Is Television Viewing Associated With Social Isolation?

Roles of Exposure Time, Viewing Context, and Violent Content

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Objective: To estimate associations between children's peer integration and amount of time they spend (1) watching television, (2) watching violent television, and (3) co-viewing television with friends.


Participants: Of 3562 children, 1356 had sufficient data for inclusion in analyses (563 children aged 6 to 8 years and 793 children aged 9 to 12 years).

Main Exposure: Total time viewing television, with and without friends present, and time viewing violent and non-violent television content.

Main Outcome Measure: Amount of time children spent with friends as reported in two 24-hour activity diaries.

Results: Viewing violent programs (but not nonviolent programs) was negatively related to time children spent with friends (aged 6-8 years, unstandardized regression coefficient [β] = −0.34, 95% confidence interval [CI], −0.59 to −0.08; aged 9-12 years, β = −0.41, 95% CI, −0.65 to −0.18). More time viewing television with friends was associated with more time engaging in other activities with friends (aged 6-8 years, β = 0.98, 95% CI, 0.61 to 1.36; aged 9-12 years, β = 1.03, 95% CI, 0.72 to 1.34).

Conclusions: The more time that children spent viewing violent programs, the less time they spent with their friends. While this study cannot determine the direction of effects for this relationship, a cyclical process between violent media and peer integration best explains the findings. To optimize social development and mental health, children's access to violent media should be limited.

Assuming television simply displaces peer interactions underestimates the complex role it has in children’s lives. Television is a rich medium that can teach a variety of social behaviors. Meta-analyses conclude that viewing violent television increases children’s antisocial behaviors and decreases their positive social behaviors.16-18 Such negative social behaviors can lead to social isolation, while positive social behaviors can lead to successful peer relationships.19,22 The content of television, therefore, may be at least as important to children’s social integration as the time they spend with the medium.23

The context in which television is viewed may also influence children’s social interactions. While television viewing is often perceived as an isolating activity, it frequently occurs in the company of friends.24 Because socializing builds interpersonal skills,12 television viewing with friends may provide a venue for these skills to develop.

While television may isolate children, the reverse causal direction is also plausible—lonely children may turn to television for entertainment and companionship. Children who are marginalized by their peers use television to escape the stresses of their lives and meet their social needs.25 Conversely, children who are socially integrated spend less time watching television.26-29 In this model, it is social isolation that motivates media use. Overall, it is most likely that both effects occur—children who watch more television become more socially isolated, which leads them to spend more time watching television.

The purpose of this study is to investigate the extent to which television viewing is associated with children’s peer integration. It tests the hypothesis that the more time children watch television, the less time they spend with their friends. Additionally, children’s exposure to violent and nonviolent programs will be distinguished to determine the independent relationship of these 2 types of content with peer integration. Finally, this study investigates whether coviewing television is linked to the amount of time children spend with friends not watching television.

**DATA**

Data for this study were drawn from the Panel Study of Income Dynamics—Child Development Supplement (PSID-CDS) Wave 1 collected in 1997.30 Since 1968, the PSID has been an ongoing, nationally representative panel study of adults conducted by the Survey Research Center at the Institute for Social Research, University of Michigan, Ann Arbor. In 1997, the CDS was added and included a battery of questionnaires for families with children aged 6 months to 12 years. It resulted in data representing 3362 children.

Data collection procedures for the PSID-CDS were approved by the University of Michigan institutional review board, and the analytical protocol was approved by the University of Texas at Austin institutional review board.

Time-use diaries were used to collect detailed information about children’s activities. This method yields the most complete, valid, and reliable data possible without an extraordinary commitment of time or money.10,11 It is less costly and intrusive than observational methods and less likely to be socially biased than summative self-reports.12 Time-use diary reports of children’s television viewing have been validated by comparison with observational data from videotapes made of the child’s home.33

On two randomly chosen days (1 weekend and 1 weekday), primary caregivers completed comprehensive time-use diaries. The primary caregiver, with help from the child when appropriate, accounted for every minute of activity performed by their child for 24-hour periods from midnight to 11:59 pm the next night. Along with duration of activities, parents reported location, other people who were present, and any secondary concurrent activity. When television was the primary activity reported, the title of the program or movie viewed was also requested.

Two coders used their own knowledge and information gained from Web sites to determine the presence of violence in each show reported by the participants. News, sports, and other nonfiction programs contained widely variable content and were not coded. Programs were considered violent if violence was a central theme to the program. These programs generally depicted considerably more violence than normally exists in most children’s lives and often included main characters whose profession included responding to or participating in violence. The coders reached an appropriate level of interrater reliability ($k = 0.81$).

The number of minutes each child watched television as a primary or secondary activity was computed by summing every instance of viewing broadcast, cable, or video reported in the time-use diaries for both days. Viewing of violent and nonviolent content was similarly calculated. Mean values for viewing are presented in Table 1.

**SUBSAMPLES**

Only children 6 years and older were included in this study because it is at this age, around school entry, when children begin shifting their social focus from family to peers.34,35 Analyses were performed separately for 6- to 8-year-olds and 9- to 12-year-olds.

This study used 2 subsamples from the PSID-CDS. The television viewing subsample contained 1356 children of the
total sample (n = 3562) who returned 2 time-use diaries and had complete data on variables in the models. This subsample was used in analyses that considered total television viewing and viewing context. The television viewing subsample included 563 children aged 6 to 8 years and 793 children aged 9 to 12 years.

The violent content viewing subsample consisted of 1015 children from the television viewing subsample whose diaries contained 70% or more codeable data. This subsample included 411 children aged 6 to 8 years and 604 children aged 9 to 12 years.

MEASURING TIME SPENT WITH FRIENDS

Peer integration was operationalized as the amount of time children spent with their friends. Because the time-use diaries included a report of people present during activities, it was possible to determine the total amount of time each child spent with his or her friends during the 2 days. The time children watched television with their friends was also calculated and subtracted from the total amount of time they spent with their friends to prevent overlap between the independent variable (ie, television viewing) and dependent variable (ie, time with friends). The mean and standard deviation of time with friends (no television) and time watching television with friends are provided in Table 1.

COVARIATES

The PSID-CDS contains multiple family and child level variables that may contribute to children’s television exposure and/or peer integration. The following were included in analyses as control variables: (1) age in years was included to control for age differences within each age group (overall mean [SD] age, 9.05 [2.04] years); (2) sex was coded with girls as 1 and boys as 0 (girls, n=683, boys, n=673); (3) parental education was determined by the number of years of education completed by the head of each child’s household (mean [SD], 12.67 [2.73] years); (4) the primary caregiver’s report of total family income in 1996 was divided by the Census Bureau poverty threshold for that size family to determine the income-to-needs ratio36 (mean [SD], 2.92 [3.74]); (5) children who were reported to have a race/ethnicity of black, Hispanic, Asian, Native American, or other were considered to be minorities (minority, n=706; nonminority, n=650); (6) the Home Observation for Measurement of the Environment short form37 combines observational items completed by the researcher and self-report questions completed by the participant to measure emotional support and cognitive stimulation parents provide their children (scores were standardized within age groups); (7) the 6-item, 5-point Parental Warmth Scale developed by Child Trends was used to measure warmth of the relationship between child and parent38 (mean [SD], 4.33 [0.62]).

ANALYSIS PLAN AND DETAILS

Ordinary least squares regression was performed using STATA 8.0 statistical software (Stata Corp, College Station, Tex) to test the relationships between television viewing and the amount of time children spent with their friends while controlling for the variables listed previously. Sampling weights were applied to all analyses to represent national estimates and commands were used to help correct for nonindependent, sibling data. Unstandardized regression coefficients are reported to allow for the translation of results into meaningful time-use differences.

Table 2. Regression Analysis for Television Viewing and Control Variables Predicting Non-Television Time With Friends

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Children Aged 6-8 y (n = 563)</th>
<th>Children Aged 9-12 y (n = 793)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Television (no friends)</td>
<td>−0.20† (−0.32 to −0.08)</td>
<td>−0.31 † (−0.43 to −0.19)</td>
</tr>
<tr>
<td>Age, y</td>
<td>34.38§ (8.12 to 60.64)</td>
<td>6.70 (−14.38 to 27.79)</td>
</tr>
<tr>
<td>Parental education</td>
<td>12.67† (4.69 to 20.65)</td>
<td>3.07 (−6.68 to 12.82)</td>
</tr>
<tr>
<td>Income-needs ratio</td>
<td>−1.81 (−10.24 to 6.63)</td>
<td>−3.13§ (−6.17 to −0.08)</td>
</tr>
<tr>
<td>Minority status</td>
<td>17.71 (−36.92 to 72.34)</td>
<td>−56.93§ (−113.35 to −0.51)</td>
</tr>
<tr>
<td>Sex</td>
<td>1.16 (−41.21 to 43.53)</td>
<td>−17.24 (−66.01 to 31.52)</td>
</tr>
<tr>
<td>Home</td>
<td></td>
<td>score</td>
</tr>
<tr>
<td>Parental warmth</td>
<td>12.90 (−35.55 to 61.36)</td>
<td>−19.85 (−61.58 to 21.88)</td>
</tr>
</tbody>
</table>

Abbreviation: CI, confidence interval.
†P<.01.
‡P<.001.
§P<.05.
||The Home Observation for Measurement of the Environment short form measures emotional support and cognitive stimulation parents provide their children.

TOTAL TELEVISION VIEWING AND TIME WITH FRIENDS

The more time children spent watching television without friends present, the less time they spent with their friends engaging in other activities (Table 2). For 6- to 8-year-olds, the unstandardized coefficient of −0.21 can be interpreted to indicate that a difference of 1 hour more of television watched corresponded to a difference of about 13 minutes or, on average, 7.5% less time with friends. For 9- to 12-year-olds, 1 hour more television watched corresponded to about 19 fewer minutes (7.4%) spent with friends.

VIOLENT/NONVIOLENT TELEVISION AND TIME WITH FRIENDS

Table 3 presents the regression results for viewing each of the 2 categories (violent and nonviolent) of television programming. These 2 types of viewing were moderately correlated with one another in each of the age groups (children aged 6-8 years, r=0.36, P<.001; 9-12 years, r=0.32, P<.001).

The more time children spent watching violent television without friends, the less non-television time they spent with their friends. Among 6- to 8-year-olds, an additional 1 hour of violent television viewing corresponded to about 20 minutes (12.1%) less time spent with friends. For 9- to 12-year-olds, viewing 1 additional hour of violent television corresponded to 25 minutes (9.8%)
less time spent with their friends. Viewing nonviolent television programming was not significantly related to the amount of time children spent with their friends.

**COVIEWING TELEVISION WITH FRIENDS AND OTHER TIME WITH FRIENDS**

The more time children of either age group spent co-viewing television with their friends, the more time they spent with their friends engaging in non-television activities (Table 4). For 6- to 8-year-olds, 1 more hour of watching television with friends corresponded to 59 minutes more time with their friends not watching television. For 9- to 12-year-old children, each hour of television viewing with friends corresponded to about 62 minutes more non-television time spent with friends.

This study used nationally representative data and time-use diaries to investigate the relationship between television viewing time, content, context, and peer integration. As children spent more total time watching television, they spent a small but significantly shorter amount of time with friends not watching television. The more violent television programs that children watched, the less non-television time they spent with friends. Viewing nonviolent television programs had no effect on time spent with friends. More time co-viewing television with friends was associated with more non-television time with friends.

**A PROCESS MODEL**

There is strong evidence from many previous studies that violent media contributes to children’s antisocial behaviors, suggesting a plausible link between children’s violent television exposure and peer integration. As children watch more violent television, they become more aggressive and exhibit fewer positive social behaviors. Aggressive behaviors have been associated with peer rejection and less popularity. Increased aggression influenced by viewing violent television may prompt peers to reject and socially isolate the aggressive child.

These data are correlational and cannot test causality or the directions of relationships. An alternative explanation for the results is that social isolation precedes increased violent media use. As aggressive children become more isolated from their peers, they have more discretionary time that they then fill by watching television. Because they are aggressive, these children may be attracted to violent content.

The model that may most accurately represent real-world effects of violent television is one that synthesizes both directions of influence into a cyclical process, a downward spiral from violent television viewing to aggressive behavior to social isolation to viewing more violent

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**Table 3. Regression Analysis for Violent and Nonviolent Television Program Viewing and Control Variables Predicting Non-Television Time With Friends**

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Children Aged 6-8 y (n = 411)</th>
<th>Children Aged 9-12 y (n = 604)</th>
<th>β * (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violent television</td>
<td></td>
<td></td>
<td>-0.34 † (-0.59 to -0.08)</td>
</tr>
<tr>
<td>programs (without friends present)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonviolent television</td>
<td></td>
<td></td>
<td>-0.00 (-0.25 to 0.25)</td>
</tr>
<tr>
<td>programs (without friends present)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age, y</td>
<td>45.18 † (15.15 to 75.21)</td>
<td>0.39 (-23.26 to 24.04)</td>
<td></td>
</tr>
<tr>
<td>Parental education</td>
<td>10.01 † (.34 to 19.67)</td>
<td>5.51 (-6.71 to 17.73)</td>
<td></td>
</tr>
<tr>
<td>Income-needs ratio</td>
<td>-2.39 (-11.00 to 6.22)</td>
<td>-3.50 † (-6.73 to -0.27)</td>
<td></td>
</tr>
<tr>
<td>Minority status</td>
<td>37.92 (-29.59 to 105.42)</td>
<td>-21.04 (-87.24 to 45.16)</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>26.31 (-23.84 to 76.47)</td>
<td>-13.16 (-65.10 to 38.77)</td>
<td></td>
</tr>
<tr>
<td>Home § score</td>
<td>19.79 (-5.47 to 45.04)</td>
<td>7.89 (-24.10 to 39.88)</td>
<td></td>
</tr>
<tr>
<td>Parental warmth</td>
<td>2.02 (-5.36 to 62.40)</td>
<td>-38.51 (-87.42 to 10.40)</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>.09</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 4. Regression Analysis for Television Viewing With Friends and Control Variables Predicting Non-Television Time With Friends**

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Children Aged 6-8 y (n = 563)</th>
<th>Children Aged 9-12 y (n = 793)</th>
<th>β * (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Television with friends</td>
<td></td>
<td></td>
<td>0.98 † (0.61 to 1.36)</td>
</tr>
<tr>
<td>Age, y</td>
<td>28.77 †* (3.10 to 54.44)</td>
<td>-4.19 (-24.17 to 15.78)</td>
<td></td>
</tr>
<tr>
<td>Parental education</td>
<td>12.18 †* (4.35 to 20.02)</td>
<td>2.59 (-7.34 to 12.51)</td>
<td></td>
</tr>
<tr>
<td>Income-needs ratio</td>
<td>-0.37 (-8.83 to 8.10)</td>
<td>-2.18 (-5.02 to 0.66)</td>
<td></td>
</tr>
<tr>
<td>Minority status</td>
<td>16.68 (-33.68 to 67.04)</td>
<td>-64.24 † (115.99 to -12.49)</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>9.36 (-31.28 to 50.00)</td>
<td>-41.47 (-88.95 to 6.00)</td>
<td></td>
</tr>
<tr>
<td>Home § score</td>
<td>13.37 (-9.10 to 35.84)</td>
<td>9.25 (-16.25 to 34.74)</td>
<td></td>
</tr>
<tr>
<td>Parental warmth</td>
<td>18.70 (-28.66 to 66.06)</td>
<td>-28.06 (-68.05 to 11.93)</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>.13 †</td>
<td></td>
<td>.12 †</td>
</tr>
</tbody>
</table>

Abbreviation: CI, confidence interval.
*Regression coefficients (β) are unstandardized and weighted to represent national estimates.
†P < .01.
‡P < .05.
§The Home Observation for Measurement of the Environment short form measures emotional support and cognitive stimulation parents provide their children.
||P < .001.
Exposure to violent television could, therefore, be the catalyst for a cyclical system leading toward an aggressive, socially isolated lifestyle.

COVIEWING WITH FRIENDS

The more time children spent coviewing television with friends, the more time they spent with their friends engaging in other activities. Again, it is important to consider both directions of influence in the interpretation of this result. Children may forge stronger relationships with their friends around television and thus be more likely to continue their interactions away from the medium. Alternatively, children who regularly spend time with their friends may engage in a variety of activities with them. Viewing television together may be one activity in the repertoire of a rich childhood friendship. Regardless of the direction of influence, this finding does not support the hypothesis that viewing television with friends interferes with relationships or replaces other shared activities.

LIMITATIONS

The large number of television programs reported by the participants of the PSID-CDS necessitated a limited violence coding procedure. Differing depictions of violence on television can influence the viewer in different ways, the binary, violent vs nonviolent coding used in this study does not capture important yet subtle differences in content. Further research using more precise and objective coding strategies is necessary to understand more fully the relationship between violent television viewing and social isolation.

Although time-use diaries are a valid and accurate method of measuring television viewing, they may be limited by recall bias because they are filled out for the previous day. Additionally, because diaries were collected for 2 sample days, activities that occur rarely are likely to be underrepresented. While 80% of children watch television every day, viewing with friends is a much less common activity and may be underreported in these data. There was not enough coviewing reported to permit analyses examining differences in viewing violent vs nonviolent television programs with friends. Finally, the cross-sectional nature of these data does not permit analyses of the direction of influence between television viewing and peer integration. Longitudinal research is necessary to further examine the direction and strength of this relationship.

CONCLUSIONS

The more time that children between the ages of 6 and 12 years spent watching violent television, the less time they spent with their friends. This content-specific relationship indicates that television may not simply displace peer interactions. At the time our study data were collected, the National Television Violence Study found this type of content was readily available to children—61% of all television programs and 66% of children's programming contained violence. These results demonstrate that it is important to consider television content whenever investigating the relationships between media use and behaviors. Other research has reached similar conclusions with different behavioral outcomes. Educational television viewing among children in preschool has been shown to have long-term positive effects on children's academic success, while early viewing of violence predicts aggression and violent crime in adulthood.

These findings expand and enrich our understanding of the effects of television exposure on the healthy social development of children. Violent television viewing may influence younger children to be more antisocial, resulting in their becoming socially isolated which, in turn, attracts them to more violent media. To optimize children's social development and long-term mental health, parents, teachers, and pediatricians should discourage the viewing of violent television programs.

In response to these and other findings indicating the potential effects of violent media, pediatricians should incorporate media use histories in children's health maintenance visits to determine how much time children view television or play video games, what content they are exposed to, and with whom they view or play. Special attention should be given to a child's media exposure when there are indications of social isolation, declining school performance, or aggressive, anxious, or withdrawn behavior. Parents should be urged to remove televisions, video games, and Internet access from children's bedrooms and to budget media use for school-aged children to time after all homework, sports, and social obligations have been completed. Parents should be encouraged to make themselves aware of their children's media use, watching television or using other media with them, and discussing problematic content. Finally, pediatricians should encourage the development of media literacy, the ability to use media critically and to protect oneself, for both children and parents. Aware of the potential risks to their children's mental health and social development, parents should model and enforce healthy and safe media use habits in their homes.

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REFERENCES