First roadside survey of child restraint system use in Belgium

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Introduction

The aim was to observe in real traffic conditions how children are restrained, to measure the rate of use and misuse of CRS, and to evaluate the main reasons for misuse.

This study was run in partnership with the European project CASPER.

www.casper-project.eu
Context

Accidentology and behaviour studies

- Accidentological data: encouraging evolution

| Table 1: Numbers of children involved and injured in an accident as car passengers |
|-------------------------------------------------|-----|-----|-----|
| Number of accident involving at least one child between 0-10 years old as car passenger | 2005 | 2009 | 2010 |
| Children killed within 30 days | 1356 | 1291 | 1204 |
| Children severely injured | 12  | 7   | 4   |
| Children light injured | 89  | 44  | 67  |
| Total children involved | 1,653 | 1,622 | 1,477 |

- Behaviour studies: worrying decline

| Table 2: Distribution of drivers according the children safety in cars |
|-------------------------------------------------|-----|-----|-----|
| Drivers reporting to restrain children safely without exception in cars | 2006 | 2009 | Evolution 2006-2009 |
| Drivers reporting that they never or rarely restrain children in cars | 90% | 81% | -9% |
| Source: the national road safety survey in 2006 and 2009, BRSI | 4% | 7% | +3% |
Context
Legal framework in Belgium

Since 2006

Exceptions:
- taxis and vehicles (9 seats+): only seatbelt and seated in the rear seats
- 3rd CRS in rear seats impossible: only seatbelt for the 3rd child (>3 yrs old)
- non-parents for “short distances”: only seatbelt and seated in the rear seats

Since 2008, all CRS are required to be conforming to ECE R44/03 or R44/04

* Smaller than 135 cm: child seat!
Methodology

- Investigating in detail the conditions of child restraint and to interview the driver

- Based on the voluntary participation of the drivers

- Sampling: random sample of different sites (wide range of activities and times of the week), stratified by 3 regions

- The questionnaire and the training session were designed to make the results comparable to other international misuse studies
Data collection
Fieldwork 3-18/09/2011

16 trained investigators

80 different sites investigated

2,555 children observed

1,461 children in the sample
Results

The drivers’ characteristics

- 86% are the parents and 53% are women. The average age is 38 yrs.
- 83% of the drivers are restrained
- 63% reported having a higher level of education
- 43% live in a large city, 33% in a small town, 24% in rural area

The children’s characteristics

- 52% of children observed were boys. The average age is 4.1 years. Children older than 7 years are under-represented.
- 92% of children observed were seated in the rear seats
Results
CRS’ characteristics

Table 3: Distribution of children per type of restraint system (n=1,461)

<table>
<thead>
<tr>
<th>Type of restraint system</th>
<th>Criteria for appropriate by CRS type</th>
<th>Percent observed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age (years)</td>
<td>Weight (kg)</td>
</tr>
<tr>
<td>Carrycot</td>
<td>0-1</td>
<td>0-10</td>
</tr>
<tr>
<td>Rearward facing CRS</td>
<td>0-1</td>
<td>0-13</td>
</tr>
<tr>
<td>Forward facing CRS</td>
<td>0-4</td>
<td>9-18</td>
</tr>
<tr>
<td>Shield forward facing CRS</td>
<td>0-4</td>
<td>9-18</td>
</tr>
<tr>
<td>Booster with backrest</td>
<td>4-7</td>
<td>15-25</td>
</tr>
<tr>
<td>Booster cushion</td>
<td>6-10</td>
<td>22-36</td>
</tr>
<tr>
<td>Integrated system</td>
<td>6-10</td>
<td>22-36</td>
</tr>
<tr>
<td>seatbelt</td>
<td>10+</td>
<td>36+</td>
</tr>
<tr>
<td>unrestrained</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 84% of CRS were bought new
- 60% of CRS were purchased in a specialized shop and 27% in a supermarket
Results
Definitions

unrestrained = when no restraint system is used or the CRS/child is not attached/restraint

Inappropriate use = when children are not restrained according to their height, age or weight

In Belgium, according to the regulation, the seatbelt is considered as appropriate in few exceptions (no parental links with the driver)

Misuse of a CRS = improper use of it considering the recommendations outlined in the instruction manual. It’s possible to observe several misuses on the same device
Results

Quality of use of restraint systems

![Bar chart showing distribution of children according to the quality of use of restraint systems (n=1,457)]

Figure 1: Distribution of children according to the quality of use of restraint systems (n=1,457)
Results

Quality of use of restraint systems regarding observation sites

Figure 2: Distribution of children according to the quality of use of restraint systems per type of sites (n=1,457)

Source: BRSI

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Results

Quality of use of restraint systems regarding the use of the seatbelt by the driver

![Bar chart showing the distribution of children according to the quality of use of restraint systems and the use of the seatbelt by the driver (n=1,395).]

Figure 3: Distribution of children according to the quality of use of restraint systems and the use of the seatbelt by the driver (n=1,395)
Results

Quality of use of restraint systems regarding the fixation system

Figure 4: Distribution of children according to the quality of use of restraint systems per CRS’ type of fixation ISOFIX/non-ISOFIX (n=1,106)
Conclusion

This survey is the first quantitative and qualitative overview of child safety and restraint conditions conducted in Belgium.

Key figures to retain are:

Minimum 1 children out of 2 is not correctly restrained in Belgium

1 child out of 10 is not restrained at all

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1 kind op 2 is FOUT vastgeklikt. En het jouwe?

GO FOR ZERO

* 1 children out of 2 is incorrectly restraint. And yours?
Conclusion

Explaining factors for child safety

- Seat belt use of the driver,
- Purchasing the CRS in a specialized shop and receiving advise,
- The length and the frequency of the trip,
- The attention of parents/drivers to correctly restrain children and fix CRS.
- The ISOFIX CRS reduce the rate of misuse significantly compared with non-ISOFIX devices.
Thank you for your attention

For more information please consult our website

www.ibsr.be

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