



# A longitudinal study on the relationship between adolescents' medical drama viewing and speeding



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## ARTICLE INFO

### Article history:

Received 28 March 2014

Received in revised form 8 September 2015

Accepted 7 October 2015

Available online 11 November 2015

### Keywords:

Fear

Medical drama

Risk perception

Risk-taking

Speeding

Television

## ABSTRACT

The present study aimed to examine whether watching medical drama had a long-term protective effect on speeding behavior. Specifically, this research examined the extent to which medical drama viewing in adolescence predicts risk perceptions, crash fear, speeding attitudes and self-reported speeding behavior in early adulthood. Using a longitudinal research method, 487 adolescents ( $M_{\text{age}} = 17.7$  at baseline) who responded to an earlier survey were re-interviewed five years later. Structural equation modeling indicated that more medical drama viewing at baseline was associated with increased risk perception and higher driving-related fear five years later. The fear of being involved in a traffic crash appeared to be associated with less favorable attitudes toward speeding. Furthermore, in line with the expectations, these speeding attitudes were a significant predictor of self-reported speeding behavior. These results help to provide a better understanding of the relationship between media use and subsequent risk-taking, and have implications for prevention efforts.

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## 1. Introduction

The high involvement of young drivers in traffic crashes is well documented in the literature (Elvik, 2010; Niederlaender, 2006; Toroyan & Peden, 2007). The relative injury crash rate for car drivers between 18- and 24-years-old is five to ten times that of drivers in the safest age group (Elvik, 2010). Although there is no question about the greater risk of young drivers relative to older drivers, many questions still remain about the contributors to this phenomenon (Shope, 2006). In this respect, scholars have recently stressed the importance of examining the media as one of the predictors of risky driving behavior (Beullens, Roe, & Van den Bulck, 2011a, 2011b; Fischer, Greitemeyer, Kastenmüller, Vogrincic, & Sauer, 2011). The present study contributed to this line of research by examining the role of exposure to one genre of entertainment media, specifically medical dramas, on the development of risk-averse attitudes, risk perceptions, crash fear and speeding behavior.

Overall, experimental (Fischer, Guter, & Frey, 2008; Fischer, Kubitzki, Guter, & Frey, 2007; Fischer et al., 2009, 2011) and longitudinal (Beullens et al., 2011a, 2011b) research in this domain has found that exposure to risk-promoting media results in higher accessibility of risk-taking cognitions and affect and in increased risk-taking in a computer simulated driving situation (Fischer et al., 2007, 2008, 2009), and in increased self-reported risky driving (Beullens et al., 2011a, 2011b).

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However, other work has suggested that the media can have positive influences on consumers. Cultivation theory posits that the media, particularly television, creates in viewers a perception that what they see portrayed in the media reflects reality. Furthermore, viewers watching a lot of television will base their views of reality more strongly on the “reality” portrayed on television than viewers watching less (Gerbner, Gross, Morgan, & Signorielli, 1986). According to cultivation theory, recurring exposure to the negative consequences of risky driving behavior results in more negative perceptions and attitudes toward risk-taking in traffic, which eventually may result in more cautious driving.

Importantly, there is little longitudinal work examining the role of the media in risky driving behavior. Studying how media exposure as a teenager might affect later risky driving behavior as a young adult is a powerful research methodology that can answer questions about the role of the media in the development of attitudes and beliefs that may contribute to risky or safe driving behavior. More complete knowledge of these factors can help in the development of more effective prevention messages and audience targeting.

One recent study examined whether frequent news viewing as a teenager was associated with later risky driving behavior (Beullens et al., 2011b). The analysis showed that greater exposure to television news among adolescents was associated with lower risk-taking attitudes, intentions and behavior after a two-year interval. This finding is consistent with a cultivation theory explanation because traffic crashes are overrepresented in news media, and reports of traffic crashes often describe negative consequences such as fatalities and injuries (Frost, Frank, & Maibach, 1997). This overrepresentation would cultivate the idea that driving is more risky among those watching television news frequently as opposed to those not watching television news regularly, and was confirmed in the study.

The present study extended this recent line of research on the protective effects of the media on driving behavior in three ways. First, this study examined *medical drama* viewing as a marker of media images showing the negative consequences of driving. To our knowledge, this was the first study to examine this genre in relation to risky driving. Second, this research focused on the long-term relationship between media use and risk-taking by examining the relationship between media use in the teen years and self-reported driving behavior as a young adult (five years after baseline measurement). Third, this research examined the associations between medical drama viewing, risk perception, crash fear and attitudes, given that past research usually only included one of these constructs (e.g., Beullens & Van den Bulck, 2008; Beullens et al., 2011a, 2011b).

### 1.1. Medical drama

There are several reasons why medical drama viewing might be associated with risk-taking cognitions, attitudes and self-reported behavior. Medical dramas such as *ER* and *Grey's Anatomy* feature doctors' efforts to cure illness and prevent death as a major plot line of each episode (Harris & Willoughby, 2009; Moeller, Moeller, Rahey, & Sadler, 2011). Illness and death are prominently featured with patients and dead persons being shown in 35% of the broadcasting time of medical dramas (Van Mierlo, 2007). Death tends to be exaggerated in such programs. The chances of dying from a car crash are almost three times higher on television than in real life (Van Mierlo, 2007). Thus, from the viewpoint of cultivation theory, heavy viewers (those who view more than average) of medical drama should develop a belief that car crashes are both more common, and more deadly, than they are in real life.

Medical drama is often fast-paced and visually exciting, and its popularity has increased over the past decade in Europe as well as in the United States (Baer, 1996; Strauman & Goodier, 2008). Prior research has shown that exposure to medical drama affects the lay public's perceptions of several health topics frequently depicted in medical drama's story lines such as cardiopulmonary resuscitation, seizures, and the like (Diem, Lantos, & Tulskey, 1996; Harris & Willoughby, 2009; Moeller et al., 2011). Furthermore, research within the domain of entertainment-education has indicated that even limited airtime of health topics may have a (modest) impact on viewers' knowledge of health issues, their attitudes, and even behavior (Brodie et al., 2001; Valente et al., 2007). Thus, it was expected that medical drama viewing would affect young drivers' perceptions of the risks of driving.

### 1.2. Risk perception, crash fear, and attitudes

Much of the research on the effects of the media on risk-taking behavior has used a theoretical framework based on cultivation theory and this research has regarded television viewing as a direct predictor of risky driving attitudes (see Beullens et al., 2011b). Yet, cultivation theory posits an important distinction between first and second order cultivation effects. First order effects relate to estimations of the prevalence of certain occurrences or facts, whereas second order effects concern attitudes toward specific behaviors. Gerbner et al. (1986) have argued that these first order beliefs are a significant source for the second order broader attitudes. Thus, following cultivation theory, the typical effect of media on behavior is not directly due to the viewing, but rather is through intervening variables such as fear and risk perception. Therefore, extending past research (e.g., Beullens et al., 2011a, 2011b), the present study examined the relationship between medical drama viewing and attitudes, and also included the potential direct and indirect associations between medical drama viewing, crash fear and risk perception. As has recently been emphasized by several authors, there is a lack of knowledge on the pathways through which media use is associated with behavioral changes (Lang & Ewoldsen, 2010; Valkenburg & Peter, 2013). Thus, one of the aims of the present study was to examine two of the potential pathways through which medical drama viewing and speeding attitudes might be related and to examine both direct and indirect relationships.

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