanced approach is warranted.

It is also clear that further examination of gender and race is needed as they are important demographic variables. To date, most research has had the limitation of a non-diverse sample. The results here indicate different media had different effects based on gender and race. Although it is not clear why these differences emerged, it is evident that those differences need further explication in order to get a more complete understanding of how media effects operate.

Limitations

Although we made every effort for this research to be as valid as possible, there are a couple of limitations that should be addressed. First, the sample came entirely from a college population. Although the particular college used is racially diverse and includes many students who are older than the "traditional" student, it is still difficult to argue that this perfectly corresponds to a general population. This population also had a higher percentage of females than the general population, further limiting its generalizability.

These data also relied entirely on correlational relationships, meaning that it is impossible to demonstrate causality. Although it is suggested throughout that the media are influencing participants in the ways described, it is not possible to "prove" that this is the case.

Finally, although many different types of media were included in this analysis, further research could develop a more detailed measure. The influence of music and films were beyond the scope of this study, as was a more detailed analysis of television use. Future research could try to more accurately measure the specific television shows or video games participants are watching in order to further pinpoint when negative outcomes are likely to be found.

Conclusion

The results from this present research add to the literature in two important ways. The first is that this sample was racially diverse. As noted throughout the results and discussion, interesting differences emerged based on race. Although the reasons these differences were there is beyond the scope of this present study, it is important to recognize that the media do not uniformly influence and there could be other factors at play that may accentuate or extinguish any negative effects. Second, this survey was conducted in the fall of 2012, meaning it represents some of the most recent research examining these effects. Far too often, older studies are used to justify opinions about the media's possible effects. By using current data, it can be argued that the results are at least based upon the current media environment rather than the media environment that existed years ago.

Indeed, as we move further into the 21st century, the media will increasingly permeate all areas of our lives. Based on this research, politicians, parents, and the public are right to be concerned about the effects the media may have on themselves, their children, and others. It is important, therefore, to continue to investigate and understand what effects the media may have on those who consume it and how those effects may vary by gender and race.

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