Drivers who cause serious injury – can we target behaviour change?

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Background Road safety campaigns tend to be nationally focussed, targeting all drivers, however these are general and often ineffective in reaching drivers causing serious road injury-collisions. This study aimed to identify culpable drivers involved in collisions and consider the potential of delivering focused road safety campaigns to reduce serious injury on the roads.

Methods This study linked UK police data (STATS19) with hospital trauma data from the Trauma Audit Research Network (TARN) to identify serious (MAIS3+) injury collisions and the drivers involved for the county of Cambridgeshire (UK). These drivers were then assessed to be culpable, contributory or non-culpable for the serious injury collision. Additionally, geodemographic profiles were identified for the drivers using ACORN (A (UK) Classification of Residential Neighbourhoods) to establish if culpable drivers differed from non-culpable drivers. ACORN uses postcodes to differentiate areas by wealth (6 categories), available money (18 groups) and household description (62 types).

Results A total of 399 Cambridgeshire drivers were profiled, with 276 drivers considered culpable or contributing to the collision and 123 non-culpable. The ACORN categories and groups for the proportions of culpable and non-culpable drivers were similar. However, within the household types differences existed with culpable drivers having higher proportions of semi-skilled workers living in traditional neighbourhoods. In contrast non-culpable drivers had higher proportions of larger families living in rural areas.

Conclusion The findings suggest there are differences in specific household types. Using additional marketing tools, targeted road safety education campaigns could be aimed at culpable drivers living in these households.

MV crash characteristics and medical charges: front- and rear-seated restrained and unrestrained adults

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Background There are reports that historically higher mortality observed for front- compared to rear-seated adult motor vehicle (MV) occupants has narrowed. Vast improvements have been made in strengthening laws and restraint use in front-, but not rear-seated MV occupants suggesting there may be value in expanding the science on rear-seat safety.

Methods A linked 2016–2017 hospital and MV crash data set, the Crash Outcomes Data Evaluation System (CODES), was used to compare characteristics of front-seated (n=130,761) and rear-seated (n=6,641) adults aged 18 years and older involved in a MV crash in New York State (NYS). A primary enforced seatbelt law was in effect for front-seated, but not rear-seated occupants. Chi Square and linear regression use SAS 9.4.

Results Compared to front-seated occupants, those rear-seated were more likely to be unrestrained (21.2% vs. 4.3%, P<0.0001) and to have more moderate-to-severe injury/death (11.9% vs. 11.3%, p<0.0001). Compared to restrained rear-seated occupants, unrestrained rear-seated occupants had higher moderate-to-severe injury/death (21.5% vs. 7.5%, P<0.0001) and 4-fold higher hospitalization. Ninety percent (9 of 10) of rear-seated deaths were unrestrained. More than 95% of ejections were unrestrained and had 7-fold higher medical charges. Hospital stays were longer, hospital charges higher and societal financial costs higher as the unrestrained were more frequently uninsured/self-insured/government-insured.

Conclusions These findings document increased medical charges and support the need to educate consumers and policymakers on the risks associated with adults riding unrestrained in the rear-seat.

Learning outcomes Describe crash outcomes and medical charges in front- and rear-seated restrained and unrestrained adult passengers.
passengers in a light truck (compared to sedan) had higher odds of rear seatbelt use in Bandung, while a belted front passenger was associated with rear seatbelt use in Bangkok.

Conclusions Rear seatbelt use was low in Bangkok and even lower in Bandung. Gender, age, and the behavior of other occupants were key predictors of rear seatbelt use.

Learning Outcomes Findings highlight the need for rear seatbelt laws in Bandung and improved enforcement of existing rear seatbelt laws in Bangkok.

ROAD SAFETY PEER EDUCATION IN BELGRADE – AN EXAMPLE OF GOOD LOCAL PRACTICE
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Background Road traffic injuries are the leading cause of death and disability at the age of 15–19. Accordingly, the Institute of Public Health of Belgrade introduced peer education on road safety in Belgrade’s high schools. Since November 2016, 13 educations with 665 participants have been held. The aim of our research was to evaluate the impact of peer education on road safety knowledge of high school students.

Methods A field survey was conducted in the period January-December 2018. The 218 peer education participants completed pre and post-test of knowledge. SPSS -20 was used for statistical analysis. Hi-square test was used to compare the pre and post-tests results.

Results The advancement in knowledge was noticeable in our aspects of road traffic behavior, especially the knowledge of the correct emergency services numbers. After the education, the percentage of incorrect answers to this question was almost twice lower - only 7%, (p <0.001, χ2 = 77.654).

Also, the percentage of those not knowing the proper treatment of injured decreased significantly (p <0.001, χ2 = 33.603).

Conclusion Study results have shown the improvement of knowledge among high school students and confirmed the fact that peer education is an effective way of transferring knowledge among high school students and acquiring knowledge and skills in the field of road safety since the message is transferred through the age-adjusted language, which makes it more accessible to the target population.

Learning Outcomes Our study indicates the need to increase the coverage of older adolescents with this type of education.

EVALUATING THE IMPACT OF A ROAD SAFETY EDUCATION PROJECT IN MADAGASCAR SCHOOLS
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Context Road crashes are the leading cause of death for children and young adults aged 5–29 worldwide. Education is an important part of a safe systems approach to improve road safety. However, evaluating the effectiveness of road safety education projects is challenging. This presentation shares the experience of a quasi-experimental approach to assess the impact of an NGO project implemented in six primary schools in Antananarivo, Madagascar, between 2017–2018.

Analysis The project evaluation was conducted in August 2019. Photos showing nine Malagasy road crossing scenarios were presented to students in random order. Students should consider that they were in the perspective of the person who took the photo and wanted to cross the road. They must therefore indicate the areas of the photo where they would look first, at second and third.

Outcomes Data was analyzed for two samples: 250 students from project participant schools and 300 students from other schools in the same city. The number of students able to apply the correct rules for different road crossing scenarios (look first left, second right and left again before crossing) was on average 20% higher in project participant schools.

Learning Outcomes The results of this impact assessment, combined with a separate teacher evaluation, will contribute to a revision of the techniques used by the NGO to build teacher capacity and to teach students to correctly apply the rules when facing a real situation. The methodology is a cost-effective tool to evaluate the impact of road safety education in schools.