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DOES MASS-MEDIA MESSAGE INFLUENCE AGGRESSIVE AND RISKY DRIVING? A PILOT STUDY

Corneliu Havârneanu, Simona Popușoi

Alexandru Ioan Cuza University of Iasi, Faculty of Psychology and Education Sciences, Iasi 700554, Romania

Abstract

Nowadays, media frequently presents models of risk taking and aggressive behaviour. A growing body of research has shown that risk glorifying portrayals in the media have a significant impact on risk taking behaviour. Through this study we tested the hypothesis that passive media content has an impact on risky, aggressive driving and norms violating. Under positive media message content, drivers reported lower levels of aggression and risk-taking behaviour. Moreover, the tendencies of norms violating tend to increase when being presented with negative media content. Therefore, understanding the influence of mass media content upon driver’s behavior is mandatory.

Keywords: mass-media messages; risky driving; aggressive driving.

1. INTRODUCTION

The influence of media messages on individuals’ behavior has been long tested. Reckless and aggressive driving have received heightened attention due to their role in road crashes. Worldwide, traffic accidents are the main cause of lethal injuries in those between 10 and 30 years old, constituting more than 10% of all fatalities in this age group. Many of these accidents are caused by unnecessary risk-taking behavior, such as alcohol consumption, over-speeding, failing to use belt or ignoring the right of way (Harvey, Toewner, Peden, Soori & Bartolomeos, 2009).

A growing body of research has been focused on the impact of exposure to risk glorifying media on both risk taking inclinations and actual risk taking behavior. When media emphasis on presenting news about risk taking or aggressive behaviors, media portrayals plays a crucial role in explaining individuals’ inclinations and behaviors. This being said, several studies have shown a positive connection between exposure to risk glorifying media content and risk-taking inclinations (Fischer et al., 2009; Hines, Saris & Throckmorton-Belzer, 2000; Kulick & Rosenberg, 2001). Moreover, findings suggest that higher levels of exposure to risk glorifying media are associated with higher levels of risk taking behaviors. Kubitzki (2006) found a positive relationship between playing risk-glorifying racing games and underage driving and Beullens and van den Buleck (2008) concluded that there is a positive association between the consumption of risk glorifying media and positive attitudes toward both risky driving and willingness to take risk in traffic situations.

The main explanation of media violence effects is that aggressive media content triggers aggressive ideas, which prime other, semantically related thoughts and cognitions in turn (Berkowitz, 1984). This being said, aggressive media content may activate the concept of aggression and increase the cognitive accessibility of cognitions, emotions, and behavioral script related to it, leading the individual to express aggressive behavior within his social environment (Bushman & Anderson, 2002). Moreover, the General Aggression Model (Anderson & Bushman, 2002) explains the long term effect of media content by the learning processes that commence when individuals are repeatedly exposed to violent media, the recurring consumption of violent media rehearse and activating aggressive cognitions, emotions, beliefs, and behavioral patterns (Anderson et al., 2010).

Even if the active media exposure (such as playing a risk glorifying video game) leads to leager effect sizes than the passive media exposure (such as watching a TV commercial) (Fischer, Greitemeyer, Kastenmüller, Vogrincic & Sauer, 2011), the latter should not neglected. The Papageno effect states that public presentations in mass-media of suicidal ideation, not accompanied by attempted or completed suicide, is associated with a decrease in suicide rates. The Werther effect states that suicide rates increases along with the frequency of
exposure in media of suicidal attempts or completed suicide, within a week from exposure and especially in regions over-exposed to media content (Niederkrotenthaler et al., 2010). This being said, in order to have a positive impact on individuals’ cognitions, emotions, beliefs, and behavior, media content should emphasize on exposing positive models of behavior (Dervic et al., 2012).

2. PURPOSE OF STUDY

Through this study we tested the hypothesis that the type of message content from mass-media influences drivers’ aggressive and risky behaviors. Moreover, we also presume that media content may have an influence on the tendency of violating traffic norms.

3. METHOD

One hundred and fifty drivers ($n_{men} = 75$) with age ranging from to 19 to 26 ($M = 22.81; SD = 1.40$), driving experience ranged from 1 to 7 years ($M = 3.53; SD = 1.31$), and the average mileage in the last year was 10150.44 km. Three experimental conditions were created using information about the frequency of risky and aggressive behavior, and norms violating in traffic, namely positive, negative and neutral media message. The positive condition described traffic situation were drivers rarely expressed a risky and aggressive behavior whereas the negative message condition described frequently risky and aggressive behavior.

The instruments used for measuring driver’s behavior were DAX 49 (Driver Anger Expression – Sârbescu, 2012), DATQ 65 (Driver’s Angry Thoughts Questionnaire – Deffenbacher, Petrilli, Lynch, Oetting & Swaim, 2003), DBQ (Driver’s Behavior Questionnaire – Havârneanu et al., 2010) and 18 items meant to asses driver’s risky behavior in traffic. Background data such as age, gender, and average mileage were recorded.

The adapted form of DAX 49 has 30 items and is comprised of three dimensions, namely Verbal and Physical Aggressive Expression ($\alpha = .81$), Adaptive/Constructive Expression ($\alpha = .70$) and Using the Vehicle for Aggressive Expression ($\alpha = .72$). DATQ 65 has 65 items and is comprised of five scales related to angry cognitions, namely Judgmental and Disbelieving Thinking ($\alpha = .69$), Pejorative Labeling and Verbally Aggressive Thinking ($\alpha = .81$), Revenge and Retaliatory Thinking ($\alpha = .84$), Physically Aggressive Thinking ($\alpha = .93$) and Coping Self-Instruction ($\alpha = .78$). The adapted version of DBQ has three scales, namely human error ($\alpha = .83$), very dangerous violations ($\alpha = .82$) and dangerous deviations with reference to hurry, speed and impatience in traffic ($\alpha = .87$). The last instrument used evaluates risky behaviour in traffic and is comprised of five dimensions, namely speed ($\alpha = .73$), alcohol use ($\alpha = .75$), use of seat belt ($\alpha = .81$), ignored right of way ($\alpha = .80$) and reckless driving ($\alpha = .74$).

4. RESULTS

Multiples Univariate Analysis of Variance and post-hoc tests (Bonferroni) were computed in order to test the effect of the experimental condition upon the aggressive, risky behavior and norms violation (see Table 1).

4.1. Main effect of the media messages on the aggressive behavior and angry cognitions

Concerning verbal and physical aggressive expression, in the negative message condition drivers reported more aggressive behavior ($M = 23.34$) compared to those in the positive ($M = 17.66$) or the neutral condition ($M = 19.26, F(2, 147) = 19.60; p < .01; \eta_p^2 = .21$). There are no significant differences between those in the positive message condition and neutral message condition ($p = .268$). Moreover, there is a main effect of the experimental condition on the adaptive/constructive expression of aggression ($F(2, 147) = 25.87; p < .01; \eta_p^2 = .26$), drivers reported less constructive expression of aggression in the negative message ($M = 26.72$) compared to those in the positive condition ($M = 31.58$) or the neutral condition ($M = 30.68$). Furthermore, there is a main effect of the experimental condition on the expression of aggression using the vehicle ($F(2, 147) = 11.79; p < .01; \eta_p^2 = .13$), drivers in the negative message reported more aggressive behaviors ($M = 17.44$) compared to those in the positive message ($M = 15.26$).

There is a main effect of the experimental condition on the pejorative labeling and verbally aggressive thinking ($F(2, 147) = 42.14; p < .01; \eta_p^2 = .36$), drivers in the negative message condition had more angry cognitions ($M = 42.12$) compared to those in the positive message condition ($M = 30.42$) or the neutral message condition ($M = 35.54$). Moreover, those in the neutral message condition were more verbally aggressive thinking compared to those in the positive message condition. Furthermore, drivers in the negative message condition had more revenge cognitions ($M = 26.50$) compared to those in the positive message condition ($M = 20.44, F(2, 147) = 20.24; p < .01; \eta_p^2 = .26$). Compared to those in the positive message condition, drivers in the neutral
condition had more revenge cognitions \( (M = 25.32; p = .01) \). There is a main effect of the experimental conditions on physically aggressive thinking \( (F(2, 147) = 21.53; p < .01; \eta_{p}^{2} = .22) \), drivers in the negative message condition had more physically aggressive cognitions \( (M = 12.88) \) compared to those in the positive message condition \( (M = 8.98) \) or those in the neutral condition \( (M = 10.18) \). Last but not least, drivers in the positive message reported more coping self-instructions \( (M = 29.84) \) compared to those in the negative condition \( (M = 23.96) \) or those in the neutral condition \( (M = 27.24; F(2, 147) = 18.28; p < .01; \eta_{p}^{2} = .19) \).

4.2. Main effect of the media messages on the risky behavior

Regarding risky behavior, drivers in the negative message condition tend to over-speed more \( (M = 21.04) \) compared to drivers in the positive message condition \( (M = 15.70) \) or those in the neutral message condition \( (M = 17.50; F(2, 147) = 31.19; p < .01; \eta_{p}^{2} = .29) \). Experimental condition has an impact on reported alcohol use \( (F(1, 147) = 6.84; p < .01; \eta_{p}^{2} = .08) \), drivers in the negative message condition reported more of this kind of risky behavior \( (M = 5.92) \) compared to those in the positive message condition \( (M = 4.34) \). Moreover, drivers in the negative message condition reported less use of safe-belt \( (M = 6.70) \) compared to those in the negative message condition \( (M = 3.98) \) or those in the neutral condition \( (M = 4.54; F(2, 147) = 45.96; p < .01; \eta_{p}^{2} = .38) \). Drivers in the negative message condition reported frequently ignoring the right of way \( (M = 4.88) \) compared to those in the positive \( (M = 2.46) \) or neutral condition \( (M = 2.88; F(2, 147) = 64.35; p < .01; \eta_{p}^{2} = .46) \). Concerning reckless driving, drivers in the negative message condition reported higher levels of reckless driving \( (M = 12.80) \) compared to those in the positive \( (M = 9.94) \) or neutral message condition \( (M = 11.28; F(2, 147) = 17.00, p < .01; \eta_{p}^{2} = .18) \).

4.3. Main effect of the media messages on norms violation

Regarding traffic violations, experimental conditions have an impact on the frequency of committing very dangerous violations \( (F(2, 147) = 32.74; p < .01; \eta_{p}^{2} = .30) \), drivers in the negative message condition reported more dangerous violations \( (M = 9.56) \) compared to drivers in the positive \( (M = 3.58) \) or neutral \( (M = 4.10) \) condition. Furthermore, when encountered with a negative media content, drivers reported more dangerous deviations \( (M = 20.08) \) compared to those in the positive \( (M = 11.34) \) or neutral \( (M = 12.86) \) condition \( (F(2, 147) = 41.21; p < .01; \eta_{p}^{2} = .35) \).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Negative media message (N = 50)</th>
<th>Experimental condition (N = 50)</th>
<th>Neutral media message (N = 50)</th>
<th>F-value (ηp²)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
</tr>
<tr>
<td>Verbal and physical aggressive expression</td>
<td>23.34 (7.37)</td>
<td>17.66 (2.45)</td>
<td>19.26 (2.27)</td>
<td>19.60 ** (.21)</td>
</tr>
<tr>
<td>Adaptive/constructive expression of aggression</td>
<td>26.72 (4.56)</td>
<td>31.58 (3.05)</td>
<td>30.68 (2.92)</td>
<td>25.87 ** (.26)</td>
</tr>
<tr>
<td>Using the vehicle</td>
<td>17.44 (4.12)</td>
<td>15.26 (2.45)</td>
<td>18.04 (2.04)</td>
<td>11.70 ** (.13)</td>
</tr>
<tr>
<td>Pejorative labelling and verbally aggressive thinking</td>
<td>42.12 (9.57)</td>
<td>30.42 (4.17)</td>
<td>35.54 (3.65)</td>
<td>42.14 ** (.36)</td>
</tr>
<tr>
<td>Revenge and retaliatory thinking</td>
<td>26.50 (7.39)</td>
<td>20.44 (3.25)</td>
<td>25.32 (3.35)</td>
<td>20.24 ** (.21)</td>
</tr>
<tr>
<td>Physically aggressive thinking</td>
<td>12.88 (5.02)</td>
<td>8.98 (3.99)</td>
<td>10.18 (1.24)</td>
<td>21.53 ** (.22)</td>
</tr>
<tr>
<td>Coping self-instructions</td>
<td>23.96 (4.67)</td>
<td>29.84 (5.39)</td>
<td>27.24 (4.49)</td>
<td>18.28 ** (.19)</td>
</tr>
<tr>
<td>Over-speeding</td>
<td>21.04 (3.10)</td>
<td>15.70 (4.18)</td>
<td>17.50 (2.88)</td>
<td>31.10 ** (.29)</td>
</tr>
<tr>
<td>Alcohol use</td>
<td>5.92 (2.96)</td>
<td>4.34 (1.06)</td>
<td>5.22 (1.96)</td>
<td>6.84 ** (.08)</td>
</tr>
<tr>
<td>Use of safe-belt</td>
<td>6.70 (2.27)</td>
<td>3.98 (3.99)</td>
<td>4.54 (3.76)</td>
<td>45.96 ** (.38)</td>
</tr>
<tr>
<td>Ignoring the right of way</td>
<td>4.88 (1.63)</td>
<td>2.46 (3.78)</td>
<td>2.88 (3.77)</td>
<td>64.35 ** (.46)</td>
</tr>
<tr>
<td>Reckless driving</td>
<td>12.80 (3.57)</td>
<td>9.94 (1.64)</td>
<td>11.28 (1.60)</td>
<td>17.00 ** (.18)</td>
</tr>
<tr>
<td>Dangerous violations</td>
<td>9.56 (6.47)</td>
<td>3.58 (2.08)</td>
<td>4.10 (2.01)</td>
<td>32.74 ** (.30)</td>
</tr>
<tr>
<td>Deviations</td>
<td>20.08 (7.40)</td>
<td>11.34 (3.36)</td>
<td>12.86 (3.63)</td>
<td>41.21 ** (.35)</td>
</tr>
</tbody>
</table>

5. CONCLUSION

It is known that media content has an impact upon emotions, cognitions and behavior. Latter studies have shown that active and passive media exposure lead to an increase in maladaptive behavior, such as risk taking or aggression (Fischer et al., 2011). Whatewerever, even if the impact of active media exposure is considered to be a greater one upon behavior, the role of passive media exposure should not be neglected.

Through this study we tested the hypothesis that passive media content (e.g. news information) has an impact on risky and aggressive driving. Overall, the results obtained support the announced hypothesis. This being said, it seems that when encountered with a positive media content, drivers seem to report a decrease in risky and aggressive driving. When presented with a negative media message content, drivers tend to express
themselves more aggressively and take risks. According to the Werther effect, the more negative information lead to an increase in expressing a maladaptive behavior. Moreover, the General Aggression Model sustains that the reason why media exposure has an impact upon cognitions, emotions, and behavior is because of its priming effect and its capability to give role models (Anderson et al., 2010). As studies have previously shown, higher levels of exposure to risk glorifying media are associated with higher levels of risk taking behavior.

These findings are important for the prevention of risky and aggressive behavior in Romanian traffic situations, providing some hints for improving the intervention methods of mass media. First, as sustained by the Papageno effect, frequently exposing in the media positive behaviors, and not over exposing the negative ones, the frequency of maladaptive behavior decreases. Other scholars found out that when media presents cases of aggressive and risky driving, drivers tend to imitate their behavior, reporting higher rates of risk-taking and aggressive behavior.

Secondly, showing more positive behavioral examples in the media could lead to a decrease of risky and aggressive traffic behaviors by changing the descriptive norm of individuals. Descriptive norms characterize the behavior of the majority of individuals. Thus, media portrayals of individuals that frequently drive in an aggressive and risky manner lead to a maladaptive descriptive norm. Knowing that the descriptive norm is an important predictor of the behavior (Rivis, Sheeran & Armitage, 2006), media content should emphasize on showing more positive traffic behaviors. Moreover, Cestac, Paran and Delhomme (2014) have shown that young drivers follow mostly the descriptive norms, and not the injunctive ones (e.g. legal norms). Knowing that the main public of media content are young individuals, media content should emphasize on presenting examples of positive behaviors in traffic in order to decrease the frequency of driver’s aggressive and risky behavior.

6. REFERENCES