

## BRIEF REPORT

## International survey of seat belt use exemptions

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**Background:** Substantial evidence of seatbelt efficacy has been shown by several studies, and it is widely recommended that motor vehicle occupants use properly fitted seat belts. However, some (but a heretofore unknown number of) countries with national seat belt laws permit various exemptions which may lower use rates. The aim of this study was to survey the variety of exemptions to national seat belt laws.

**Methods:** This investigation relied on identifying respondents from national traffic safety agencies, other governmental and non-governmental organizations, Internet searches, personal contacts, and other sources. Questionnaires were deployed through a web based survey supplemented by email and postal versions.

**Results:** Responses were received from 30 countries of which 28 (93.7%) had a national seat belt law. About two thirds (63.7%) of the 28 national laws applied to both front and back seat passengers. The leading exemption types included vehicles made before a certain year ( $n=13$ ), antique vehicles ( $n=12$ ), military vehicles ( $n=11$ ), buses ( $n=9$ ), and emergency vehicles ( $n=8$ ). Most responding countries reported one or more specific categories of individuals as exempt including those with medical exemptions ( $n=20$ ), taxi drivers ( $n=11$ ), police ( $n=9$ ), emergency medical personnel ( $n=8$ ), physically disabled people ( $n=6$ ), and pregnant women ( $n=6$ ). Out of 26 responses to the question regarding current level of enforcement, 42.3% felt enforcement was "very good or good" and 57.7% characterized it as "fair or poor".

**Conclusions:** This study represents one of the largest international traffic law surveys reported. Most national seatbelt laws offer perilous exemptions to a broad array of vehicle types and road user groups. These findings, coupled with concern over the level of enforcement in the majority of countries surveyed, suggest that international road safety efforts have a long way to go to improve coverage and enforcement of national seat belt laws.

Researchers from the Harvard School of Public Health have estimated that road traffic injuries annually account for over 222 000 deaths in developed regions of the world and over 777 000 in developing regions.<sup>1</sup> This report also predicted that as a leading global cause of death and disability, road traffic injuries would rise from ninth to third position by 2020. This increased recognition of the global importance of road traffic injury has prompted new calls for ways to reduce this important health burden. Among leading proven prevention strategies are efforts to improve the use of safety (seat) belts. Safety belts have been called the "most effective means of reducing fatal and nonfatal injuries in motor vehicle crashes".<sup>2</sup> Yet despite this knowledge, legislative approaches mandating seat belt use often exclude various types of vehicles and users.

The National Highway Traffic Safety Administration determined in 1984 that motor vehicle occupants who wore a three-point restraint when compared to those who did not wear a seat belt were about 45% less likely to die in a crash ( $RR = 0.55$ ).<sup>3</sup> In a 1986 study, Evans determined that a front seat occupant wearing a seat belt had a relative risk of death of 0.58 compared to a front seat occupant who was not.<sup>4</sup> In a more recent study a relative risk of death of 0.27 was shown for front seat occupants wearing a manual shoulder plus lap belt when compared to an unbelted front seat occupant.<sup>5</sup> Cummings *et al* determined that the relative risk of death was 0.39 in front seat passengers who were using a seat belt compared to those who were not for the years 1986–98.<sup>6</sup>

Based on the demonstrated benefits of seat belt use, it follows that seat belt law exemptions make it lawful for some groups to put themselves at a much greater risk of death and injury if they are involved in a motor vehicle crash. While exemptions may be politically expedient when seat belt laws are initially adopted by regulatory bodies, their continued use and overuse are counterproductive to highway safety and injurious to many of the affected occupants. The different types of exemptions and their use around the world are explored in this article in order to lead to a better understanding of just who those at-risk occupants are.

## OBJECTIVES

The primary aim of this project was to survey the number and characteristics of occupant exemptions to national seat belt laws in different countries. The secondary aim of this study was ascertainment of the seat belt exemption policies in different countries for other vehicle and road user categories. The results are presented by country so that advocates in each country can compare and contrast their exemptions with others and focus on removing those exemptions that are adversely impacting on large segments of road users.

## METHODS

This investigation relied on several means and multiple sources of identifying and contacting respondents from national traffic safety, police, and health agencies. Sources included the Worldwide Transportation Directory,<sup>7</sup> the International Road Safety Organization (a worldwide, non-governmental non-profit organization), other governmental and non-governmental organizations, search engine findings from the Internet, personal contacts, Internet list servers, and selected conference registration lists. Approximately 70 countries and many more individuals were invited to participate through emails or letters.

The survey instrument was designed, circulated among traffic safety experts for review and comment, revised, and pre-tested by volunteers. Survey recipients were informed that the purpose of this survey was to characterize adult exemptions to national automobile seat belt laws, with a focus on pregnant women. Exemptions during pregnancy were an initial focus of the survey, but information on all exemptions was solicited, collected, and presented in this paper.

In addition to contact information, the survey instrument contained sections soliciting information on the status and enforcement of each national seat belt law, the type of law, roadway, vehicle, and occupant specific exemptions, and details about pregnancy related exemptions. The questionnaire was deployed and collected through a web based survey (supplemented by email and mailed versions for a few individuals). A copy of the survey (in PDF format) is available online at <http://www.circl.pitt.edu/home/docs/surveys/preg-survey.pdf>. On the web, the survey took up at most seven screens (depending on the branching logic) and about 15 minutes to complete. The study protocol was submitted for institutional review and ruled exempt from institutional review board oversight. In a few instances, multiple responses from the same country were received. In these cases, the lead author made a subjective decision which response to use for that country based on a reading of the completeness of the survey responses, its general internal consistency, and the source and position of the respondent.

## RESULTS

Responses were received from 30 different countries, 28 (93.7%) of whom had a national seat belt law. Representatives from transport ministries comprised the largest group of respondents (56.7%). The results below pertain to the 28 countries with national seat belt laws.

About two thirds (63.7%) of the national laws applied to both front and back seat passengers (table 1). Most countries with national seat belt policies had a primary enforcement law (92.9%). Out of 26 responses to the question regarding current level of enforcement, 42.3% felt enforcement was "very good or good" and 57.7% characterized it as "fair or poor".

**Table 1** Seat belt law exemptions based on position in vehicle, by country

Country	Type of law exemptions		
	Front seat drivers and passengers	Both front and back seat passengers	Other
Austria		✓	
Belgium		✓	
Switzerland		✓	
China	✓		
Cyprus		✓	
Czech Republic	✓		
Germany		✓	
Denmark		✓	
Spain		✓	
Estonia		✓	
Finland		✓	
France			✓
Great Britain		✓	
Greece		✓	
Iran	✓		
Italy		✓	
Japan	✓		
Luxembourg		✓	
Mexico		✓	
Netherlands		✓	
Norway		✓	
Poland		✓	
Portugal		✓	
Singapore		✓	
Slovenia			✓
Sweden			✓
Thailand	✓		
Yugoslavia	✓		
Total	6	19	3

Several types of vehicle exemptions were observed. The leading vehicle exemption types (see <http://www.injuryprevention.com/supplemental> for table 2) included vehicles made before a certain year (n = 14), antique vehicles (n = 12), military vehicles (n = 11), tractors and buses (n = 10), and emergency vehicles (n = 8). The leading roadway exemption types were for private roads (n = 5) and race courses (n = 4).

Most countries exempted from seat belt use one or more specific categories of individuals (table 3). The leading occupant exemption types were people with medical exemptions (n = 21), taxi drivers (n = 14), police and emergency medical personnel (n = 8), physically disabled people (n = 6), and pregnant women (n = 6). In addition, four respondents reported that pregnancy was an allowable medical exemption in their country. In the 10 countries that allowed some form of seat belt use exemptions for pregnant women (comprising one third of the responding countries), the main reasons stated were—paradoxically—medical concerns for the mother or baby.

## DISCUSSION

This study represents one of the largest international traffic law surveys reported and one of the very few to compare multiple types of seat belt law exemptions across countries. Many national seat belt laws offer perilous exemptions to several vehicle types and road user groups. These findings, coupled with the reported "fair or poor" level of enforcement of seat belt laws in the majority of countries surveyed, suggest that international road safety efforts have a long way to go to improve the coverage and enforcement of one of the most basic ways to reduce the increasing global burden from road traffic injuries.

However, merely implementing a national law with minimal exemptions does not guarantee high rates of seat belt use. It is only part of the solution, especially from an international perspective, where important differences between countries must be understood to put interventions into local cultural and socioeconomic contexts. Forjuoh<sup>8</sup> gave the example in Ghana, where a study revealed that the 16 445 officers in the National Police Service shared only 145 vehicles; strongly suggesting that both primary and secondary enforcement of seat belt laws could not be approached in the same way in Ghana as in higher income countries with a much more mobile police presence. Further, he reported anecdotal evidence that for many low income countries, more than half of the vehicle fleet may not even have functional seat belts. This suggests that the problems of transport related injuries to all motor vehicle occupants and road users needs to be addressed from the local country's perspective, including the technological as well as the contemporary social, political, cultural, geographic, and economic situations.

This perspective is also highlighted by another example with the understanding that vehicle type and pedestrian mix is often quite different between high and lower income countries. Indeed the "vulnerable road users" (meaning those most likely to suffer injury) in most lower income countries are not the occupants of automobiles, but rather bus riders, pedestrians, bicyclists, and users of carts and motorized two-wheelers.<sup>9</sup> Therefore, better coverage under seat belt regulations for people driving or riding in the former will have no impact on the populations that are non-automobile road users.

The United Nations has 191 member countries (as of 2004). At first glance the response rate to the survey appears to be very low, but the target was not all countries, rather those with national seat belt laws. A 1994 article reported that compulsory seat belt usage legislation had been

**Table 3** Leading occupant exemptions, by country

Leading occupant exemptions																		
Country	Person with medical exemptions		Physically disabled Persons	Pregnant/Obese women	Emergency medical personnel	Police/law enforcement	Automobile salesperson	Driving instructors	Delivery persons	Person using sleeper berths	Postal carriers	Land survey crews	Utility workers	Taxi drivers	Taxi passengers	Military persons	If all restraints are in use	Others
	None	✓																
Austria	✓	✓												✓		✓		
Belgium	✓	✓						✓						✓			✓*	
Switzerland	✓	✓												✓				
China	✓																	
Cyprus	✓																	
Czech Rep	✓	✓				✓		✓						✓		✓		
Germany		✓																
Denmark					✓									✓			✓	
Spain	✓		✓		✓			✓						✓				
Estonia	✓							✓										
Finland	✓							✓										
France	✓	✓			✓	✓		✓		✓				✓		✓	✓	
Great Britain	✓					✓								✓			✓	
Greece	✓					✓								✓				
Iran	✓	✓	✓		✓									✓		✓		
Italy	✓		✓		✓									✓				
Japan	✓		✓		✓													
Luxembourg	✓	✓				✓				✓				✓				
Mexico		✓																
Netherlands	✓													✓			✓	
Norway														✓			✓	
Poland	✓				✓	✓		✓						✓		✓		
Portugal	✓				✓	✓		✓						✓				
Singapore	✓																	
Slovenia	✓																	
Sweden	✓					✓		✓								✓		
Thailand																	✓†	
Yugoslavia	✓																	
Total	2	21	6	6	1	6	8	8	5	2	2	-	-	14	1	5	6	2

\*Exemption is "when driving backwards".

†Exemption is for "the children".

introduced in only about 40 countries.<sup>10</sup> While the actual number of eligible countries at the time of the survey is unknown, it appears that the survey obtained responses from a majority of eligible countries (28) assuming the 1994 figure did not change much.

Another limitation of this study is that countries with seat belt laws established on a state, regional, or provincial level were excluded. The resources did not exist to contact every local jurisdiction within countries. Furthermore, outside of the large Western countries, it did not appear feasible to obtain reliable contact lists and email addresses for the appropriate personnel in local jurisdictions. It is noted that the countries with local rather than national seat belt laws tend to be large Western countries such as Canada, the United States, and Australia.

Surveys such as this are hampered by the apparent lack of or inaccessibility to accurate, up to date, and complete lists of mail and email information for national police and traffic agency information/policy offices in each country. Barriers include the fact that many nations do not always have such institutions and offices, and where they do exist they may be difficult to find because of language barriers, or individuals with knowledge and responsibility in these areas may lack Internet connectivity for efficient email communication and thus be difficult to reach. It is recommended that the United Nations, the World Bank, or another appropriate world body create and maintain a dynamic directory of key national police and traffic agency information/policy offices contacts by country.

## CONCLUSIONS

Through law changes, education, increased general awareness of the importance of seat belt use, and improved enforcement, it is hoped that people of all nationalities will learn about and implement seat belt laws and use. It has been known for years that seat belts are one of the most basic ways to reduce the increasing global burden from road traffic injuries. Nevertheless, in far too many countries with national seat belt laws, not enough is being done to put this knowledge into effective practice.

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Table 2 is available on our website.

## Key points

- The leading exemption types are vehicles made before a certain year, antique vehicles, military vehicles, buses, and emergency vehicles.
- At least one third of the responding countries with national laws had specific seat belt exemptions for pregnant women or allowed pregnancy exemptions under general medical conditions.
- Almost 60% of survey responders characterized their seat belt enforcement as "fair or poor".

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