

A sociological approach to child safety in cars in Europe

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Abstract - The European CASPER (Child Advanced Safety Project for European Roads) project studying car child safety includes a sociological approach in order to have a better understanding of the behaviour of parents driving children under 12 years old. A questionnaire was distributed via the internet in Europe with 998 parents (representing 1638 children) from 22 European countries responding.

The results inform on the way parents secure their children during a car trip. Many parents did not control how their children were installed in the child restraint system (CRS). A toddler was more likely to travel into a child seat than an older child was. Regarding misuse situations, an important part of the participants did not think that they could make mistakes when fixing the child seat to the car (26%) or when placing the child into the seat (39%).

This leaves an important field of action especially by communication via different media and in the CRS sale outlets.

INTRODUCTION

Driving is a social action and the attitude of the driver is also influenced by social criteria. The safety of children in cars is determined by the behaviour of the driver. Therefore, it is of interest to study with a sociological approach the way children are transported. It would be pertinent to see deeply how the act of driving is a part of the system of values, behaviours, perceptions of the driver and the child as they result from education, family life and social environment. In other words, it is not sufficient to think of accidents and driving activities from the automotive transport view only. All dimensions of the way children are transported should be taken into account: this is what the CASPER project aimed for.

The CASPER approach was to use different sociological methodologies in order to rapidly information about the way parents/carers behave with their children during car travels and about their belief and knowledge in road safety. First a questionnaire was developed to gather data on demographic information, travel patterns, child restraint system (CRS) use, child position in the car, but then also information regarding how parents perceive the way they secure their children, the way they drive, how they choose the systems and what kind of improvement they expect. This questionnaire was distributed on-line throughout Europe. The survey gave trends about the parents' behaviour and beliefs concerning road child safety. The questionnaire has also been distributed in a paper form. Thus, in France and Italy, two different samples were studied, allowing common trends to emerge from the two different samples in each country. In the same manner, it was interesting to observe the common trends between the two countries. This approach by a questionnaire was completed by the focus group method. This method was carried out in France using a technique involving the use of in-depth group interviews to gather detailed data and to understand how people built their reality. Further information can be found in Langlois et al. 2012[1].

This paper focuses on the methodology and the results of the on-line European survey with 998 answers collected and analysed.

CONTEXT

In Europe, children aged from 0 to 14 years old are safer today than ten years ago (1998 to 2007). France, Slovenia, Belgium ranked highly with a reduction about 10%, but countries such as Hungary and Italy had just a reduction of less than 4% [2]. In fact, 447 children under 10 were killed in road traffic accidents in EU22 in 2008. Amongst these victims, around 280 were killed in a car. In European countries, all CRS (baby seats, child seats, booster seats and booster cushions) sold must

conform to the United Nations Regulation R44.03, "Uniform Provisions Concerning the Approval of Restraining Devices for Child Occupants of Power-Driven Vehicles ('Child Restraint Systems')". Child restraints work primarily by restraining children in the event of a crash. A crash at 50 km/h without a child restraint system is like a 10-meters fall for a child. However, the chance of being killed or severely injured is about seven times greater for children who are not belted or restrained. When installed and used correctly, the child restraint systems reduce the risk of fatal injury by 71% for infants and 54% for toddlers [3]. It is important to use the proper restraint according to the age, the weight and the height of children. However, there is little knowledge on the way parents choose the CRS and install their child in the car in Europe.

The reality of road safety reveals that although there is an increase of child restraint systems use in European countries, inappropriate use and misuse are still widespread. Parents still fail to participate in safety-seat check and this has an important impact on child safety in crashes. A UK study (GMTV survey in association with Britax, 2006) of 1500 people reported that one in ten children travel without a belt at all [4]. Half of people interviewed said they did not use a booster seat for their children in cars at all. During a safety campaign in Scotland (Scottish In-car Safety Initiative, 2002) it was found that 40% of child restraints were fitted incorrectly [5]. Concerning misuse, several studies showed that misuse of child restraints was associated with greater risk of injury. Sweitzer & al. (2002) revealed that children installed in misused systems received more head injuries and had a higher incidence of abdominal injury [6]. As regards inappropriate use, inappropriately restrained children are nearly three and half times more likely to suffer a severe injury than children in a proper restrain (Cody & al, 2002) [7].

Inappropriate use and misuse are world-wide issues. In each country where surveys on child safety in cars transportation were carried out, the results revealed that a critical proportion of CRS were not used in a proper way. The EC CHILD project (Willis, Le Claire, Visvikis, Kirk and Grant) noticed that the most common problems were [8]:

- Incorrect fitting of the restraint, often due to incorrect routing of the seat belt or the seat belt being tightened insufficiently to hold the restraint in place.
- Incorrect restraining of the child in the restraint: more precisely, failure to tighten the harness sufficiently.
- Use of adult seatbelts as the only restraint for children between the ages of 4 and 10 years.
- Use of infant carriers facing forwards instead of rearwards.

In France, a field study called "CEDRE" was performed as part of the EC CHILD project and initiated by the French insurance "La Fondation MAIF" (CEDRE, 2008) [9]. This study gained a better understanding of the overall situation of transportation among children under 12 years. It aimed to stop cars at the toll barrier on the highway if children were on board. The results were highly alarming: the rate of misuse was 68%; only 32% of the 431 children checked in cars were correctly fitted. The most common misuse was the wrong position of seat belt to fix child restraint systems to cars. The survey also reported that 78% of people did not use Isofix. The use of Isofix was not widespread although it provides benefits for child safety.

The aim of the new CASPER sociological approach was to have a global view on the way parents behave with children in cars, including the parameters that influence them when purchasing CRS.

METHODOLOGY

To gather more knowledge on the habits, the attitudes, the perceptions, the choice and the expectations of drivers, a self-administered questionnaire was available on the CASPER website. Parents of children aged between 0 and 11 years old were encouraged to answer it. The study brief set out a number of aims for the research:

- to know the parental habits in terms of car transportation
- to understand how they use child seats
- to assess parental understanding and knowledge of road safety legislation and risk
- to explore parents' images of road safety in cars, but also how they define their own behaviour
- to look into children's attitude towards child restraint systems from parents' words

- to identify parents' needs
- to make recommendations

Objective

A questionnaire was created to address the points above. It was developed to gather data as demographic information which may influence the child's security, but also information regarding how parents perceive the way they secure their children, the way they drive, how they choose the systems and what kind of improvement they expect. The safety knowledge was evaluated and a few questions relating to the child's behaviour as a specific passenger were included in this questionnaire. It was structured considering four main areas:

- **The Real Behaviour:** this questionnaire is not designed for a field survey. Nevertheless, this section offered answers to real-world questions (demographic characteristics, the type of vehicle used, the habits, travel patterns, the CRS used, etc...).
- **The Safety Knowledge:** this section aimed to evaluate the content and the level of safety knowledge among drivers in charge of child transportation.
- **The Social Representations:** the aim was to understand how driver's experience and social perceptions affect the practical ways and behaviour. Each of us reconstructs the real world around us according to who we are, what we know, what we have experienced and what we perceive. This section was also comprised of questions on the self-perceptions.
- **Choice and Expectations:** Examining how people achieved their restraint systems and what they would like to see improved (concerning child restraints, vehicles, legislation...).

Figure 1 illustrates the objectives of the questionnaire. It shows the four main areas (as above) from which follow a list of 7 sections that provide an overview of the issues. For example, the schema shows that the section "CRS Choice and expectations" included questions relating to the topics 'Real behaviour' and 'Choice and expectations'.

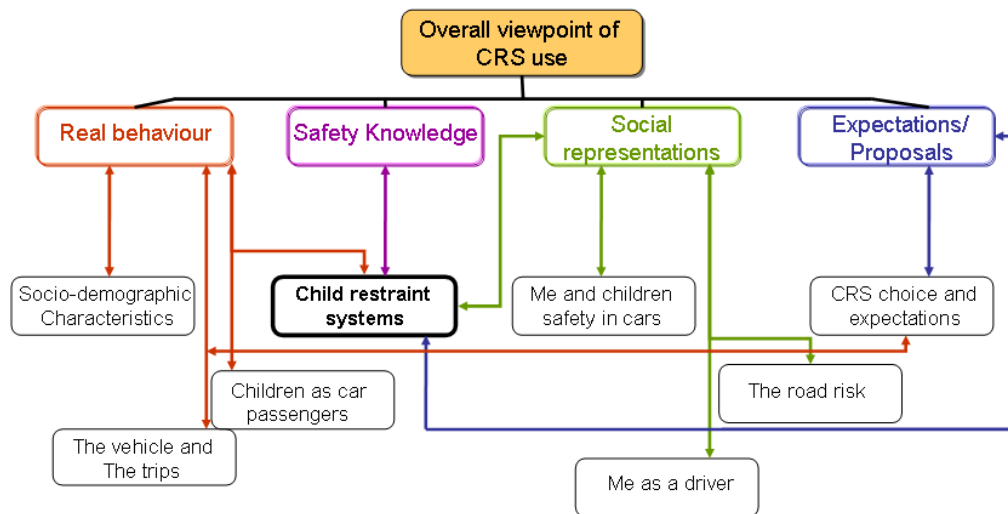


Figure 1. Questionnaire overview

Content of the questionnaire

Section I: "Socio-demographic characteristics"

This section was designed to give some demographic information about parents/carers who filled in the questionnaire: gender, age, marital status, number of children within their household, number of children aged between 0 and 11 years, residence and level of education. They were also asked to indicate their profession, the year they obtained their driving licence and to specify whether they had been involved in an accident as passenger or driver in the past. Demographic data are necessary to understand the different behaviours observed in the real world.

Section II: “The vehicle and the trips”

This section focused on driving habits. Parents were asked to indicate the type of the vehicle they drive, the frequency they drive their children and the distance of most of their trips. They were also asked if the birth of their child forced them to buy a new car and the reason behind the purchase. At the end, they had to evaluate the importance of child safety in cars according to their opinion.

Section III: “Child Restraint Systems” (CRS)

The third part of the questionnaire concerned the child restraint systems. All parents were asked to indicate what type of restraint they used for each child they drove. They also indicated the weight and the height of the children. Furthermore, the study questioned their behaviour and perceptions relating to CRS use. Participants had to answer if their children are properly restrained according to their opinion, if there were any circumstances they would secure their child with a seat belt only and if they thought they had made mistakes when fixing the CRS to their car or when placing the child in a CRS. Consequently, knowing what safety systems drivers use and the way they perceive their safety attitudes could help to understand the reality of child safety.

Section IV: “Me as driver”

This was a very short section in which participants had to give a very general idea of how they perceived their own driving.

Section V: “Road safety and Risk”

This part was closely linked to the previous one: drivers had to indicate whether they felt concerned by the risk of an accident. The possibility of knowing how drivers qualify their driving and their perception of road safety may provide information on how they secure children in cars.

Section VI: “Children as car passengers”

Children are specific passengers, and their behaviour can change according to their age. Consequently, this section questioned their presence in the car: are they cooperative when parents install them in a CRS? Do they fasten themselves? When they fasten themselves, do parents check the installation? Furthermore, it also is interesting to know if problems could come from the presence of children in the car.

Section VII: “Child Restraint Systems, choice and expectations”

The last section of the survey questioned the way people get the child restraint systems: where did they get the child restraint systems? Did they test them before the purchase? If so, where did they test them? Did they test the systems with the child? Did they read the user’s manual? What was the most important factor when choosing the systems? The possibility of finding more information sources to learn about CRS exists but it is interesting to know if parents obtained these sources. In conclusion, parents could suggest improvements to the safety of children in cars.

Procedure of the questionnaire

On the CASPER website, parents were informed that they could participate in the research and complete the self-administered questionnaire only if they met the following conditions:

- They had a valid driver’s licence.
- They had or rented a car.
- They had a child or children aged between 0 to 11 years of age.

They were also informed that the questionnaire was totally anonymous and that “*the data collected will be treated in the strictest confidence and will only be used in research that explores how child safety in vehicles can be improved*”. Finally, the text on the website explained the possibility to obtain group findings from the CASPER website. The data were collected from March 2011 to August 2011.

RESULTS

The following section describes the parents' answers to the on-line questionnaire. For each section, parents' responses were summarised using descriptive statistics since the sample was voluntary and was not representative of the population of parents driving children aged 0 to 11. Of the 1491 questionnaires collected, 1052 were complete.

Section I: Socio-Demographic information

All parents who participated in this study completed this section. Firstly, 998 European parents completed the on-line questionnaire. They came from 22 European countries (Figure 2). 54 participants answered from non European countries. In this paper are presented the results collected in Europe.

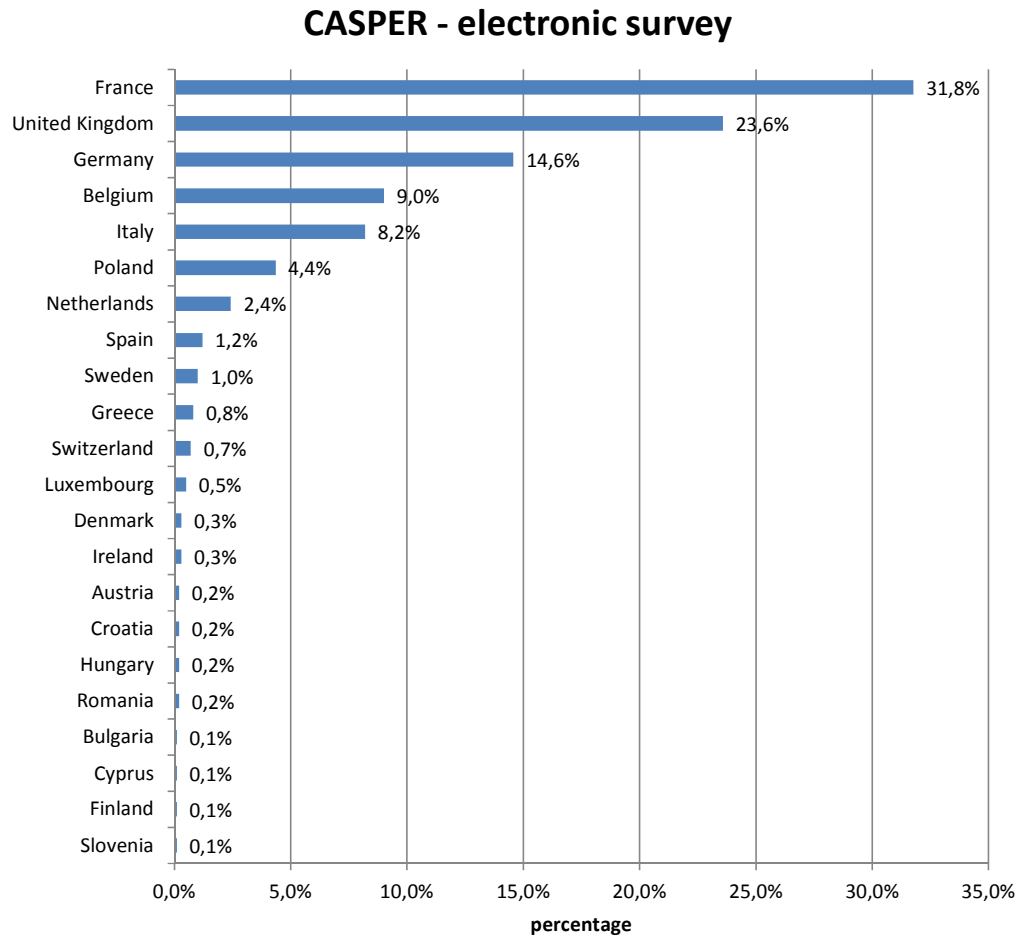


Figure 2. European countries from which came the participants (%) of the on-line survey (n=998)

The sample contained 668 women (69%) and 306 men (31%), highlighting the fact that women were more likely to be those who filled out the questionnaire. Most of the women were between 31 and 40 years of age (61%), and the majority of the men were between 31 and 45 years (81%). The great majority of people reported they lived as couple (95%) - about 5% answered that they were a single parent. The average number of children per family in the sample was 1.85. The number of children may influence the way children could travel.

Due to the fact that many participants had at least two children, the sample of children is larger than the sample of parents : it included 813 boys and 825 girls aged between 0 and 11 years of age, which meant 1638 children in total. There were equal proportions of male and female children. The age distribution of the children is described in Figure 3. Almost 50% were babies under 3 years old. This group has specific ways to travel in a car (at the front where airbags must be deactivated, rearward-facing position vs. forward facing position, etc).

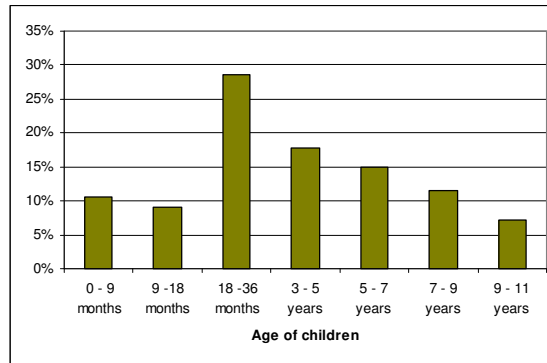


Figure 3. Percentage of children according to the age (only children aged between 0 and 11 were considered)

Of the participants, 30% lived in a metropolitan area, less than one quarter of participants reported that they lived in a regional city (23%), 31% of participants reported that they lived in a country town and the remainder reported that they live in a rural area (14%).

Considering the level of education, the sample had a very large majority of people that have a high level of education (82%). That means that the sample is not representative of the whole population and probably not representative of the population of parents with children aged 0 to 11. Furthermore the great majority of parents reported having a job worked full-time (72%).

Considering their driving experience, 87% of the sample had a considerable amount of experience on the road: they had been driving for more than 10 years. Considering accident involvement, a high proportion of parents (64%) had had such an experience.

Conclusion of section I

The on-line distribution of the questionnaire enabled a large sample to be collected. However, even if the sample represents a real diversity of people, it is not possible to know if the sample is representative of the population of parents driving their children (aged between 0 and 11 years) since this population is not well known. Furthermore, the way the answers were collected was voluntary – with participants requiring computer skills and access to the internet. The parents in this sample were most likely to be: a woman, living as a couple in a metropolitan city or in a country town, having a high level of education.

Section II: The vehicle and the trips

According to the classification of different vehicles, the answers of parents showed that respectively 34% and 30% of vehicles used by parents belong to two categories ‘Saloon’ and ‘Multi – purpose vehicle’. 15% of participants bought a car the last two years (2010-2011), 72% had a car aged between 3 and 10 years, 13% of the participants had a car older than 10 years. 45% of the participants reported they had bought a new car at the birth of one of their children, which is a high proportion. According to their views, the main reason which forced them to change car, was the lack of space in their old car: 60% of the participants gave this answer. The reason “safety” represented only 15% of the people who changed their car.

Moreover, participants were asked to report the frequency of driving with children. There was a difference between men and women: 61% of the women drove their children every day compared to 38% of the men who answered doing the same. In contrast, 16% of men drove their children once a week in comparison to only 6% of women. A third of the parents who reported driving their children every day lived in a country town and 18% lived in a rural area. Almost 50% lived in a metropolitan area or a regional city. In contrast, almost 60% of the participants who said that they drove their children “at least once a month” lived in a metropolitan area. In this study, the mother was the parent who drove their children more often during the week. Consequently, if one out of two drivers is a woman in the global population, women are more likely to be those who drive children during the week.

Conclusion of section II

Trip length and frequency vary according to the gender and residence location, which explains why children have different travelling habits according to these two variables. 45% of European participants to the survey changed their car at the birth of a child. When they bought a new car, the “lack of space” was the main reason for the purchase. As a result, cars have to be practical and spacious. Only 15% bought a new car for safety reasons.

Section III: Child Restraint Systems

This section of the questionnaire was designed to investigate child restraint’s use while travelling in cars and to examine how participants perceived the way they used the child restraint systems and the content of their safety knowledge.

Information about children and their restraint systems

First of all, it was interesting to look at the weight distribution according to children’s age. Only children who should be in a child seat system due to their weight were considered. As shown in Figure 4, there are some important disparities of weight according to age. Between 0 and 9 months of age 15% of newborns weigh between 9 and 13 kg and can legally travel in a forward facing system. The disparities are also important amongst the ten-year children who are legally allowed to travel with only the seat belt and can sit at the front of the car: 10 to 11 year old children, in this study, weighed from 22 to 58 kg. In other words, a difference of double exists in the same age range. The same variability was observed for the height. These differences may cause the parents confusion when choosing a child restraint system.

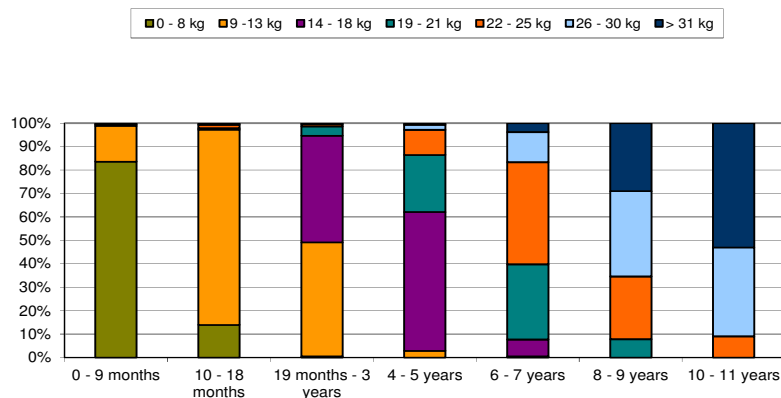


Figure 4. Weight distribution according to the age of children (n=1519)










An important aim of the study was to determine if children aged between 0 and 11 years were restrained appropriately. It is important to know that the criteria considered to make the classification were the age and the weight for the following reason: these criteria are the main ones presented to parents by authorities. The height was very rarely mentioned.

Once the type of restraint used according to the age and weight of children was taken into account, inappropriate use could be analysed and evaluated. Inappropriate use is a subtle but widespread issue. It involves the use of a restraint by children outside the age (or height and weight) range for which that type of restraint is designed (Gotschall & al, 1998) [10]. Consequently, a simple calculation was first performed to determine if children were being appropriately restrained. It was decided to keep the weight criterion to point the inappropriate selections (Table 1).

Based on the weight provided by parents, the result was the following: 13% of children were not in the appropriate child restraint system. The results show a misuse concerning babies weighing between 0 and 8kg, 90% were in a rear-facing position, as recommended by the legislation. However, 10% of them were in a forward-facing position, and in inappropriate restraint systems: 9% of children weighing between 0 and 8kg were restrained with a forward facing system (harness). The use of the rear-facing position decreased with child’s weight. Amongst 9 to 13 kg infants, only 13% were in a rear-facing position. The second observation is an inappropriate selection related to the booster

cushion use. From the findings, 7% of children weighing between 14 and 18kg, 23% of children weighing between 19 and 21kg were also installed into booster cushion, which is not recommended regarding safety. The third observation is the too early use of seatbelt only. A significant part of children was fastened with the only seat belt although they should not be because of their weight. For instance, 5% of children weighting between 22 and 25 kg, 17% of children weighting between 26 and 30 kg and 35% of children weighting between 31 and 36 kg used seat belts during car transportation which is highly dangerous.

Table 1. Type of restraint used according to children weight and inappropriate use in red (%)

%	Carrycot 	Rearward facing infant carrier 	Forward facing system (harness) 	Child seat with shield 	Harness booster seat 	Booster seat with backrest 	Booster cushion 	3-point seatbelt only 	2-point seatbelt only 
0 - 8 kg	92	73	4	3	0	0	0	0	0
9 - 13 kg	8	25	60	47	34	1	0	0	0
14 - 18 kg	0	1	32	50	39	36	11	0	33
19 - 21 kg	0	0	3	0	14	23	17	5	0
22 - 25 kg	0	0	1	0	8	24	27	9	33
26 - 30 kg	0	0	0	0	3	10	24	26	0
31 - 36 kg	0	0	0	0	1	4	15	28	0
> 37 kg	0	1	0	0	0	2	6	31	33

Most of the parents do not have ISOFIX

Only 23% of the parents who participated to the study answered that they had ISOFIX in their vehicle. ISOFIX is not yet currently widespread.

Reasons why parents use child restraint systems

A large majority of participants (76%) claimed using the child restraints because of safety. However, still 17% answered that they used the child restraints because it was compulsory. So, if parents were aware of the aim and the important benefits provided by child restraints systems, some of them did not associate the car to the topic of “child safety”.

When asked if their children were always restrained with a child restraint system, a majority of parents said that their children (91%) were always installed in a child restraint system during car transportation. Only 3% never used a child restraint system. This result is important because parents often tend to deny having socially unacceptable behaviors, especially in regards to child safety. Moreover, the results showed real disparities between children according to their age: 95% of children aged 0 to 9 months were always restrained with a child seat according to parents’ answers against 79% of 8-9 years old children and only 60% of the 10-11 year-old-children. In other words, in the sample, younger children were more likely to be always restrained with a child restraint system than older children.

There were three main situations under which children could travel with a seat belt only: “When there are not enough restraint systems for all”: 16% of the responses; “When the trip is short”: 10% of the responses; “When children travel in another car”: 9% of the responses. Consequently, parents could drive their children without the right restraint systems in these situations, which is the equivalent to inappropriate use. Indeed, inappropriate use also included children using adult belts when they were still within the height/weight range for booster seats.

In the sample, parents who would let their children travel with only a seat belt in one circumstance at least were more likely to be those who answered a seat belt can secure children under 10 years of age, which is not allowed by the legislation and all safety recommendations ($\chi^2(1) = 13.0176, p < 0.001$). This data confirm that beliefs have a role in activities: thinking that the seat belt is safe enough for

children under 10 leads parents to let their children travel without CRS in certain situations. To continue evaluating the perceptions and beliefs, participants were asked how they perceive the way they use the child restraint systems and the great majority of them thought they secured their children in the right manner (always 75%, mostly 19%). When participants had to indicate what main mistake (asked to choose one) they could do when fixing the child restraint system to the car, parents reported that there was no mistake when fixing the CRS in place for 26% of children travelling in cars. The response 'Don't know' concerned 8% of children: parents were not able to say if they had ever made a mistake or not when fixing the child restraint system in the car. Consequently, the possibility of doing wrong is not envisaged or known by these parents. Even so, with 23% of the responses, "routing the seat belt through an incorrect path of the CRS" represented the main quoted problem in fixing the child restraint to the car, immediately followed by "CRS not correctly fixed to the car" (17%). In regards to the main problems parents admitted to when installing the children in CRS, the response "No mistake" concerned 39% of children aged between 0 and 11 years old. A minor part of parents did not know what mistake they could make in putting the child in the restraint (6% of children). The majority of parents admit to some mistakes. Indeed, 51% of children were not well secured in the child restraint system. The main reason observed was the following "Harness is not snug" (18%). So, more than half of the children were not correctly installed in CRS. The parents suspected a wrong installation; some of them were not able to evaluate what was wrong.

Conclusion of section III

The results showed two main issues when selecting the child restraint system or when using it: 1) many babies did not travel in a rearward facing position although they should do; 2) even if it is legal, many children should not travel into a booster cushion because they were too small. Besides, the ISOFIX system is used by only 23% of the participants in their vehicle. Furthermore knowing the safety benefits does not mean parents always use the child restraints. Regarding the frequency of use, an interesting result was the difference between young children and older children: a toddler or a young child was more likely to travel into a child seat than an older child was. Parents had real difficulties to see their mistakes. Nevertheless, when parents mentioned mistakes, they talked about two of the most widespread misuses all field studies found: 1) routing the seat belt through an incorrect path of the child restraint system; 2) the harness not tight. It is important to encourage parents to put their knowledge in practice.

Section IV: Me as a driver

Considering the way the participants perceived their attitude when driving, the findings from the questionnaire revealed that 96% of the participants always fastened their seat belt when they drove. These participants also perceived themselves as good drivers:

- 66% of them felt able to avoid the danger when they drove.
- Half of parents thought that they drove the same way as other drivers (48%) and did not overestimate their driving. But a considerable part of the people interviewed thought that their driving was a little or a lot better in comparison with others (43%).

Conclusion of section IV

In this survey, parents revealed an important self-confidence in the way they drove. Some road safety studies show that self-confidence and overestimation could be an explanation of car accidents [11].

Section V: Risk and road safety

Participants felt relatively concerned by road accident risk. At the same time, when they were asked to indicate the main cause of accidents according to their point of view, a great majority of respondents (67%) claimed that the driving of the other people was the main reason of accidents. Only 14% answered that their own driving could be a cause of a car accident. This result confirms the good perception people have of their own driving. But it also demonstrates that they felt that car accidents could not come from their behaviour. The main risk was often perceived to be "external factors" such as the other drivers behaviour or bad luck.

Furthermore, the great majority of participants (78%) found that accidents were "often", "mostly" or "totally avoidable". By comparing the results of this question with the last one, there is an ambiguity

in participants' answers. They mostly claimed other driver's responsibility in the previous question but, in this one, they answered that accidents were avoidable. The ambiguity lies in the fact of determining who can avoid the accident. The last question of this section focused on knowledge of accidentology. The great majority thought that the risk of accident was the same on short trips as on long trips (65%). Only 28% answered it was riskier on short trips. 7% answered it was riskier on long trips.

Conclusion of section V

Parents were aware of road risk but did not feel responsible for the risk and car accidents. In other words, there was a paradox with the findings of the previous section: participants previously claimed the responsibility of the driver but in section V, road issues come from external factors such as other drivers. Another contradiction: 93% of them considered that risk of accident was greater on short trips or has the same risk as long trips but some of them could let their children travel without specific child restraints on short trips. Consequently, the risk awareness does not prevent some parents from risky behaviour.

Section VI: Children as car passengers

As mentioned previously, children are specific passengers. Indeed, between the age of 0 and 11, their morphology and behaviour change considerably. Consequently, the way they must be secured also changes. Furthermore, younger children have little control over the environment while older children can affect the way they are restrained. According to parents' view, the level of cooperativity changes depending on the children's age: the less cooperative children are those aged between 10 months and 3 years. Only 40% of this age group are always cooperative (Figure 5).

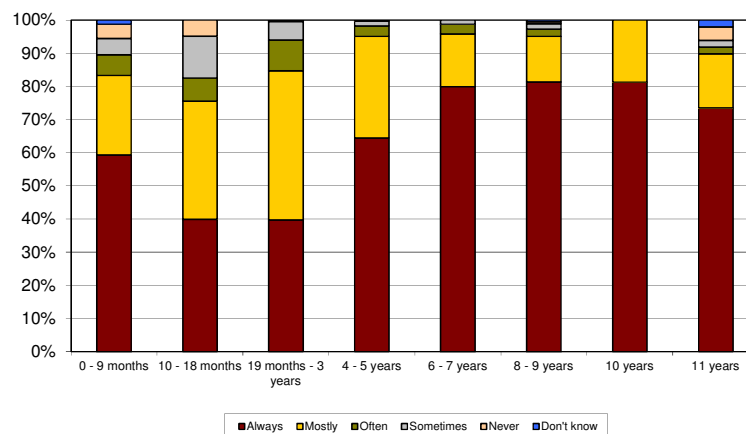


Figure 5. Children cooperativity in cars (%)

The study then aimed to know if many children fasten themselves. Fastening alone really starts at the group of 4 – 5 years (always or mostly 19%), although 45% of them never fastened themselves. The older the children, the more they fasten themselves: 29% of the 6-7 year old children “always” fastened themselves, contrary to only 12% from the same age group who “never” fastened themselves; and respectively 65% of the 8-9 year old children and 77% of 10-11 year old children are “always” in charge of securing themselves. Consequently, compared to young children, older children were more likely to fasten themselves.

If the children fasten themselves, it is always the parent's responsibility to ensure that they are appropriately restrained. When selecting all children who were likely to fasten themselves (from “always” to “sometimes”) and when taking into account all parents who answered they did not always check how their children were restrained, it was possible to observe that the installation of 52% of children who fastened themselves are not always checked. If children can be in charge of the way they are restrained, it can affect the quality of the child restraint use.

The presence of a child may also affect the quality of the driving. Indeed, for the open question relating to the problems observed from the presence of children in the car during trips, the respondents mentioned two main issues:

- Distraction (44% of the responses)
- Noises/shouts (30% of the responses).

Finally, 72% of the parents of the study said that children could be a cause of a car accident.

Conclusion of section VI

Travelling with children is something completely different from travelling with other adults. Even if most children are cooperative, some age groups are more difficult to control because they are able to fasten or unfasten themselves. In other words, some groups of age require specific attention, but children old enough to fasten themselves are the ones that parents check less during a car journey. Finally, once placed in the restraint system, especially when there are several of them, children can distract their parents from driving, which made 72% of parents answer that the presence of children can cause an accident.

Section VII: Child restraint systems, choice and expectations

The survey included a final chapter focused on the way drivers choose child restraints and how and where they got information relating to children safety in cars.

The specialized shop (56%) represented the main place of purchase concerning child restraint systems. Subsequently, 10% of child restraints were bought on internet and 10% at the supermarket according to the responses. Contrary to specialized shops, choosing a child restraint system on the internet or at the supermarket means that individuals do not receive any advice or recommendations from an expert seller on the way it fits to the child as they grow or on the way in which it has to be used. The difficulty and impracticality of asking questions to untrained staff may cause more wrong choices in supermarkets than in specialized shops. Then, the survey showed that the great majority of participants (almost 70%) reported that they did not test the restraint systems before the purchase. A link was noticed between the type of the shop (specialized shop vs. supermarket) and the probability to test the child restraint system before the purchase. People who did not test the CRS before buying it were more likely to be those who bought the system at the supermarket than those who bought one in a specialized shop ($\chi^2(1) = 66.0381, p < 0.0001$). Logically, the main place where the child restraints systems were tested for the first time was at "Home" (64%). In second came the specialized shops (31%). The other places were seldom the places where the CRS were tested: supermarkets (2%), auto-centers (3%). Furthermore, 51% of the participants claimed they had tested the restraint system with the child, against 37% who answered "No". 61% people tested the system using the instructions, against 27% who did not. When making a purchase, people choose the product according to certain criteria, which they deemed useful and important. From the responses of the participants, the most important criteria were "It suits to child's age, weight and size", "Good safety Ratings" and "European standards approved" (respectively 29.5%, 29% and 12% of the answers). Thus, in their responses, more than 70% of parents followed safety rules and legislation. Subsequently, the choice was determined by "it suits different ages/size of a child" (8%) followed by "Good reputation of the CRS" (8%). "CRS price" was very rarely the priority (3%) as well as "Comfort" (3%) or "Design" (1%).

Parents were also asked about the information that they got before the purchase: 52% of them got information about the CRS. These results are almost in concordance with the fact that 70% of the parents followed the rules in their choice of a CRS. For those who were informed, the main sources of information were: internet (40%), magazines (25%) and specialized shops (25%), and people around them (family, friends, and colleagues) (11%).

In regards to safety campaigns, only 46% of the participants claimed they were aware of campaigns on child safety in cars (vs. 40% of "No"). For participants who saw safety campaigns, the television/radio (41%), internet (18%) and magazines (17%) were the main sources (76%).

Conclusion of section VII

Specialized shops were the main places to buy a child restraint system (71% of the participants bought a system in a specialized shop). In this sample, child restraint systems are not products parents purchase on internet. Nevertheless, the internet was used to get information on child restraint systems: the prices, regulations, recommendations, and parents' discussions on forums. Furthermore, the results showed that not all shops give the same purchasing opportunities: supermarkets do not seem to offer much information in order to purchase the right system. Furthermore, the impossibility to test the child

restraint may cause more inaccurate choices in supermarkets than in specialized shops. The need for information seems to be the main issue: more than half of participants claimed that they did not see any safety campaigns on the subject. When they did, it is apparent that television and radio were the main sources.

CONCLUSION

The on-line CASPER survey provided a large range of results on the European situation in regards to child travelling in cars. Although the sample is not representative, it combines the responses from 22 European countries and 998 parents. The descriptive analysis of the results is very informative on the way parents secure their children during a car trip. The choice of the good CRS is rendered the more difficult as there are important disparities in height and weight.

Added to the difficulty to choose the CRS most suitable for the weight, height and age of the child, the way the child is installed in the CRS, and the CRS in the car, is important for the safety of the child. A significant proportion of parents did not know or did not control how their children were installed in CRS. Furthermore, they did not know the regulations concerning the safety of children in the car well. Reassuringly, the majority of them bought the CRS in a specialized shop where they received advice and could test the system but less than half of them were aware of campaigns on child safety in cars. That leaves an important field of action knowing that the communication media should mostly be television/radio, internet and the press. The CRS sale outlets should also be encouraged to guide parents' selection according to the regulations and to advise them to test the CRS before purchase.

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