



BRSI

Summary

Are children transported safely? National behavioural survey on the use of child restraint systems 2014

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Summary

Are children transported safely? National behavioural survey on the use of child restraint systems 2014

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Les enfants sont-ils transportés en toute sécurité ? Mesure nationale du comportement : utilisation des dispositifs de retenue pour enfants 2014

Objectives and methodology

This behavioural measurement on the use of child restraint systems in cars (CRS) is part of the broad program within the Belgian Road Safety Institute (BRSI) to observe the behaviour of Belgian road users on a regular basis with respect to several road safety issues, such as speed, alcohol, seatbelts, use of mobile phones, etc..

In September 2014, the BRSI organised a national behavioural measurement on CRS use. This survey is a follow-up on the first measurement on CRS use in 2011. It is a quantitative and qualitative assessment of how children are secured, as observed under real-life conditions in Belgium. The key aim was to carry out an in-depth investigation, under real-life conditions, of the way children are secured in cars, define the frequency of incorrect and inappropriate use of CRS and assess the main reasons for this misuse.

The method used is similar to the one used in 2011. Feedback from the first assessment has enabled us to improve certain method-related aspects and thus improve the quality of data collected. Design of the questionnaire, training to observers and encoding of the data was done in partnership with Philippe Lesire, a French expert on child car safety, from the *Laboratoire d'Accidentologie et de Biomécanique* (LAB) in Nanterre, France. The assessment was based on the voluntary participation of drivers transporting children. As much data as possible was collected in the field, to gain a better understanding of the conduct of road users in terms of use of CRS: the rate of correct and incorrect use, the suitability of CRS for children's features, the socio-demographic profiles of parents/drivers, etc.. It was collected by a team of two observers. By means of a standardised questionnaire, the first team member collected socio-demographic data from drivers, predictive variables and self-reported dependent variables. All other data was based on the observations of the second observer. In parallel with the collection of these data, the latter had to photograph the children surveyed to illustrate the findings, with permission of the parents or the driver. In-depth analysis of the photographs by an expert enabled us to improve the quality of the data analysed. The average time taken to collect the data was estimated at 7 minutes. Once complete, the investigators stopped another vehicle to be checked.

The data was collected according to a clustered sampling design with several stages. 114 observation sites were selected at random across Belgium, stratified by region (Bruxelles-Capitale, Flanders and Wallonia). For each of the regions, 20 towns were randomly selected weighted by population size. Types of situation and observation times were allocated at random for each town, although considering the constraints of site frequenting (the day of the week and times) and the observers' travel constraints. The sites chosen were obtained by encircling, at random, in and/or around the town selected. From this, the following observation scheme was obtained: 7 primary schools (weekday afternoon), 7 crèches (weekday afternoon), 8 supermarkets (Wednesday morning and Saturday), 5 hospitals with paediatric units (weekday morning), 5 fast food restaurants (midday on Wednesday and Saturday), 3 sports centres (Wednesday afternoon) and 3 leisure complexes (Sunday afternoon). Each site was only visited once. The duration of the sessions was variable (1 1/2 hours for schools and up to 5 hours for leisure complexes and supermarkets).

The statistical analysis was performed on a sample that was weighted on the basis of the distribution of children by region, their age, their height (under 135 cm) and the frequency of the different types of journey.

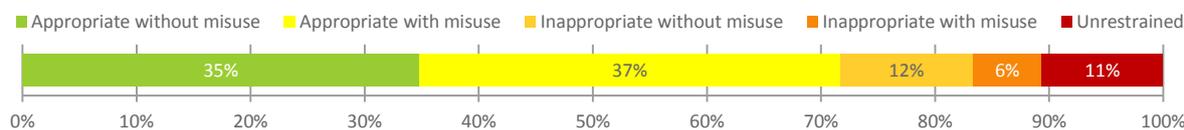
Key results

2,652 children were observed. We recorded a relatively low rate of refusals in 2014, i.e., 26%. The final sample included 1,953 children (under 135 cm and seated in 1,340 vehicles) whose securing conditions were observed in depth, where the driver was interviewed and all data was recorded necessary for applying weighting factors (children's age and height).

It is clear from this survey that the rate of children not correctly secured or fastened at all remain at unacceptable levels in Belgium: in 2014, nearly 1 child in 5 was not fastened in the car at all (result obtained from the initial sample of 2,652 observed children).

This rate is 1 child in 10 in vehicles whose driver agreed to participate in the study. This last result, which is very worrying, has remained unchanged since 2011. 54% of the observed children were incorrectly secured (child fastened but seat absent or inappropriate or even incorrectly installed). Overall, only 1 child in 3 was fastened and secured correctly (Figure 1).

Figure 1: Distribution of children according to quality of use of restraint systems in vehicles for which the driver agreed to participate in the survey (n=1,953, weighted data)



The rate of children that are not secured has not fallen since 2011. This result is extremely worrying and striking, despite the actions which were taken in the meantime to encourage parents to secure their children in the car correctly (awareness campaigns, increase in fines for failure to use a restraint system, increase in police checks, etc.).

The analysis enables us to identify many factors which significantly influence the rate of children that are secured correctly. Factors which have a significant impact on child safety when travelling by car included:

- the type of journey (very frequent journeys and those covering short distances were less safe);
- the child's age, coupled with their resistance and their capacity to unfasten themselves (refusal to be fastened, keeping their arms outside the harness, or ill positioned seatbelt);
- the type of system that is used;
- the use of the ISOFIX fixing system (significantly reducing the misuse of the CRS in comparison with conventional systems using a seatbelt);
- whether the driver is wearing his/her seatbelt (a driver who is not correctly fastened will be more permissive or even lax with respect to the children in the vehicle);
- the person who positions and fastens the child (a child will be less attentive than an adult to fastening themselves correctly);
- the place where the CRS was purchased;
- whether information was sought prior to purchasing the CRS; and
- whether advice was obtained when purchasing the CRS.

Using socio-demographic data on drivers, the results have also enabled us to define an "at-risk" profile, which combines several factors such as being one of the child's parents, being relatively uneducated, having a modest income, living in a flat and not being a native Western or Northern European.

Conclusion and recommendations

These results give us a new insight into the conditions of securing children in Belgium. It is imperative to reduce the rate of CRS misuse as well as the number of children that are not fastened at all in Belgium. It is necessary to convince drivers to fasten children in their vehicle at all times, without exception. Information for drivers and awareness raising must stress the importance of securing children correctly, but also of correctly fitting the restraint systems in which they are seated to maximally reduce the risk of injury when an accident occurs.

Given the quality, the size of the sample and the existence of photographs illustrating misuse observed in real-life conditions, the study is unique in Europe. It provides an essential tool for a more accurate definition of new target populations. Many applications and perspectives could be anticipated in terms of communication and awareness (parents and children), but also in terms of co-operation with CRS manufacturers, to improve their design and the conditions under which they are fitted.

Carrying out a new measurements of this type at regular intervals will provide an instrument for the different stake holders to evaluate the change in road users' conduct (drivers and children) with respect to child restraint systems and their good practical use.



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