

Traffic Safety

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137 ENHANCING ROAD POLICING IN LOW AND MIDDLE INCOME COUNTRIES THROUGH THE IDENTIFICATION OF GOOD PRACTICE PRINCIPLES

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Background The implementation and enforcement of strong, evidence-based road safety laws and regulations has been shown to be highly effective in reducing road traffic deaths and injuries. In many low and middle income countries, however, the police do not have the necessary expertise or resources to implement good practice road policing in a sufficiently intense and sustained manner. Unfortunately, this can undermine the desired general deterrent effect of the enforcement and fail to communicate its purpose to the general community. The aim of this study was to identify the theoretical principles underpinning good practice road policing, in order to inform the development of relevant capacity-building initiatives in low and middle income countries.

Methods A review of the traffic law enforcement literature was undertaken to identify: i) the theoretical perspectives that have been used to guide the development and implementation of effective road policing programs; and ii) the specific principles arising from these perspectives that can be used to guide enforcement efforts in low and middle income countries.

Results The literature review identified a number of theoretical perspectives from criminology and traffic psychology that have been used to guide the development and delivery of effective road policing programs. Most prominent among these is deterrence theory, which has been extensively used to inform programs targeting illegal behaviours like drink driving and speeding. This perspective highlights the need for road policing operations to be as unpredictable, unavoidable and ubiquitous as possible to optimise general deterrence. More recently, applying the principles of procedural justice have been found to positively influence perceptions toward road policing among both the general community and operational police.

Conclusions In order to enhance road policing in low and middle income countries, consideration should be given to incorporating the theoretical perspectives and principles underpinning effective programs into relevant capacity-building programs.

138 TRANSPORT POLICY AND ROAD ACCIDENTS IN PUEBLA, MEXICO

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Background Mexico has by far the highest accident rate of OECD countries with significant differences from a state to another. This paper proposes a case study of Puebla, Mexico where accident rates are close to the national average, with a discussion of the main causes of accidents, namely the lack of control and an artisanal public transportation of the type *hombre-cami  n* (a man and his bus). However, recent policies such as the

implementation of BRT lines and photo-fines on main roads should have an important impact on reduction of accidents.

Methods The method chosen combines quantitative analysis sometimes difficult to achieve from data from federal and state sources as well as qualitative data from interviews of the main actors regarding transport policy and road accidents in Puebla. The results are compared to other states of Mexico as well as more developed countries where road accidents are much lower.

Results Road accidents are very high in Mexico compared to other countries of the OECD (around 22 for 1,000 inhabitants vs. 6 in France, for example). The main causes of such disastrous results is a *laissez-faire* attitude, absence of a road test to obtain the driving licence, lack of control of speed limits, non-rigorous control of alcohol intake, artisanal competitive public transportation with many accidents, and corruption. However, recent changes in policies, at least in Puebla, with the implementation of a few BRT lines as well as cameras to control speed limits applied strictly with strong fines, has reduced considerably average speeds, the main cause of road accidents.

Conclusions Mexico, an emerging economy, has still a long way to go to reach low levels of accidents encountered in more developed countries. However, recent policies adopted in Puebla indicate that it is possible to rapidly implement measures to reduce accidents with political will.

139 IMPROVING ROAD TRAFFIC SAFETY THROUGH LEGISLATIONS: AN EMPIRICAL EVALUATION OF THE 2004 CHINESE ROAD TRAFFIC LAW

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Background Road traffic injuries (RTI) impose a heavy burden in many developing countries. Among other interventions, legislations have been proposed in some countries, such as China where the first road traffic law was passed in 2004. We evaluated the impact of this law on reducing RTI.

Methods Multiple linear regression models at both country and province level, as well as a longitudinal regression model at province level were applied with the data collected during 1996–2012. Using the Chow tests, we identified structure changes in the trend of traffic fatalities in China as a whole and in most provinces around 2004. As sensitivity analyses, the estimations were replicated in two other hypothetical scenarios, assuming a flat trajectory (per data from Disease Surveillance Points system) and a increasing trajectory (per data from Ministry of Health's vital registration system) since 2004.

Results We estimated that during 2005–2012, about 498.550 (95% uncertainty interval 408.943–588.157) deaths, 4.060.591 (95% uncertainty interval 2.960.588–5.160.594) injuries and 5.658.494 (95% uncertainty interval 3.783.098–7.533.890) crashes have been averted due to the implementation of the 2004 traffic law. The health benefits of the legislation remained tremendous even after adjusted for the possible underreporting problem in the traffic fatality data.

Conclusions Our study suggests that other developing countries can learn from the success of the 2004 Chinese traffic safety law and improve road traffic safety by introducing effective legislations.