Seat Belt Safety Awareness: Evaluation of a County-Wide U.S. Program With Implications for Canadian Policy Reform

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ABSTRACT

In the five years prior to this campaign, 456 people died on Vermont's roadways. Local research suggested that at least 150 of those people would be alive today if they had buckled up. In the present study, we measured the effectiveness of a year-long county-wide seat belt safety campaign. We conducted a total of 463 telephone surveys of county residents (171 before implementation of the Click It or Ticket campaign and 292 following implementation of law enforcement and media initiatives) to determine the degree to which the campaign was influencing people's awareness of the issue and views about seat belt safety, including self-reported seat belt usage. Observational data was also collected from 18,344 vehicles which showed an increase from 68% to 75.1% in seatbelt usage among drivers and an increase of 56.9% to 68.7% among passengers. Based on these results it was concluded that the Click It or Ticket campaign was effective. Implications, in terms of Canadian highway safety policy and programming, are discussed.

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Researchers have repeatedly demonstrated that wearing safety belts reduces the likelihood of serious injury or death from automobile accidents (see e.g., Abdalla, 2005; Dee, 1998). In the five years prior to this campaign, 456 people died on Vermont’s roadways (Elrick, 2002). Local research suggested that at least 150 of those people would be alive today if they had buckled up. Historically, seven out of 10 people killed in crashes on Vermont highways were not restrained. Until the recent “Click-It-Or-Ticket” (CIOT) campaign was undertaken, Vermont ranked 40th out of the 50 states in the U.S. in seat belt use. It is estimated that crashes in Vermont have cost $1.2 billion in the five years spanning 1997 and 2002.

Although traffic fatalities in Canada have been in a relatively steady decline since the mid-1980s (with annual totals greater than 4,000), fatalities are still significant with some reports indicating 3,000 deaths per year (Canadian Motor Vehicle Traffic Collision Statistics, 2003). Based on crash data as outlined above, there is a serious need to address the lack of seat belt use through a combination of activities. It has been argued that success in this area will save lives, reduce injuries, and produce cost savings exponentially (Elrick, 2002). The two basic mechanisms for enhancing seat belt safety awareness and usage are mandatory seat belt laws (with corresponding enforcement) and public information media campaigns.

Early media campaigns to heighten seat belt safety awareness and increase belt usage were largely ineffective, a problem stemming in part from the substance of the media message (Perloff, 1993). Historically, the seat belt safety media campaigns that had limited success were composed of a fear-of-death oriented approach (Robertson, 1976; Soames Job, 1988). Eventually, research showed that the individuals targeted by seat belt safety media campaigns were not likely to believe that death was a likely outcome if they did not buckle up. Furthermore, data suggested that fear-of-fines was a more realistic fear object (Soames Job, 1988). Eventually, research led to policy changes toward requiring seat belt use, with fines for those in violation.
Laws requiring seat belts became popular in the late 20th century. By 1984, for example, seven of Canada’s provinces had mandatory seat belt laws and New York was the first state in the U.S. to enact a seat belt requirement (Cohen & Einav, 2001; School Bus Transportation News, 2006). Today, all but one state in the U.S. (New Hampshire) have mandatory seat belt laws, and all jurisdictions in Canada require seat belt use in some form or another (Canadian Council of Motor Transport Administrators, 2005; Liu, Lindsey, Chen, & Utter, 2006). Mandatory seat belt laws have proven to be an effective mechanism for improving seat belt usage, which translates into tangible reductions in traffic fatalities (Lieu et al., 2006; Cohen & Einav, 2001).

According to research, contemporary approaches to seat belt safety awareness have had a high level of success when combining: (1) stringent seat belt safety policy, (2) media saturation containing fine-oriented fear messages such as “Click it or Ticket,” and (3) increased law enforcement presence (see e.g., Clements & Denton, 2002; Milano, McInturff, & Nichols, 2004; Reinfurt, 2004; Salzburg & Moffat, 2004; Social Marketing Institute, 2006). The combination of media saturation with other supplemental forms of communication, such as high-profile law enforcement, has been shown to be a generally effective means of bolstering the efficacy of information campaigns (Perloff, 1993). In a specific sense, there is clear and compelling evidence that paid media is a very effective means of increasing seat belt awareness, which yields higher belt usage when combined with high-profile law enforcement (Milano et al., 2004). Recent data from seat belt awareness campaigns in the United States clearly shows that paid media results in enhanced earned media, netting a significantly higher level of overall campaign success (Milano et al., 2004). Data from North Carolina, the first state in which a coordinated paid media campaign was combined with enforcement efforts, suggests that media coverage is an essential component to sustained outcome success from seat belt awareness campaigns (Reinfurt, 2004), and similar success for media and enforcement combinations have been reported for other jurisdictions as well (see, e.g., Salzberg & Moffat, 2004).

According to the Canadian Council of Motor Transport Administrators (CCMTA) (n.d.; 2005), increasing seat belt safety is a priority for Canada. The CCMTA has been working since 1989 toward a goal of 95% seat belt usage in Canada, a goal that they missed in 1995 and 2001 and have set again as a goal for 2010 with a renewed campaign strategy. Similarly, the Royal Canadian Mounted Police (RCMP) has made it their goal to have the safest roads in the world by 2010, a goal that includes the 95% seat belt usage target espoused by the CCMTA (RCMP, n.d.). The RCMP efforts with regard to seat belt safety awareness have generally focused on an annual event called Operation Impact, with the more recent addition of a second campaign called Road Safety Week.

Operation Impact, originally a single-day event, is now a four-day event around Thanksgiving involving heightened enforcement operations in collaboration with other law enforcement agencies. According to the RCMP, “[o]peration Impact is a collaborative effort of Canadian police services in order to enforce the laws against high risk activities of road users. Operation Impact was originally a one day campaign aimed at increasing seat belt use across the country. It has evolved to target other high risk activities like impaired driving and intersection safety. Operation Impact is now a 4 day event starting on the Friday of the Thanksgiving weekend and ending on the Monday evening” (RCMP, n.d., retrieved August 7, 2006 from http://www.rcmp.ca/traffic/impact_e.htm). In 2003, the RCMP and other police agencies began to collaborate on a new annual event similar to Operation Impact called Road Safety Week. Road Safety week occurs in May surrounding the Victoria Day holiday weekend (CCMTA, 2005).

Penalties for seat belt violations are a critical component of safety awareness efforts. In both the U.S. and Canada, there is substantial variance in seat belt safety laws across jurisdictions. Some jurisdictions have primary seat belt safety laws, where drivers can be pulled over and fined for not wearing a seat belt. In jurisdictions with secondary laws, officers cannot stop a vehicle unless the driver is in violation of (or suspected of violating) another law or regulation, and they cannot issue a fine for only a seat belt violation, such a fine must accompany a ticket for some other primary violation. Data from the United States clearly shows higher seat belt usage (and corresponding lower injury and fatality rates) for jurisdictions with primary seat belt safety laws, in which law enforcement officers can stop a vehicle if they observe a seat belt violation, versus jurisdictions with secondary seat belt laws where officers can only issue a sanction for a seat belt violation if a vehicle has been stopped for some other violation (Cohen & Einav, 2001).

Seat belt safety laws in Canada are generally more stringent than in the United States, with fines for seat belt-related offenses ranging from $75 to $230 and demerit points ranging from 0 to 4. For example, Nova Scotia requires seat belts for drivers and passengers. This is a primary offence (drivers can be pulled over for not wearing a seat belt) and violators are subject to a summary conviction carrying a fine totaling $128.75 after all costs have been paid (CCMTA, 2005).
THE VERMONT PROJECT

Vermont is a secondary seat belt law state, with fines of $25 for first-time seat belt violations (Vermont Statute, 2005). With a grant from the United States National Highway Traffic and Safety Administration (NHTSA) (Elrick, 2002), the Rutland County (Vermont) Sheriff’s Department sought to increase seat belt use in Rutland County through the careful and organized use of media saturation and a vigorous enforcement component. It was the goal of this campaign to fine-tune efforts to target this population over a longer period of time than the more traditional statewide “Click it or Ticket” programs. Therefore, during a twelve-month period (October 1, 2002 through September 30, 2003), the Rutland County Sheriff’s Department worked in partnership with other Rutland County law enforcement agencies, local media outlets, the Vermont Governor’s Highway Safety Office, NHTSA (National Highway Traffic Safety Administration), Castleton State College, and local businesses to develop and deliver a comprehensive program aimed at increasing seat belt use in Rutland County.

There were four different time periods, which involved media and law enforcement blitzes: President’s Day, Memorial Day, Independence Day, and Labor Day. For each of these blitzes, media messages (television and radio advertisements combined with posters and other print media) about Click it or Ticket began several days prior to the holiday and spanned the holiday. Law enforcement (traffic stops) was heightened during the holidays.

METHOD

Telephone surveys were conducted prior to increased media and enforcement activities to determine baseline perceptions and knowledge of seat belt safety laws, as well as self-reported belt usage. The initial surveys were followed by additional telephone surveys following the first (President’s Day) and fourth (Labor Day) media & enforcement blitzes. Training in survey methodology adhered to standards approved in advance by NHTSA. A total of 463 phone surveys were conducted: 171 before implementation of the Click It or Ticket campaign (baseline data) and 292 following implementation of law enforcement & media campaigns: 164 after implementation of the Presidents’ Week Click it or Ticket began several days prior to the holiday and spanned the holiday. Law enforcement (traffic stops) was heightened during the holidays.

BASELINE OBSERVATIONS

Baseline observations of seat belt usage were collected prior to the Presidents’ Week blitz and additional observational data following the President’s Day, Memorial Day, Fourth of July, and Labor Day media and enforcement blitzes. In total, 18,344 vehicles were observed (see Table 1 for a detailed breakdown).

Table 1: Driver and passenger seat belt usage by time of observation.

<table>
<thead>
<tr>
<th>Observation Time</th>
<th>Number of vehicles</th>
<th>Driver belt use (%)</th>
<th>Passenger belt use (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Baseline</td>
<td>2972</td>
<td>1994 (68%)</td>
<td>423 (56.1%)</td>
</tr>
<tr>
<td>2: President’s Day</td>
<td>847</td>
<td>586 (69.8%)</td>
<td>143 (46.6%)</td>
</tr>
<tr>
<td>3: Memorial Day</td>
<td>6234</td>
<td>4624 (75.5%)</td>
<td>1302 (70.4%)</td>
</tr>
<tr>
<td>4: Independence Day</td>
<td>4759</td>
<td>3731 (79.0%)</td>
<td>1052 (72.0%)</td>
</tr>
<tr>
<td>5: Labor Day</td>
<td>3532</td>
<td>2494 (70.7%)</td>
<td>1192 (73.9%)</td>
</tr>
<tr>
<td>Total</td>
<td>18,344</td>
<td>13,429 (74.0%)</td>
<td>4112 (68.7%)</td>
</tr>
</tbody>
</table>

Note. Missing data (including absence of passengers) explains why percentages do not derive directly from dividing belt use by number of vehicles observed.

RESULTS

Observational data showed an overall increase from 68% at baseline to 75.1% seatbelt usage among drivers and an increase of 56.9% to 68.7% among passengers. Logistic regression analysis with dummy coding was employed to compare baseline (time 1) seat belt usage to usage observed following CIOT blitzes at times 2, 3, 4, and 5 (see Tables 1 and 2 and Figure 1).

Table 2: Logistic regression comparisons of observed seat belt usage following each CIOT blitz as compared to baseline seat belt usage.

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Odd Ratio</th>
<th>Wald Statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline - Time 2</td>
<td>1.09</td>
<td>1.04</td>
<td>.307</td>
</tr>
<tr>
<td>Baseline - Time 3</td>
<td>1.45</td>
<td>56.71</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Baseline - Time 4</td>
<td>1.77</td>
<td>114.59</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Baseline - Time 5</td>
<td>1.13</td>
<td>5.37</td>
<td>.021</td>
</tr>
<tr>
<td>Passenger Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline - Time 2</td>
<td>1.68</td>
<td>7.91</td>
<td>.005</td>
</tr>
<tr>
<td>Baseline - Time 3</td>
<td>1.86</td>
<td>48.20</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Baseline - Time 4</td>
<td>2.01</td>
<td>55.37</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Baseline - Time 5</td>
<td>2.22</td>
<td>73.59</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>
Seats Belt Awareness

Figure 1: Percentages of driver and passenger shoulder belt usage at baseline (Time 1) and following each media and enforcement blitz.

Specifically, among individuals who reported an increase in their seat belt usage, there were nominal differences in terms of three key reasons for reported increases: 1) increased awareness of safety advertising/messages in the media, 2) seat belt law, and 3) don’t want to get a ticket, see the first 3 rows of Table 4. The most likely reason that these differences were not significant is a lack of statistical power stemming from the small number of individuals who reported an increase in their seat belt usage (n = 35).

Table 3: Reasons given for those who reported increasing their seat belt usage during the past 30 days.

<table>
<thead>
<tr>
<th>Reason (multiple responses allowed)</th>
<th>Baseline (n = 12)</th>
<th>Post-CIOT (n = 23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased awareness of safety advertising/messages in the media</td>
<td>0.0% (n = 0)</td>
<td>26.1% (n = 6)</td>
</tr>
<tr>
<td>Seat belt law</td>
<td>8.3% (n = 1)</td>
<td>21.7% (n = 5)</td>
</tr>
<tr>
<td>Don’t want to get a ticket</td>
<td>8.3% (n = 1)</td>
<td>30.4% (n = 7)</td>
</tr>
<tr>
<td>Was in crash</td>
<td>8.3% (n = 1)</td>
<td>4.3% (n = 1)</td>
</tr>
<tr>
<td>Automatic belt</td>
<td>8.3% (n = 1)</td>
<td>8.7% (n = 2)</td>
</tr>
<tr>
<td>Influence/Pressure from others</td>
<td>16.7% (n = 2)</td>
<td>26.1% (n = 6)</td>
</tr>
<tr>
<td>More driving</td>
<td>16.7% (n = 2)</td>
<td>8.7% (n = 2)</td>
</tr>
<tr>
<td>Remember more/more in the habit</td>
<td>16.7% (n = 2)</td>
<td>17.4% (n = 4)</td>
</tr>
<tr>
<td>The weather/road conditions</td>
<td>58.3% (n = 7)</td>
<td>13.0% (n = 3)</td>
</tr>
<tr>
<td>The holiday traffic</td>
<td>16.7% (n = 2)</td>
<td>0.0% (n = 0)</td>
</tr>
<tr>
<td>Driving faster</td>
<td>16.7% (n = 2)</td>
<td>8.7% (n = 2)</td>
</tr>
</tbody>
</table>

Note. Because of the small number of participants reporting increased seat belt usage during the past 30 days (a total n of 35 across all 3 survey times), data from the two follow-up survey times (post-President’s Day and post-Labor Day) were combined.

DISCUSSION

The present data suggest that the fourfold CIOT media and enforcement campaign was effective in terms of increasing seat belt usage among both drivers and passengers. The trends in the current data generally indicate progressively higher seat belt usage for both drivers and passengers; seat belt usage generally continued to rise following each CIOT enforcement and media blitz. It is interesting to note the disparity between individuals’ self-reported seat belt usage and actual seat belt usage data measured via observation. The phone survey data suggest that people’s opinions about seat belts, and their actual usage of seat belts, were no different following the CIOT blitzes than they were at baseline. Taken in isolation, that self-report data seems to suggest that the CIOT campaign was ineffective. A close inspection of the reasons given for increases in seat belt usage suggest otherwise, however (see Table 4). And the observational data clearly indicate actual changes in seat belt usage following CIOT. The discrepancy between self reports of seat belt usage and observations of actual seat belt behavior can be explained in
possible, however, to observe nighttime seat belt usage. Strategies for observing seat belt usage, as it is very difficult to light hours. This is consistent with NHTSA-approved strat-
tifications that were conducted almost exclusively during day-
times and enforcement that were going on in New York. The more high-profile (and costly) Click it or Ticket adver-
sements during the period of the Rutland County campaign. Therefore, the increases in seat belt usage. In a related vein, it is important to note that there was a statewide Click or Ticket Campaign happening in nearby New York during the Rutland County campaign. It is possible that some other intervening factor or factors may have caused the increases in seat belt usage. In a related vein, it is important to note that there was a statewide Click or Ticket Campaign happening in nearby New York during the period of the Rutland County campaign. Therefore, the effects that we observed may have resulted, in part, from the more high-profile (and costly) Click it or Ticket advertisements and enforcement that were going on in New York.

Additionally, the present data are based on observations that were conducted almost exclusively during daylight hours. This is consistent with NHTSA-approved strategies for observing seat belt usage, as it is very difficult to observe the inside of passing vehicles in the dark. It is possible, however, to observe nighttime seat belt usage using sophisticated (and expensive) modern equipment for night vision, and there is some data to indicate that nighttime drivers have lower levels of seat belt usage than daytime drivers (Chaudhary, Alonge, & Preusser, 2005). This limitation restricts our ability to generalize these findings to nighttime drivers.

Implications for Canadian Road Safety Efforts

The present study has clear implications for Canadian road safety efforts. The CCMTA has set a high standard of 95% seat belt use across Canada by 2010 (CCMTA, 2005). Efforts towards this end include various policy reform recommendations, enhanced enforcement efforts, and bolstered educational campaigns. While an implicit aspect of the CCMTA’s recommendations seems to be enhanced media advertising, efforts toward this end are at only a preliminary stage. This is evidenced in the CCMTA’s most recent Annual Monitoring Report for 2004 (CCMTA, 2005). The CCMTA noted several jurisdictions where advertising has been used (i.e., Alberta, Saskatchewan and the Yukon), but media buys are not explicit in their 8 recommendations from that report.

The CCMTA does seem to be gradually moving toward a national media campaign to enhance public awareness of road safety issues. The CCMTA made arrangements with Alberta to adopt their promotional materials for a national media campaign, and the 2005 Road Safety Week was to include a national media component (CCMTA, 2005). Though the evaluation data from Road Safety Week 2005 are not yet available, the wealth of prior research on this topic underscores the effectiveness of paid media in combination with high-profile law enforcement.

Considering the current data, and past research highlighting the effectiveness of paid media combined with enforcement efforts (e.g., Milano et al., 2004; Salzberg & Moffat, 2004), the CCMTA and RCMP should consider strong shifts in policy orientation and funding toward coordinated, multi-event media buys in combination with high profile enforcement. Available data suggest that, at a minimum, paid national media should accompany the two annual road safety events Operation Impact and Road Safety Week. Furthermore, the present data strongly suggest that local media, combined with high profile enforcement, can have a dramatic impact on seat belt usage. Presumably, these types of effects would generalize to other road safety objectives as well.

The current data also suggest that having more than two stand-alone public awareness efforts per year might bolster the effectiveness of Canada’s road safety efforts and facilitate the likelihood of reaching the RCMP’s Road Safety Vision 2010 objectives. These data suggest Canada’s Operation Impact and Road Safety Week, two annual single-weekend events designed to (among other objectives)
heighten seat belt safety awareness, may be more effective with additional events throughout the year. This implication is supported by research on advertising effectiveness which shows that increased frequency of exposure is related to higher advertising impact (Tellis, 2004).

Additionally, the present data suggest that local campaigns combining paid media and high profile law enforcement can be effective. While many jurisdictions already have local efforts in place, CCMTA and the RCMP can continue to play an important role in local efforts by encouraging specific strategies for jurisdiction wide and/or intra-jurisdictional campaigns. These national organizations can help to suggest specific directions, preferably based on empirical evidence of success, and provide supporting materials for locally-based efforts. Future evaluation research in Canada will be able to show whether paid media is an effective way of enhancing the high profile law enforcement activities that are already in place, and whether local efforts at increasing safety belt awareness and usage can be effective.

REFERENCES


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