

Evaluation of legislation on seat belt use on rear seats

Social persuasion as a new measure to promote seat belt use

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Summary

In the Netherlands, the use of seat belts for front seat passengers was made compulsory in 1975, and on April 1st 1992 the use of rear seat belts, if fitted, became a legal requirement. Since 1968, an annual survey of the presence and use of seat belts on front seats - extended in 1989 to include rear seats - has been conducted in the Netherlands. An evaluation of compliance with the law stipulating the use of rear seat belts was conducted by comparing the observation and surveys carried out in October 1992 and 1991. A significant rise in the use of rear seat belts, when fitted, was found: from 15 to 31% in built-up areas and from 12 to 37% on rural roads. For front seat belts, a small increase was found on town roads, from 62% to 66%, while on rural roads the percentage was around 80% in both years. It was calculated that the use of front and rear seat belts has a great growth potential. It is recommended that information campaigns should promote 'social persuasion', with emphasis on the increased risk of injury sustained by a non-belted occupant and the risk of having a proportion of the damage compensation withheld by the insurance company. In addition, the non-user can inflict injury on other belted occupants, and can therefore be sued for damages either by the victims or by their insurance company. Intensive police enforcement combined with public information sustained over several weeks, followed by a period of enforcement at a lower level of intensity can lead to an increased use of seat belts through habituation.

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1. Introduction

On January 1, 1971, new/imported passenger cars were required to be fitted with seat belts on the front seats and as of June 1, 1975, the use of these belts became mandatory. On January 1, 1990, the fitting of rear seat belts to new/imported passenger cars became compulsory and as of April 1, 1992, the use of rear seat belts when present became mandatory. The introduction of the new law was accompanied by an information campaign, launched shortly before April 1.

AGE/LENGTH	RESTRAINT SYSTEM FRONT	RESTRAINT SYSTEM REAR
0-3 yrs	Use child seat mandatory	Child seat present: use mandatory Child seat absent: use seat belt not mandatory
3-12 yrs / < 1.5 m	Use child seat mandatory	Child seat present: use mandatory Child seat absent and seat belt present: use seat belt mandatory
> 12 years	Use seat belt mandatory	Seat belt present: use mandatory

Table 1. *Law use of restraint systems as of April 1 1992*

This project has three objectives:

1. To determine the annual use of restraint systems in the Netherlands.
2. To evaluate the law on mandatory use of rear seat belts.
3. To offer recommendations based on the results and available knowledge.

1.1. Jurisprudence

Failure to comply with the law (i.e. not 'belting up') is punishable by a fine. When an accident results in injuries, the following judicial consequences may be the result:

- non-restitution by the insurance company of part of the total damage costs resulting from injuries sustained, jurisprudence has imposed a penalty of 15-50%.
- a claim lodged by the (insurance company representing the) belted occupants who were injured by the non-belted occupant.

1.2. Observations

Since 1968, annual observations have been conducted to investigate the presence and use of safety belts on the front seats of passenger cars, and after 1989 these were extended to include child restraint systems and rear seat belts. In 1991 and 1992, extensive observations and surveys on the use of restraint systems amongst drivers and front and rear seat passengers were conducted to evaluate the compulsory use of rear seat belts. This article presents recent data from the 1992 survey.

2. Method

2.1. Observation location and period

Observations were conducted in October 1992 on four road types during two weekdays and on two weekend days from dawn to dusk in the twelve Dutch provinces. The data on presence and use of restraint systems were collected through observation of cars stopping at traffic lights at rural and urban intersections, and via questionnaires handed out while the cars were stationary, which the occupants were expected to complete at home and return by post.

2.2. Observation method

Cars without rear seat passengers: use of seat belts by driver and front passenger is visually determined.

Car with rear seat passenger(s): use of seat belts or child seats is visually determined, driver is questioned regarding the presence and type of seat belts in the back; the age of occupants is asked. A questionnaire is handed out to the driver. When seat belts are fitted on the rear seat and the passenger(s) are older than 12 years, they are also handed a questionnaire.

The main question concerns the presence and use of front and rear seat belts in rural and urban areas, the importance of seat belt use, motivation for (non-)use, the importance of seat belts for children and information campaigns regarding seat belts.

2.3. Data analysis

Data obtained during the period 1989-1992 were analysed. With respect to the surveys, only data from the latter two years were available. The test sample is such that a difference of several percentage points is generally considered statistically significant.

3. Results

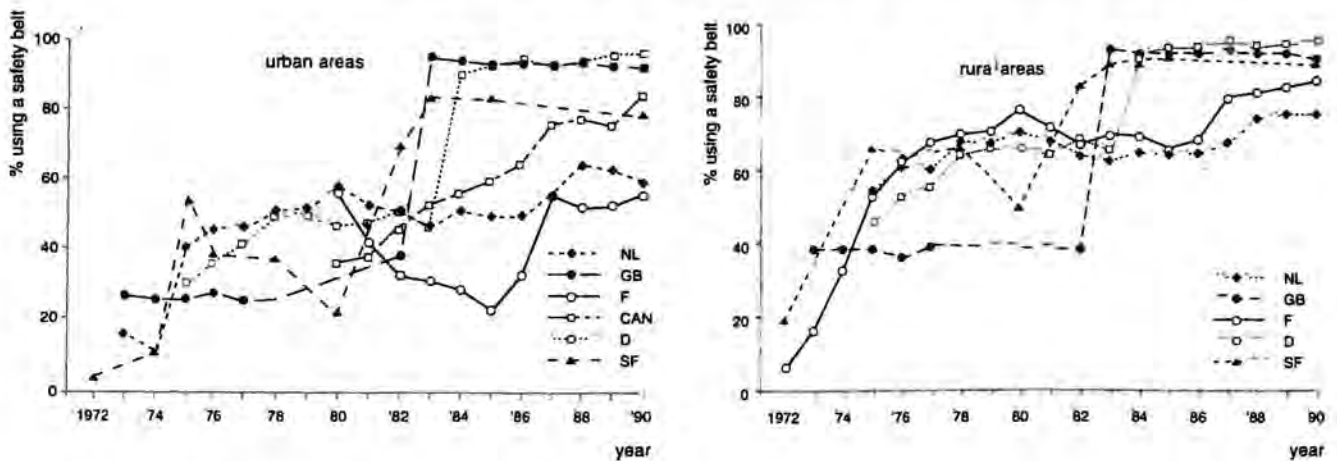
3.1. Observations

Drivers	20,851
Front seat passengers	8,124
Rear seat passengers total	2,285
Same with seat belts fitted	1,312

Table 2. Number of observations

3.1.1. Front seat

The use of seat belts on front seats in the Netherlands is rather low when compared to Germany, the United Kingdom or Finland, for example.



Source: BASI Germany; TRRL Great-Britain; SWOV Netherlands; INRETS France; Liikenneturva Finland; Transport Canada

Figure 1. Safety belt use in rural areas in Germany (D), Great-Britain (GB), The Netherlands (NL), Finland (SF) and France (F) 1972-1990

Figure 2. Safety belt use in urban areas in Germany (D), Great-Britain (GB), The Netherlands (NL), Finland (SF), France (F) and Canada (CAN) 1972-1990

The use of seat belts by drivers on urban and rural roads in the period 1972-1992 is shown in Figure 3.

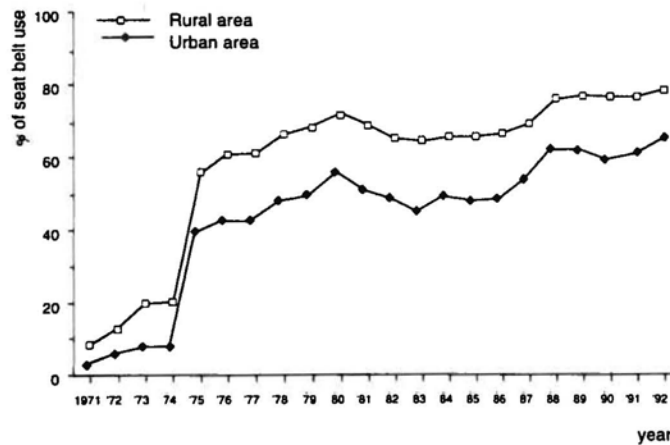


Figure 3. *Percentage of seat belt use by drivers of passenger cars in urban and rural areas in 1971-1992 in the Netherlands*

In 1992, the percentage of seat belt use in rural areas was around 80% and on urban roads 75%. This use increased somewhat over the past four years on urban roads, while in rural areas the percentage remained stable. Seat belt use tends to decrease as the general speed limit of the road type becomes lower. The use of the front passenger seat belt on urban roads was several percentage points higher than the equivalent driver figures (72 and 66%); these percentages were almost the same (80%) for rural roads. No differences between weekdays and weekend days were found. Female drivers wear their seat belt more often than male drivers, i.e. 77% and 70% respectively in 1992. Rather large differences were found between the 12 provinces: the three northern provinces showed the highest percentage of seat belt use (76-83%) while the province of South Holland had the lowest percentage, around 60%.

If the driver is wearing his seat belt, seat belt use by the front passenger is 90%; if the driver is not wearing his seat belt, this percentage drops to 35%.

3.2. Rear seats

The presence of restraint systems (seat belts and child seats) on rear seats has almost doubled in the past four years: from 28% to 55%. This applied equally to both urban and rural areas. The largest proportion of restraints is represented by seat belts. The use of restraint systems per passenger increased from 13% in 1989 to 26% in 1992. The percentage of use by passengers if a restraint system was available rose from 27% to 45%. This percentage is very high for child seats and remains stable: 90%. No difference was noted between urban and rural areas. The use of seat belts increased from 12% to 34% in the past four years. In 1991, this figure was 14%.

A significant difference was noted in the use of seat belts by rear seat passengers, depending on whether or not the driver wore a belt, i.e. 41% and 9% respectively.

3.3. Questionnaires

1,446 questionnaires were distributed to drivers, 692 of which were returned, representing a response rate of 48%. 835 questionnaires were handed to rear seat passengers, of whom 282 responded, i.e. 34%. The percentage of female respondents was higher than their representation as observed in the field.

3.4. Drivers

The self-reported seat belt use offered a more favourable impression than the observations in the field warranted. This may be attributed to the higher percentage of females who responded with respect to the number observed. In addition, it is recognised that respondents tend to claim better behaviour than they carry out in practice.

The differences do tend to be consistent however, e.g. seat belt use on rural roads is higher than on urban roads. An increase in positive opinions and motives regarding seat belt use on rear seats can be found in the past two years. The motives for using the seat belt in 1992 include: 'safety' (74%), followed by 'stipulated by law' (55%), 'habituation' (50%), 'fear of being fined' (18%) and 'persuaded by someone else' (3%). The main motives for not using the seat belt are 'forgotten' (54%) and 'discomfort' (18%). 7% of respondents gave a wrong answer regarding the mandatory use of seat belts on rear seats. The importance of the use of restraint systems on rear seats for children and adults is recognised by most respondents. Most drivers recognise the exemplary function of seat belt use for other occupants. 70% of respondents received information regarding the importance of seat belt use, which was launched prior to the introduction of the new law, in one way or another. This type of information is generally communicated via television spots. The probability of being fined was estimated at almost nil by 57% of drivers. 97% of drivers had never been fined by the police for not wearing their belt. A large proportion of drivers (70%) favours an automatic warning system to remind occupants to 'belt up'.

3.5. Rear seat passenger

The self-reported use again offered a more favourable (though consistent) impression than that warranted by the observations. An increase in positive opinions and motives with respect to seat belt use on rear seats was noted in the past two years. Motivation for the use of seat belts in 1992 included: 'safety' (66%), 'habituation' (30%), 'fear of being fined' (20%) and 'persuaded by someone else' (16%). Non-use of seat belts was motivated by 'forgotten' (50%), followed by 'discomfort' (30%). 6% offered a wrong answer when asked whether the use of rear seat belts was compulsory. The importance of seat belt use for (personal) safety is recognised by most respondents. The majority of respondents had received information on the importance of seat belt use, launched prior to the introduction of the new law. Most of this information was received via TV spots.

The mandatory use of rear seat belts resulted in a large rise in the self-reported use of seatbelts between 1991 and 1992: when travelling through rural areas, the reported use increased from 27% to 59%, while in urban areas the figure rose from 29% to 51%.

4. Discussion

4.1. Conclusions

The new law on the use of rear seat belts (when fitted) exerted a strong positive influence on the use of these belts, even though the user percentage remained very small: 31% on urban roads and 37% on rural roads.

The percentage of seat belt use with respect to drivers in the Netherlands is 66% on urban roads and 79% on rural roads. The percentage for front passengers, provided the driver is wearing his seat belt, is 90%. The percentage of seat belt use by drivers in several European countries is around 95% (Hagenzieker, 1991).

It is therefore not a utopia for the Netherlands - as contended by some sceptics quoting "Dutch obstinacy" - to aim for a compliance percentage of 95 and over for both front and rear seat occupants.

We may conclude that there is a large growth potential for seat belt use in the Netherlands, applicable to both front and rear seats.

4.2. Recommendations

'Social influence', where an occupant not wearing a seat belt is persuaded by other belted occupants to fasten his seat belt, should be the theme of subsequent information campaigns. This can be illustrated by the increased injury risk to which the non-belted occupant is exposed. Another argument which the campaign can put forward is that insurance companies may withhold part of the damage compensation. In addition, the non-belted occupant may inflict injuries on other belted occupants, and may therefore be sued for damages either directly or through the victims' insurance company.

Intensive police enforcement in combination with information campaigns extended over a period of several weeks, followed by a period of less frequent enforcement, may result in a lasting rise in seat belt use through habituation.

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