



Published in final edited form as:

*Health Commun.* 2011 January ; 26(1): 94–103. doi:10.1080/10410236.2011.527625.

## Teens' Attention to Crime and Emergency Programs on Television as a Predictor and Mediator of Increased Risk Perceptions Regarding Alcohol-Related Injuries

Michael D. Slater and Parul Jain

School of Communication, The Ohio State University, Columbus, OH 43210

### Abstract

This study examined the hypotheses that media exposure and attention would predict, and partially mediate, the effects of various individual-difference variables on alcohol-related risk perceptions among teen viewers of crime and emergency (e.g. medical drama) shows on television. Risk perceptions including perceived severity, perceived alcohol-attributable fraction of incidents involving alcohol, controllability, and concern regarding alcohol-related crime, assaults, and other injuries were the outcome measures. Attention to crime and emergency shows was predictive of increased concern and other risk perceptions regarding alcohol-related incidents. Attention also partially mediated the effects of demographic and other individual difference variables on adolescents' risk perceptions regarding alcohol-related injuries. The findings a) suggest emergency and medical drama television narratives can at times have incidental positive impacts on health-related attitudes and b) provide further evidence regarding the endogenous nature of media use variables in influencing such attitudes.

---

Alcohol is the drug of choice among youth and causes the death of 5000 people under the age of 21 every year (NIAAA, 2006). Recent estimates suggest about 10.8 million alcohol users in the age group of 12–20, with a substantial percentage reporting binge and heavy drinking (see SAMHSA, 2006). Underage drinking is related to brain damage, social developmental issues, risky sexual behavior, and dependence on alcohol in adulthood (NIAAA, 2006).

Examination of entertainment media effects on alcohol risk perceptions among adolescents, then, is of substantive importance because such risk perceptions are predictive of their alcohol and other substance use behaviors (Bachman, Johnston, O'Malley, 1991; Brown, Schulenberg, Bachman, O'Malley, Johnston., 2001). Entertainment media may impact people's attitudes, beliefs, and behaviors, including those related to health risk perceptions. Intentional efforts to influence viewers' pro-social health-related attitudes and behaviors via entertainment-education (Singhal & Rogers, 2002) are relatively well-studied. Research has also looked extensively into the effects of unintended negative consequences of exposure to entertainment media (Collins. et al., 2005; Collins et al., 2007; Dalton et al., 2003; Kean & Albada, 2003), especially among adolescents. In this study, in contrast, we examine possible incidental prosocial effects on perceptions of alcohol-related risks associated with viewing of crime and emergency dramas among adolescent viewers.

We conduct this examination from the perspective of theoretical models emphasizing the endogenous nature of media use variables (Slater, 2007). In particular, Slater & Rasinski (2005) found that exposure and attention to crime news and emergency entertainment shows both predicted alcohol-related risk perceptions among adults, and partially mediated the effects of various individual-difference variables that also predicted such risk perceptions; Slater, Hayes, and Ford (2007) also found that attentiveness to crime and accident news mediated the impact of sensation-seeking and negative personal experience on adolescent risk perceptions. The present research provides a test of endogenous effects of crime and emergency show viewing on risk perceptions among a national random sample of adolescents.

### **Unintended Negative Impacts of Entertainment Dramas on Health-Related Outcomes**

There is a growing body of literature that implicates entertainment dramas in television or the movies with negative health-related outcomes among youth. Exposure to sexualized media appears to influence adolescents' sex-related attitudes and behavior (Brown, L'Engle, Pardun, Kenneavy, & Jackson, 2006; Collins et al., 2004). Within the realm of adolescents and substance use, there is evidence based on extensive content analyses and panel survey designs that exposure to smoking in R-rated movies increases adolescent smoking uptake (Sargent et al., 2007), consistent with results from experimental research (Pechmann & Shih, 1999). Other studies have also highlighted the frequency of media portrayals of alcohol use (Christenson, Henriksen, & Roberts, 2000; Greenberg, Rosaeon, Worrell, Salmon, Volkman, 2009). Evidence for the effects of movies with alcohol use portrayed parallel to those for smoking have been more recently reported providing evidence for the prospective association between exposure to alcohol in movies and early onset of teen drinking (Sargent, Wills, Stoolmiller, Gibson, & Gibbons, 2006; see Brown & McDonald [1995] for a review). We emphasize that we are not arguing here that television viewing is protective with respect to adolescent alcohol outcomes; rather, we are advancing a narrower proposition that crime and emergency service dramas in particular may have unintended prosocial effects. Medical dramas and other emergency shows, given their focus on dramatic medical emergencies and crime, are more likely to portray negative outcomes often associated with alcohol use, such as motor vehicle crash injuries, assaults, and other mishaps.

Among well-established media effects theories, exemplification (Zillman & Brosius, 2000) offers a plausible account of the possible effects of attentive viewing of medical and emergency service dramas. It may be that there are vivid exemplars of crimes and accidents that are alcohol-related that are more accessible in memory to attentive viewers of such dramas. Or, it may be simply having exemplars in memory of such accidents and crimes, and awareness of the possible contribution of alcohol, can increase associations in memory between risks and alcohol use. Similar mechanisms have been proposed and tested by researchers examining social cognitive mechanisms that might explain cultivation effects (Gerbner et al., 2002) who find that viewers of a given genre have information consonant with genre content more accessible in memory (Shrum, 1995).

Finally we note that crime and emergency shows (such as CSI) are among the most popular shows on TV among adults age 18–49 (Nielson, 2009a), and adolescent viewing largely parallels viewing reported for the rest of the household (Nielson, 2009b). It can therefore reasonably be assumed that adolescents are often viewing these popular medical and other emergency service prime-time dramas, and their effects are worthy of study.

## Intentional Efforts to Influence Pro-social Health Attitudes and Behaviors through Entertainment Programming

There is ample evidence that pro-social effects of entertainment media are plausible. Entertainment-education is the use of entertainment media content—typically dramas on television or radio—to influence prosocial attitudes and behaviors through modeling of and reinforcement of such attitudes and behaviors in the context of the entertainment story line (Rogers & Singhal, 2003). Internationally, entertainment-education campaigns have been focused on promoting behaviors such as family planning in developing countries including India (Singhal and Rogers, 1989) and Mexico (Nariman, 1993); HIV and AIDS awareness in Tanzania (Vaughn et al., 2000) and Nigeria (Lapinski & Nwulu, 2008); and enhancing collective self-efficacy against spousal abuse in Korea (Rogers & Singhal, 2003) among others.

Given the success of entertainment-education programming in the developing world, this strategy has been increasingly used in the United States in the hopes that exposure to such programming will promote the adoption of healthy attitudes and behaviors (Dutta, 2007; Valente et al., 2007). More recently American audiences have started to witness entertainment-education campaigns to promote various healthy and prosocial behaviors such as organ donation (Morgan, Harrison, Chewing, Davis, & DiCorcia, 2007; Movius, Cody, Huang, Berkowitz, Morgan, 2007); HPV and emergency contraception awareness (Brodie et al., 2001); and HIV and AIDS related information (Rideout, 2008) among other topics.

The research on entertainment-education clearly evidences the potential effect of entertainment programming that is carefully scripted and produced with the intention of pro-social influence on attitude and behavior; it appears as well that specific health-relevant story lines in commercial American television can have effects similar to traditional E-E on story-relevant health-related attitudes. However, it is unclear whether some entertainment programming—notably crime and emergency dramas—has, as a genre, the potential to have pro-social influence absent such intentional scripting and production, or storyline-specific effects. This is the question being examined here.

### Exposure and Attention to Crime and Emergency Shows

Exposure and attention to a given media programming genre can be thought of as necessary conditions for the effects of narrative persuasion (McGuire, 1989). Obviously, media content cannot influence a media consumer if they are not exposed to that content (except via impact on other viewers, but that is not a topic under study here). People are exposed to a great deal of media content; as McGuire (1989) points out, only what content viewers or readers actually attend to is likely to have much of an impact. Attention is a psychological process through which we devote our sensory and mental resources to, and cognitively and emotionally engage with, elements from external environment, in this case, crime and emergency television shows (Anderson & Kirkorian, 2006). Therefore, the cultivation or exemplification effects of shows dramatically portraying violent crime victimization and various kinds of unintended injury should be a function of the degree to which adolescents are exposed to such programs and the amount of attention paid to the programs.

We propose the following hypotheses tentatively for exposure and more confidently for attention because given prior research, it appears that attention more so than exposure is the variable of greatest influence among adolescents at least with respect to news (Slater, Hayes, & Ford, 2007). A possible reason for this is that adolescents may not always have full control over television choices in the home, rendering exposure error-prone in terms of reflecting their actual engagement with the media content. For example in about 50% of the homes television is always on and in about 60% of the homes it is on during meal times

(Roberts, Foehr, & Rideout, 2005). Even when they have such control, as when they have a television in the bedroom (Roberts, Foehr, & Rideout, 2005), it is possible that they may spend much of their viewing time multitasking and not focused on the television content (Roberts & Foehr, 2008). This data suggests that adolescents might be getting exposed to the programming as a function of television set being on but they might not be paying attention to the content. Thus we propose the following hypotheses with respect to the impact of crime and emergency shows, the first more tentatively, and the second with more confidence:

H1: Greater exposure to crime and emergency entertainment shows would positively predict alcohol-related risk perceptions a) perceived severity; b) perceived controllability; c) perceived alcohol-attributable fraction; and d) perceived concern of alcohol-related injuries and crashes in adolescents after controlling for individual difference variables (i.e., demographics, sensation seeking, and prior experience with alcohol).

H2: Greater attention to crime and emergency entertainment shows would positively predict alcohol-related risk perceptions including a) perceived severity; b) perceived controllability; c) perceived alcohol-attributable fraction; and d) perceived concern of alcohol-related injuries and crashes in adolescents after controlling for individual difference variables (i.e., demographics, sensation seeking, and prior experience with alcohol) and exposure.

### **Exposure and Attention as Endogenous or Mediating Variables**

Recent research in media effects argues for dynamic relationships between exogenous variables (e.g. demographics) and effects of media. From this perspective, media usage instead of being defined as the starting point of effects is considered as a mediating process between exogenous variables (and individual differences) and effects of the media thus making media use endogenous in nature (Bucy & Tao, 2007; Slater & Rasinski, 2005).

A recent study provided evidence in support of this notion when authors found that adolescents who were sexually active were more likely to seek sexualized media and exposure to such sexualized media environment in turn influenced their levels of sexual activity (Bleakley, Hennessy, Fishbein, Jordan, 2008). Similarly, attention to news stories related to alcohol mediated the effects of sensation seeking and prior negative experience with alcohol on adolescents risk perceptions regarding alcohol (Slater, Hayes, & Ford, 2007). Sensation seeking influenced adolescent's levels of attention towards anti and prosmoking media messages, and attention to these media messages impacted their smoking intentions (Paek, 2008).

Research has focused heavily on variables which may mediate or moderate the influence of media use on alcohol-related outcomes, studying mediators including peer alcohol use, alcohol prototypes, expectancies, and willingness (Dal Cin et al., 2009), and parental mediation (Dalton et al., 2006; Austin & Chen, 2003). Only a handful of studies to date, as noted above, have looked at how media use itself can mediate the effect of exogenous variables on adolescent's alcohol-related risk perceptions, as we hypothesize here.

### **Exogenous/Control Variables**

In this study we examine the impact of individual difference variables of age, gender, academic performance, ever having been drunk, sensation seeking, and prior negative experience with alcohol on adolescent's alcohol-related risk perceptions. These variables serve as controls for assessing the predictive relationship between exposure and attention to medical and crime dramas, and may also have their own impact on risk perceptions. In some cases, as discussed below, their effects may be partially mediated by exposure and attention to crime and emergency shows—a central claim of the present research.

For example, we would expect prior experience with negative alcohol consequences to be mediated in part by exposure and/or attention to crime and emergency shows. We have found among both adults and adolescents that such first- or second-hand personal experiences predict greater attention to relevant crime and accident news (Slater & Rasinski, 2005; Slater, Hayes, & Ford, 2007), and that such attention can mediate effects on risk perceptions. Therefore, it is a plausible candidate for such a mediation prediction.

Similarly, sensation-seeking is another candidate for such mediation. Sensation seeking is believed to be biological in nature and describes people's tendency to engage in arousing, novel, and often risky experiences (Bardo & Mueller, 1991; Zuckerman, 1979). Research suggests that high sensation seeking adolescents often turn to illicit substances such as alcohol and drugs to satisfy their need for arousal and stimulation (Stephenson & Helme, 2006). We have found in prior work that exposure and/or attention to crime and injury news mediate effects of sensation-seeking on risk perceptions (Slater, Hayes, & Ford, 2007). It seems plausible to expect that such effects may be found in the case of adolescent viewing of crime and emergency dramas as well.

We can find no basis in the literature or logic to expect differences in viewership of crime and emergency dramas based on academic performance or alcohol use (once experience with negative alcohol use injury consequences has been controlled), so these variables function primarily as additional controls. However, generally younger adolescents are more involved with television viewing than older adolescents (Roberts & Foehr, 2008), so exposure and attention to crime and accident dramas is likely to decline with age and may partially explain age-related differences in risk perceptions. Gender differences in effects of such dramas are more uncertain, but it is possible such differences exist, given gender differences in television program choice (Brown & Pardun, 2004), and therefore they are tested in this study:

H3: Amount of exposure to crime and emergency shows will partially mediate the effect of age, gender, sensation seeking, and prior negative experience with alcohol on adolescents' alcohol-related risk perceptions.

H4: Amount of attention to crime and emergency shows will partially mediate the effect of age, gender, sensation-seeking and prior negative experience with alcohol on adolescents' alcohol-related risk perceptions.

## Methods

### Survey Methods

This study is based on a telephone survey of nationally representative sample of adolescents between the ages of 13–17 years. The data for this study came from the survey conducted by National Opinion Research Corporation in 2004 using random digit telephone sample of households purchased from Survey Sampling International. Using systematic sampling the numbers selected were called 25 times at different times before replacement. The interviewers asked the households to speak to anyone between the ages of 13 and 17 living in the household. If there was more than one teen living in the household at the time, the teen that had the most recent birthday was chosen as the sample. The total sample consisted of 200 male and 206 female respondents between the ages of 13 and 18 ( $M = 15.18$ ,  $SD = 1.41$ ; seven 18-year-olds were included, probably because a few youths rounded up their age), most of whom identified themselves as White (88%). The remaining respondents self-identified themselves as Black (5%) or of some other race (7%). Minimum cooperation rate was 60%; minimum response rate was 38% and adjusting for cases of unknown eligibility by incidence and accuracy rates (American Association for Public Opinion Research

response rate 3) was 54%. The response rate of 54% should be considered more appropriate for this study than the minimum response rate because of frequent unavailability of an adolescent of the desired age in the household contacted.

## Measurement

**Alcohol-related risk perceptions**—Previous research (e.g., Slovic, Fischhoff, Lichtenstein, 1985) has identified several key dimensions on which risks are judged, including likelihood or prevalence, degree of potential catastrophe, dread, severity, and controllability. In the context of alcohol-related injury risks (Slater & Rasinski, 2005) these were compressed to four that appeared both relevant to alcohol as a risk factor, and adequately measurable: Perceived concern, perceived alcohol-attributable fraction (the proportion of injuries or crimes attributable to alcohol), perceived severity, and controllability of alcohol-related injuries and crimes. Since any single alcohol-related incident rarely impacts large numbers of people at once, catastrophe-potential seemed to have little relevance. Dread—how subjectively awful a given risk feels—also did not seem a likely candidate for impact via media influence in this particular context. We therefore explored a more generic affective assessment—concern about alcohol-related risks—that proved important in prior research on adolescents' response to alcohol-related news (Slater, Hayes, & Ford, 2007).

Our series of items measuring alcohol-related risk perceptions were developed after a series of cognitive interviews ( $N = 29$ ) and pretests ( $N = 200$ ) with adults and adolescents. Concern related to injuries involving alcohol was measured by asking about the concern respondents felt when thinking about assaults, motor vehicle crashes, and other incidents in which alcohol was involved. The specific items measured concern relative to other concerns in a person's life to avoid ceiling effects found in an initial pretest of this survey (1 = *just a minor concern*, 10 = *one of my biggest concern*). The items measuring concern regarding alcohol-related injuries were averaged ( $M = 6.64$ ,  $SD = 2.15$ ,  $\alpha = .85$ ).

Alcohol-attributable fraction of alcohol-related injuries and crimes (an assessment of how much of the risk of injuries of a given type can be attributed to alcohol, a statistic that is typically estimated by epidemiologists when characterizing alcohol risks) was measured by asking respondents on a scale of 0–100 the percentage of injuries attributed to alcohol. The stem to the three questions read, “Think of all motor vehicle crashes that occur each year in this country...”; “Think about all of the cases of deadly incidents that occur each year in the U.S., such as fires, falls, drowning, and electrocutions ...”; “Think about all the cases of deadly attacks each year in this country ...”,; at the end of each question respondents were asked to think of the percentage (from 1 to 100) of those cases in which perpetrator or the victim was under the influence of alcohol. The three items were averaged ( $M = 49.90$ ,  $SD = 17.27$ ,  $\alpha = .73$ ).

To measure the severity of consequences associated with alcohol-related incidents respondents were asked two questions each regarding a) alcohol related motor vehicle crashes, b) assaults, and c) other injury incidents in which alcohol was involved (six items in total): One question asked how often incidents involving alcohol resulted in death and the other question asked how often incidents involving alcohol resulted in physical harm other than death. Response options ranged from 1 (*hardly ever*) to 10 (*almost always*). The six items were averaged to form a single score of perceptions of severity ( $M = 6.13$ ,  $SD = 1.42$ ,  $\alpha = .77$ ).

Controllability was measured by asking the extent to which people under the influence of alcohol could avoid being in a motor vehicle crash, assault, or other injury incident. Participants were asked, “To what extent can people who are under the influence of alcohol

avoid being attacked [avoid causing a crash; and avoid causing an incident such as a fire, electrocution, or drowning]" (1 = *not at all*, 10 = *completely*). The responses to the three items were averaged ( $M = 5.15$ ,  $SD = 2.06$ ,  $\alpha = .62$ ).

**Media use variables**—Exposure was measured by averaging respondent's answers regarding how many days in a typical week and how many days in the past week the respondent had viewed the police and emergency shows ( $M = 2.65$ ,  $SD = 2.32$ ,  $\alpha = .69$ ). More specifically respondents were asked "about how many TV shows about police, crime, or emergency services such as hospitals or firefighters do you watch in a typical week" and "about how many of those TV shows did you watch last week". Attention was measured by single item by asking how much attention the respondents paid to TV shows about police, crime, or emergency services such as hospitals or firefighters ( $M = 2.70$ ,  $SD = .95$ ).

**Demographics and other miscellaneous control variables**—Sex, age of the respondent, a measure of school performance, whether the respondent had ever been drunk, prior negative experiences with alcohol and sensation seeking were included as control variables. Age was measured in years by asking the respondent the year in which he or she was born ( $M = 15.18$ ,  $SD = 1.40$ ). Participants self-reported their grades (with higher score representative of higher grade) and if they had ever been drunk ranging from 0 (*never*) to 1 (*drunk at least once*). To measure prior negative experience with alcohol respondents were asked to indicate yes or no to the following three items: "Have you, a member of your family, or a close friend ever been involved in, a) motor vehicle crash, b) assault, and c) other injury-producing incident in which alcohol was involved. These three items were summed to produce a cumulative measure of prior negative first- or second-hand experiences with alcohol ( $M = .58$ ,  $SD = .86$ ). These experiences did tend to correlate, as indicated by the modest but acceptable alpha of .57. To measure sensation seeking respondents were asked to indicate their response to the following items: "I like to do exciting things even if they are risky" and "I'm willing to take chances without worrying much about the consequences". Scale anchors ranged from 1 (strongly disagree) to 4 (strongly agree). The two items were based on ones previously used by the authors (Slater, Hayes, & Ford, 2007); a similar two-item scale had adequate reliability (.67) in previous research (Stephenson, Hoyle, Palmgreen, & Slater, 2003). The two items were averaged ( $M = 2.32$ ,  $SD = 0.61$ ,  $\alpha = .57$ ).

## Data Analysis

We used hierarchical multiple regression and Preacher and Hayes (2008) macros to analyze the data and test the hypotheses. To test hypothesis 1 and 2 each risk perception (perceived concern, perceived severity, perceived alcohol-attributable fraction, and controllability) was tested separately but the regression model was set up in the same manner: In block 1 individual difference variables of age, gender, grades, ever been drunk, sensation seeking, and prior negative experience with alcohol were added. In block 2 and 3 exposure and attention to crime and emergency shows were added, respectively.

Hypothesis 3 and 4 proposed that exposure and attention to crime and emergency shows would mediate the effects of individual difference variables on adolescents alcohol-related risk perceptions. We conducted mediation analyses following Preacher and Hayes (2008), testing the significance of the indirect paths using bootstrapped distributions, to understand if exposure and attention to media was mediating the effect (or, in the absence of a direct effect, providing a path for an indirect effects) of exogenous variables on adolescents alcohol-related risk perceptions. We also report the mediation paths and the attenuation of direct effects with inclusion of the mediator per Baron and Kenny (1986).

## Results

Hypothesis 1 proposed a positive relationship between exposure to crime and emergency shows and adolescents risk judgments regarding alcohol-related incidents. This relationship was not significant (see Table 1) consistent with earlier findings suggesting the relatively smaller importance of exposure as a factor in adolescent media use (Slater, Hayes, & Ford, 2007). In the absence of any direct effects, we did not further test hypothesis 3 that proposed exposure as mediator between individual difference variables and alcohol-related risk perceptions among adolescents.

Hypothesis 2 proposed that attention to crime and emergency shows would predict alcohol-related risk perceptions after controlling for individual differences and exposure to such programming. To test the hypothesis, in a hierarchical regression model exogenous (age, gender) and other individual difference variables (academic performance, prior negative experience with alcohol, and sensation seeking) were added as a block. In the second step exposure to emergency and crime shows was added and in the third step attention was added. Hypothesis 2 was supported and attention to crime and emergency shows was predictive of the following alcohol related risk perceptions: Concern ( $\beta = .184, p < .001$ ), severity perceptions ( $\beta = .213, p < .001$ ), and perceptions of controllability ( $\beta = .152, p < .05$ ) regarding alcohol-related incidents after controlling for individual differences variables and exposure (see table 1).

Hypothesis 4 proposed attention to crime and emergency shows as a mediator between individual difference variables and adolescent's alcohol-related risk perceptions. Since we supported H2 and found that attention successfully predicted concern, perceived severity, and controllability regarding alcohol-related crashes, assaults, and other injury incidents, we conducted mediation analysis following Preacher and Hayes (2008), testing the significance of the indirect paths using bootstrapped distributions, to understand if attention was mediating the effect (or, in the absence of a direct effect, providing a path for an indirect effects) of exogenous variables on adolescents alcohol-related risk perceptions. We also report the mediation paths and the attenuation of direct effects with inclusion of the mediator per Baron and Kenny (1986).

In our analysis attention to crime and emergency shows partially mediated the effects of two variables, age and prior negative experience with alcohol, on adolescents' alcohol-related risk perceptions, as predicted. Attention did not mediate or provide an indirect path for effects of sensation-seeking or gender. Details regarding the significant effects follow.

In the Baron and Kenny (1986) mediation test, the relationship between the independent variable and the proposed mediator, and then between the mediator and dependent variable are assessed for significance. Then, the path between the independent variable and the dependent variable are compared to see the extent to which inclusion of the mediator attenuates that relationship. Finally, the significance of the indirect path from the independent variable through the mediator to the dependent variable is tested (Preacher & Hayes, 2008).

Age significantly predicted concern about risks of alcohol use in the bivariate model ( $\beta = -.237, p < .01$ ). In the mediation model, age significantly predicted attention to crime and emergency shows use ( $\beta = -.078, p < .05$ ) and attention to the shows significantly predicted concern about risks of alcohol use ( $\beta = .47, p < .001$ ). The direct effect of age on concern after including the mediator was also significant ( $\beta = -.200, p < .05$ ) but attenuated (.237 compared to .200 or 16% weaker in the mediated than in the unmediated model) thus indicating partial mediation (Baron & Kenny, 1986). The bootstrapped tests (Preacher &



Hayes, 2008) indicated that the indirect path was statistically significant,  $p < .05$ , providing inferential support for the claim of partial mediation.

Age predicted perceived severity of injuries and crashes due to alcohol use ( $\beta = -.188, p < .001$ ) in the bivariate model. In the mediation model, age predicted attention ( $\beta = -.078, p < .05$ ) and attention to the shows predicted perceived severity of alcohol-related injuries, assaults, and other crimes ( $\beta = .231, p < .01$ ). Direct effects of age on perceived severity of alcohol-related injuries remained significant when the mediator was included in the model ( $\beta = -.168, p < .01$ ) but the effects were attenuated and thus were indicative of partial mediation (Baron & Kenny, 1986); per the bootstrapped tests, the indirect path was statistically significant,  $p < .05$ .

Attention to crime and emergency shows also partially mediated the effects of age on perceived alcohol-attributable fraction of crashes, assaults, and other injury incidents. Age significantly predicted alcohol-attributable fraction in the bivariate model ( $\beta = -2.275, p < .001$ ). In the mediation model age predicted attention to crime and emergency shows use ( $\beta = -.078, p < .05$ ) and attention to the shows significantly predicted perceived alcohol-attributable fraction ( $\beta = 2.026, p < .05$ ). Direct effects of age on perceived alcohol-attributable fraction of crashes, assaults, and other incidents related to alcohol remained significant when the mediator was included in the model ( $\beta = -2.11, p < .01$ ) but the effects were attenuated and thus were indicative of partial mediation (Baron & Kenny, 1986); per the bootstrapped tests, the indirect path was statistically significant,  $p < .05$ .

There was a significant indirect effect of age through attention ( $\beta = -.078, p < .05$ ) to controllability ( $\beta = .334, p < .01$ ) but no partial mediation was found. The direct effect of age on perceived controllability of alcohol-related crashes and injuries was not significant ( $p > .05$ ). The indirect paths, however, were significant at  $p < .05$ ; this supports the existence of an indirect influence of age on perceived controllability through an effect of age on attention, but not mediation *per se*, as there was no direct effect to mediate.

Next we present the analyses that illustrate how attention mediated (or, in the absence of a direct effect, provided a path for an indirect effect) the effects of prior negative experience with alcohol on adolescents alcohol-related risk perceptions.

Prior negative experience with alcohol significantly predicted concern about risks of alcohol use ( $\beta = .320, p < .05$ ) absent the mediator. In the mediation model prior bad experience with alcohol predicted attention to crime and emergency shows ( $\beta = .130, p < .05$ ) and attention to the shows predicted concern about risks of alcohol use ( $\beta = .491, p < .001$ ). Direct effects of prior negative experience on concern regarding alcohol-related injuries remained significant after taking out the effect due to attention to these shows ( $\beta = .256, p < .05$ ). The attenuated effect was indicative of partial mediation (Baron & Kenny, 1986); per the bootstrapped tests, the indirect path was statistically significant,  $p < .05$ .

Prior negative experience with alcohol predicted attention to crime and emergency shows ( $\beta = .130, p < .05$ ) and attention in turn predicted perceived severity of alcohol-related injuries ( $\beta = .272, p < .001$ ); perceived alcohol-attributable fraction of crashes and other incidents involving alcohol ( $\beta = 2.223, p < .05$ ); and perceived controllability of alcohol-related injuries ( $\beta = .378, p < .001$ ). The direct effects on prior negative experience on these outcomes were not significant but the indirect paths via attention were significant at  $p < .05$ . Therefore, what influence prior negative experience had on these outcomes appear to be a result of increased attention to shows associated with such negative experience.

## Discussion

In this study, we were able to support hypotheses related to attention to crime and emergency shows as a predictor of alcohol-related risk perceptions and as a mediator of the effects of various individual-difference variables. Specifically, the analyses indicated that a) attention to crime/emergency shows successfully predicted risk perceptions (concern, perceived severity, and control) involving alcohol-related assaults, crashes, and other injuries, b) attention to crime and emergency shows mediated or provided an indirect path for the impact of age and prior negative experience with alcohol on perceptions of concern, severity, and control regarding alcohol-related incidents.

We also found effects of individual difference variables on adolescents' alcohol-related risk perceptions. Increase in age led to more concern about alcohol-related crashes, assaults, and other incidents but the relationship reversed in terms of perceptions of severity and alcohol-attributable fraction. Perceptions of concern, severity, and alcohol-attributable fraction of incidents involving alcohol were greater for women than for men. These findings are supported by previous work on gender differences in risk perceptions that suggests that women are more risk averse than men in general and associate greater risks with alcohol use (Gustafson, 1998; Spigner, Hawkins, Loren, 1993). Higher levels of sensation seeking predicted lower perceptions of alcohol-related risk, specifically concern and severity perceptions. This finding is also in line with the previous research that high sensation seekers are more likely to indulge in illicit drug use due to their inherent tendency to engage in risky activities (Donohew et al., 1991). Prior negative experience with alcohol also increased people's risk perceptions regarding perceived concern and perceived alcohol-attributable fraction of alcohol-related crashes, assaults, and other injury incidents. In the next section we focus our attention to the findings regarding media use variables and impact on adolescents alcohol-related risk perceptions.

The findings regarding crime and emergency shows complement earlier work (Slater, Hayes, & Ford, 2007) showing that attention to crime and accident news in part mediated effects of prior negative experience on adolescent risk perceptions, and suggest crime and emergency shows have effects in some ways comparable to the news with respect to risk perceptions. Prior findings regarding mediation of sensation-seeking's effect on risk judgments via attention to crime and accident news among adolescents did not replicate in the present context of entertainment dramas. A possible explanation is that sensation seeking—which was negatively related to attention to crime and accident news—may have had a paradoxical relationship with attention to crime and emergency shows. Persons higher in sensation seeking may on one hand be more attentive to the dramatic, exciting content of such shows, but on the other may be less attentive to the consequences shown than to the graphic elements of the drama.

We did not find significant effects of exposure predicting increased alcohol-related risk perceptions. This may be, as noted earlier, because youth may have less control over exposure to television programming than adults, as in many cases televisions are in common family locations and choice of programming may be negotiated with parents. On the other hand, many adolescents also have their own televisions (Roberts et al., 2005); unfortunately, we did not have data on this in our data set. It may also be that many adolescent viewers multi-task with the television on (Foehr, 2006; Roberts & Foehr, 2008); if so, only television content to which they are attentive is likely to impact beliefs and attitudes.

In one case we did find a significant negative coefficient for exposure, on perceived severity of injuries, contrasting with a stronger positive coefficient for attention on the same variable. Three possible explanations come to mind. One, of course, is sheer statistical anomaly. A

second possibility is a control variable that inflates negative effects of exposure. This seems plausible given that a check of the zero-order correlation between perceptions of severity and exposure showed the bivariate relation to be non-significant. Still another possibility is a third-variable explanation of some kind. For example, youth who are more exposed to such programs may live in households in which they, their siblings, or their parents watch more television. If so, they may be exposed to more television violence in general, and regard the risks of alcohol-related injury to be relatively modest in comparison to the other injuries portrayed in the course of their viewing. Measures of overall household viewing were not available as controls to address this possible explanation. Fortunately, such influences are unlikely to confound effects of attention to a specific genre of narrative (crime and emergency shows), the locus of the effects studied here.

Attention to the storyline is one of the proposed mechanisms in narrative transportation and narrative effect (Green & Brock, 2000). Most entertainment narratives are purposively selected and attended to by individuals relatively interested in and motivated to view the narrative genre (Knobloch, 2003; Zillmann, 1988). What remains to be explored from a theoretical vantage point, however, are the reasons for variability in attention (i.e., the individual differences that predict and are mediated by attention) and the distinctive implications of differing influences on attention. After all, attention is itself not necessarily monolithic; the nature of what is focused upon in the narrative may vary in substantively important ways.

Recently there has been renewed interest in factors of attention that lead up to and sustain attention during the viewing of a particular entertainment program (rather than television viewing in general), and, a clearer theoretical conceptualization of the concept of attention (Anderson & Kirkorian, 2006). For example, it would be of interest to more closely study the impact of such entertainment programs on persons who have had personal or secondhand experiences with health or safety consequences of the behaviors shown, and who are consequently more likely to be emotionally involved with the storylines (see Anderson & Kirkorian, 2006). How do such persons respond to these portrayals—with increased anxiety, with feelings of satisfaction regarding successful dramatic resolution of these situations which resonate with their own lives, with greater motivation to avoid such risks for themselves or people close to them? Similarly, it would be of interest to understand the nature of the age differences in attention and implications for the effects of these shows.

Another potential source of variation in attention and subsequent effects would be the specific content of a given crime or emergency service narrative, as previous research has demonstrated that program content could impact the levels of attention of viewers (Anderson, Huston, Schmitt, Linebarger, Wright, 2001). This study assesses such narratives in the broadest way possible, providing a very conservative test. It is probable that specific types of narrative, of portrayals of consequences for victims, perpetrators, and their families and friends, would significantly impact both the nature of attention and the degree of impact of such narratives on concern and risk perceptions. Moreover affective elements inherent in this genre of television programming (Bryant & Miron, 2002) could also produce varying levels of attention and emotional involvement in the narrative (Green & Brock, 2000) which could have implications on the degree of risks perceived by the viewers regarding alcohol-related incidents.

We also suggest that future research investigates crime shows and emergency shows separately to assess their effects on viewers alcohol-related risk perception, something that we did not do in the present study, and which might confound the results. Since we did not treat these two genres separately, we have no way of assessing if there are gender differences in risk perceptions based on different content in these shows. Likewise, it is

possible there may be age or sensation-seeking differences in responses to crime versus medical dramas. Moreover, it is possible that the two types of program may portray alcohol use and alcohol consequences in distinctive ways.

The other main limitations associated with this research are the use of self-report measures to report alcohol use, risk perceptions regarding alcohol, and media use, a rather generic item to assess attention to relevant media content, and the use of a cross-sectional data set which makes assertions about causality at best tentative. However reporting of risk perceptions and media use do not inherently contain obvious social desirability bias and thus self-report of these data should not skew the results. The use of our rather generic attention item is likely to reduce rather than inflate effects associated with attention, relative to more involved, multi-dimensional measurement schemes. Moreover, the cross-sectional associations certainly are unambiguous with respect to the overall positive valence of associations. It seems plausible to suggest that the relationship between risk perceptions and attention to such programming may flow in both directions, with attentive viewing of crime and emergency shows increasing perceived risks, and increased risk perceptions about assault and injury leading to greater attention to crime and emergency programming, providing mutual reinforcement over time (Slater, 2007). Longitudinal data would be required to explore more closely the dynamics of this causal flow, and experimental research would be needed to assess the possible mechanisms (e.g., accessibility of exemplars, as noted earlier) underlying such effects.

These results clearly indicate that entertainment programming may incidentally influence health-related beliefs and risk perceptions among adolescents. In so doing, this study bridges research showing the potential of narrative communication to intentionally influence health beliefs and behavior in a positive way (see Kreuter et al., 2007; Singhal & Rogers, 1999; Slater & Rouner, 2002), and research showing negative incidental influences of television and movie narratives (e.g., Dalton et al., 2003). In the case of crime/emergency shows and alcohol injury risk perceptions, this incidental influence of narrative entertainment messages, it appears, can be a pro-social one.

## Acknowledgments

This research was supported by grant AA10377 from the National Institute on Alcohol Abuse and Alcoholism to the first author.

## References

- Anderson, DR.; Kirkorian, HL. The psychology of entertainment. Mahway, NJ: Erlbaum; 2006. Attention and television; p. 33-54.
- Anderson DR, Huston AC, Schmitt KL, Linebarger DL, Wright JC. Early childhood television viewing and adolescent behavior: The Recontact Study. *Monographs of the Society for Research in Child Development* 2001;68(1):264, 1–143.
- Austin EW, Chen YJ. The relationship of parental reinforcement of media messages to college students alcohol-related behaviors. *Journal of Health Communication* 2003;8(2):157. [PubMed: 12746039]
- Bachman, JG.; Johnston, LD.; O'Malley, PM. How changes in drug use are linked to perceived risk and disapproval: Evidence from national studies that youth and young adults respond to information about the consequences of drug use. In: Donohew, L.; Sypher, HE.; Bukoski, WJ., editors. *Persuasive communication and drug abuse prevention*. Hillsdale, NJ: Lawrence Erlbaum; 1991. p. 133-156.
- Bardo, MT.; Mueller, CW. Sensation seeking and drug abuse prevention from a biological perspective. In: Donohew, L.; Sypher, HE.; Bukoski, WJ., editors. *Persuasive communication and drug abuse prevention*. Hillsdale, NJ: Erlbaum; 1991. p. 195-207.

- Baron RM, Kenny DA. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology* 1986;51:1173–1182. [PubMed: 3806354]
- Bleakley A, Hennessy M, Fishbein M, Jordan A. It works both ways: The relationship between exposure to sexual content in the media and adolescent sexual behavior. *Media Psychology* 2008;11(4):443. [PubMed: 20376301]
- Brodie M, Foehr U, Rideout V, Baer N, Miller C, Flournoy R, et al. Communicating health information through the entertainment media. *Health Affairs* 2001;20(1):192–199. [PubMed: 11194841]
- Brown JD, L'Engle KL, Pardun CJ, Guo G, Kenneavy K, Jackson C. Sexy media matter: Exposure to sexual content in music, movies, television, and magazines predicts black and white adolescents' sexual behavior. *Pediatrics* 2006;117(4):1018–1027. [PubMed: 16585295]
- Brown JD, Pardun CJ. Little in common: Racial and gender differences in adolescents' television diets. *Journal of Broadcasting and Electronic Media* 2004;48:266–278.
- Brown, JD.; McDonald, T. Portrayal and effects of alcohol in television entertainment programming. In: Martin, SE., editor. *The effects of mass media on the use and abuse of alcohol*. US Department of Health and Human Services; 1995. p. 133-150.
- Brown TN, Schulenberg J, Bachman JG, O'Malley PM, Johnston LD. Are risk and protective factors for substance use consistent across historical time? National data from the high school classes of 1976 through 1997. *Prevention Science* 2001;2(1):29. [PubMed: 11519373]
- Bryant, J.; Miron, D. Entertainment as media effect. In: Bryant, J.; Zillmann, D., editors. *Media effects: Advances in theory and research*. 2. Mahwah, NJ: Erlbaum; 2002. p. 549-581.
- Bucy EP, Tao C. The mediated moderation model of interactivity. *Media Psychology* 2007;9(3):647–672.
- Christenson, PG.; Henriksen, L.; Roberts, DF. *Substance use in popular prime time television*. Office of National Drug Control Policy: Mediascope; 2000.
- Collins RL, Ellickson PL, McCaffery D, Hambersoomians K. Early adolescent exposure to alcohol advertising and its relationship to underage drinking. *Journal of Adolescent Health* 2007;40(6): 527. [PubMed: 17531759]
- Collins RL, Ellickson PL, McCaffrey D, Hambaroomians K. Saturated in beer: Awareness of beer advertising in late childhood and adolescence. *Journal of Adolescent Health* 2005;37:29–36. [PubMed: 15963904]
- Collins RL, Elliott MN, Berry SH, Kanouse DE, Kunkel D, Hunter SB, et al. Watching sex on television predicts adolescent initiation of sexual behavior. *Pediatrics* 2004;114(3):280–289.
- Dal Cin S, Worth KA, Gerrard M, Stoolmiller M, Sargent JD, Wills TA, et al. Watching and drinking: Expectancies, prototypes, and friends' alcohol use mediate the effect of exposure to alcohol use in movies on adolescent drinking. *Health Psychology* 2009;28(4):473. [PubMed: 19594272]
- Dalton MA, et al. Parental rules and monitoring of children's movie viewing associated with children's risk for smoking and drinking. *Pediatrics* 2006;118(5):1932. [PubMed: 17079564]
- Dalton MA, Sargent JD, Beach ML, Titus-Ernstoff L, Gibson JJ, Ahrens MB, et al. Effect of viewing smoking in movies on adolescent smoking initiation: A cohort study. *The Lancet* 2003;362(9380): 281.
- Donohew, L.; Lorch, E.; Palmgreen, P. Sensation seeking and targeting of televised anti-drug PSAs. In: Donohew, L.; Sypher, HE.; Bukoski, WJ., editors. *Persuasive communication and drug abuse prevention*. Hillsdale, NJ: Lawrence Erlbaum; 1991. p. 209-226.
- Dutta MJ. Health information processing from television: the role of health orientation. *Health Communication* 2007;21(1):1–9. [PubMed: 17461747]
- Foehr, UG. A Kaiser Family Foundation Study; 2006. *Media multitasking among American youth: Prevalence, predictors, and pairings*. Retrieved from <http://www.kff.org/entmedia/upload/7592.pdf>
- Gerbner, G.; Gross, L.; Morgan, M.; Signorielli, N.; Shanahan, J. Growing up with television: Cultivation processes. In: Bryant, J.; Zillmann, D., editors. *Media effects: Advances in theory and research*. Mahwah, NJ: Erlbaum; 2002. p. 43-67.
- Green MC, Brock TC. The role of transportation in the persuasiveness of public narratives. *Journal of Personality and Social Psychology* 2000;79(5):701–721. [PubMed: 11079236]

- Greenberg BS, Rosaen SF, Worrell TR, Salmon CT, Volkman JE. A portrait of food and drink in commercial TV series. *Health Communication* 2009;24(4):295–303. [PubMed: 19499423]
- Gustafson PE. Gender differences in risk perception: Theoretical and methodological perspectives. *Risk Analysis* 1998;18(6):805–811. [PubMed: 9972583]
- Kean LG, Albada KF. The relationship between college students' schema regarding alcohol use, their television viewing patterns, and their previous experience with alcohol. *Health Communication* 2003;15(3):277. [PubMed: 12788675]
- Knobloch S. Mood adjustment via mass communication. *Journal of Communication* 2003;53(2):233.
- Kreuter MW, Green MC, Cappella JN, Slater MD, Wise ME, Storey D, et al. Narrative communication in cancer prevention and control: A framework to guide research and application. *Annals of Behavioral Medicine* 2007;33(3):221–235. [PubMed: 17600449]
- Lapinski MK, Nwulu P. Can a short film impact HIV-related risk and stigma perceptions? Results from an experiment in Abuja, Nigeria. *Health Communication* 2008;23(5):403–412. [PubMed: 18850388]
- McGuire, WJ. Theoretical foundations of campaigns. In: Rice, RE.; Atkin, CK., editors. *Public communication campaigns*. 2. Newbury Park, CA: Sage; 1989. p. 43-66.
- Morgan SE, Harrison TR, Chewning L, Davis LS, DiCorcia M. Entertainment (mis) education: The framing of organ donation in entertainment television. *Health Communication* 2007;22(2):143–151. [PubMed: 17668994]
- Movius L, Cody M, Huang G, Berkowitz M, Morgan S. Motivating television viewers to become organ donors. *Proceedings of the Cases in Public Health Communication and Marketing* 2007:1–20.
- Nariman, HN. *Soap operas for social change: Toward a methodology for entertainment-education television*. Praeger Publishers; 1993.
- National Institute on Alcohol Abuse and Alcoholism. The scope of the problem. 2008. Retrieved online on December 5, 2008, from <http://pubs.niaaa.nih.gov/publications/arh283/111-120.htm>
- Nielson. TV ratings. 2009a. Retrieved October 1<sup>st</sup>, 2009 from <http://en-us.nielsen.com/rankings/insights/rankings/television>
- Neilson. How teens use media: A Nielson report on myths and realities of teen media trend. 2009b. (2009). Retrieved from [http://blog.nielsen.com/nielsenwire/reports/nielsen\\_howteensusemedia\\_june09.pdf](http://blog.nielsen.com/nielsenwire/reports/nielsen_howteensusemedia_june09.pdf)
- Office of Applied Studies. Results from 2006 national survey on drug use and health: National Findings. 2006. Retrieved online on December 5, 2008 from <http://www.oas.samhsa.gov/NSDUH/2K6NSDUH/2K6results.cfm>
- Paek HJ. Mechanisms through which adolescents attend and respond to antismoking media campaigns. *Journal of Communication* 2008;58(1):84–105.
- Pechmann C, Shih C. Smoking scenes in movies and antismoking advertisements before movies: Effects on youth. *The Journal of Marketing* 1999;63(3):1–13.
- Preacher KJ, Hayes AF. Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods* 2008;40:879–891. [PubMed: 18697684]
- Rideout, V. Television as a health educator: A case study of Grey's anatomy. A Kaiser family. Foundation; 2008. report retrieved from <http://www.kff.org/entmedia/upload/7803.pdf>
- Roberts, DF.; Foehr, UG.; Rideout, V. Generation M: Media in the lives of 8–18 year-olds. A Kaiser Family Foundation Study; 2005. Retrieved from <http://www.kff.org/entmedia/entmedia030905pkg.cfm>
- Roberts FD, Foehr UG. Trends in media use. *The Future of Children* 2008;18(1):11–37. [PubMed: 21338004]
- Rogers EM, Singhal A. Empowerment and communication: Lessons learned from organizing for social change. *Communication yearbook* 2003;27:67–86.
- Sargent JD, Wills TA, Stoolmiller M, Gibson J, Gibbons FX. Alcohol use in motion pictures and its relation with early-onset teen drinking. *Journal of Studies on Alcohol* 2006;67(1):54. [PubMed: 16536129]

- Sargent JD, et al. Exposure to smoking depictions in movies: its association with established adolescent smoking. *Archives of Pediatrics and Adolescent Medicine* 2007;161(9):849. [PubMed: 17768284]
- Shrum LJ. Assessing the social influence of television: A social cognition perspective on cultivation effects. *Communication Research* 1995;22:402–429.
- Singhal A, Rogers EM. Educating through television. *Populi (Journal of the United Nation's Population Fund)* 1989;16(2):38–47.
- Singhal A, Rogers EM. A theoretical agenda for entertainment-education. *Communication Theory* 2002;12(2):117.
- Singhal, A.; Rogers, EM. *Entertainment-Education: A Communication Strategy for Social Change*. Mahwah, NJ: Lawrence Erlbaum Associates; 1999.
- Slater MD, Hayes AF, Ford VL. Examining the moderating and mediating roles of news exposure and attention on adolescent judgments of alcohol-related risks. *Communication Research* 2007;34:355–381.
- Slater MD. Reinforcing spirals: The mutual influence of media selectivity and media effects and their impact on individual behavior and social identity. *Communication Theory* 2007;17:281–303.
- Slater MD, Rasinski KA. Media exposure and attention as mediating variables influencing social risk judgments. *Journal of Communication* 2005;55:810–827.
- Slater MD, Rouner D. Entertainment-education and elaboration likelihood: understanding the processing of narrative persuasion. *Communication Theory* 2002;12(2):173.
- Slovic, P.; Fischhoff, B.; Lichtenstein, S. Characterizing perceived risk. In: Kates, RW.; Hohenemser, C.; Kasperson, J., editors. *Perilous progress: Technology as hazard*. Boulder CO: Westview; 1985. p. 91-123.
- Spigner C, Hawkins WE, Loren W. Gender differences in perception of risk associated with alcohol and drug use among college students. *Women & health* 1993;20(1):87–97.
- Stephenson MT, Helme DW. Authoritative parenting and sensation seeking as predictors of adolescent cigarette and marijuana use. *Journal of drug education* 2006;36(3):247–270. [PubMed: 17345917]
- Valente TW, Murphy S, Huang G, Gusek J, Greene J, Beck V. Evaluating a minor storyline on ER about teen obesity, hypertension, and 5 A Day. *Journal of Health Communication* 2007;12(6):551–566. [PubMed: 17763052]
- Vaughan PW, Rogers EM, Singhal A, Swalehe RM. Entertainment-education and HIV/AIDS prevention: A field experiment in Tanzania. *Journal of Health Communication* 2000;5:81–100. [PubMed: 11010359]
- Zillmann, D. Mood management: Using entertainment to full advantage. In: Donohew, L.; Sypher, HE.; Higgins, ET., editors. *Communication, social cognition, and affect*. Hillsdale, NJ: Lawrence Erlbaum Associates; 1988. p. 147-171.
- Zillmann, D.; Brosius, H. *Exemplification in communication: The influence of case reports on the perception of issues*. Mahwah, NJ: Lawrence Erlbaum Associates; 2000.
- Zuckerman, M. *Sensation seeking: Beyond the optimal level of arousal*. Hillsdale, NJ: Lawrence Erlbaum; 1979.

**Table 1**  
Hierarchical Regressions Testing Attention to Crime/Emergency Programs Controlling for Other Predictors of Four Alcohol-related Risk Perceptions

	Concern			Severity			Alcohol-attributable Fraction			Controllability		
	$\beta$	R <sup>2</sup>	$\Delta R^2$	$\beta$	R <sup>2</sup>	$\Delta R^2$	$\beta$	R <sup>2</sup>	$\Delta R^2$	$\beta$	R <sup>2</sup>	$\Delta R^2$
Step 1		.18****			.13****			.08**			.02	
Age	.16*			-.17**			-.16*					
Gender	.24**			.20**			.15*					
Grades	.11			.08			.02					
Drunk	-.04			-.04			-.06					
Sensation Seeking	-.24****			-.19**			-.01					
Negative Experience	.19**			.11			.15*					
Step 2		.19****	.01		.14****	.01*		.08**	.00		.02	.00
Exposure	-.07			-.12*			.02					
Step 3		.22****	.03**		.18****	.04**		.09**	.01		.04	.02*
Attention	.18**			.21****			.11					.15*

Note.

\*  $p < .05$ ,

\*\*  $p < .01$ ,

\*\*\*  $p < .001$ .