



An Exploratory Study of

Barriers to Child Restraint Use in New Zealand





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1 Introduction

The New Zealand Ministry of Transport conducts an annual observation study of child restraint use in children under 5. These studies have shown an increase over time in the use of appropriate restraints with the latest data released (2010) showing 93% of children correctly restrained (Ministry of Transport, 2011). While the use of appropriate restraints is high in New Zealand, in an analysis of NZTA CAS data for the period 2007-2011, there were 8 under 5 year olds killed and 3 seriously injured who were unrestrained, and half of the fatalities occurred on urban roads. A further two 6-10 year olds were killed, 6 seriously injured and 4 received minor injuries (NZTA CAS data, 2011). It is also noticeable that after a strong increase in use at the earlier part of the last decade (79% in 2000 compared to 89% by 2005) there has been a levelling off of usage rates in the last 5 years (91% in 2006 to 93% in 2010) (Ministry of Transport, 2011).

The current “Safer Journeys” strategy (Ministry of Transport, 2010) also has a specific interest in ways to increase restraint use, as well as raising the suggestion of increasing the age to which children would need to use restraints in line with international best practice. There is also a call for better data on the correct use of child restraints in New Zealand.

The key objective of this research is to determine which factors are seen as barriers to child restraint use by New Zealand parents, and that ultimately prevent some from correctly restraining their children. Identification of these barriers will provide the evidence-base to inform and help target future interventions, such that policy interventions, education initiatives, or social media campaigns are more effective at increasing child restraint rates amongst non-compliant parents, as well as reducing barriers for those parents that do comply.

2 Background

2.1 Child restraint usage in New Zealand

New Zealand children are twice as likely to die through injury as children who live in Australia, with motor vehicles being the number one killer of children in New Zealand, accounting for 1 in 5 child fatalities (ACC, 2010). Properly-used child restraints and safety belts reduce the risk of death in a vehicle crash by 71% and serious injury by 67% (ACC, 2010). For the four year period 2007 to 2011, 8 children under 5 were killed as passengers in road accidents that were unrestrained (NZTA CAS data, 2012).

Maximising the rate of child restraint usage is therefore vital for child safety in New Zealand. Legislation passed in 1994 requires the use of child restraints for all children under the age of 5, and until the age of 7 where a restraint is available (as detailed in Sections 7.6 and 7.7 of the Land Transport (Road User) Rule, 2004; discussed in section 2.2). However, official statistics from the Ministry of Transport (2011) show that some children are currently not being properly restrained. New Zealand has fallen behind international best practice in child restraint use, particularly among primary school children (Ministry of Transport, 2011).

Present use of appropriate restraints for children under 5 averages 93% across the country, with one region (Gisborne) as low as 85% (MoT, 2011). At the local authority level, rates drop as low as 79% (Waikato area). Of the regions where significant change was observed between 2009 and 2010, one region's usage rates significantly decreased (Wellington, from 97% to 91%) (MoT, 2011). In addition, usage rates significantly decreased in two metropolitan areas (Wellington and Christchurch). However, as seen in Table 1, average national rates have increased steadily in the last 10 years, up from 82% in 2001 (an eleven percentage point difference; MoT, 2011). This shows a move in the right direction but still places around 7 – 21% of children at risk when travelling by motor vehicle.

Those observed not correctly restrained were most commonly in an adult restraint (4%), but this is inappropriate for use by any child under 148cm tall (NZTA, 2011). A further 2% were completely unrestrained, half of which were on the knee of another passenger.

Table 1: New Zealand rates of restraint type used by children under 5 years¹

Category	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Appropriate restraint used	82%	86%	86%	87%	89%	91%	91%	90%	91%	93%
Adult safety belt used	9%	9%	8%	8%	7%	6%	7%	5%	5%	4%
Unrestrained	9%	5%	5%	5%	4%	4%	2%	5%	4%	2%

It should also be noted, that while these surveys have shown high rates of basic compliance, correct usage of child restraints is another problem. A recent checkpoint survey of Wellington drivers shows that while only a very small number of children were not in a child restraint, only 57% of children were in restraints that were completely correct in terms of fit and installation (Wellington

¹ Source: Ministry of Transport (2011)

City Council, 2012). Common faults included using a seat that was out of date or worn, using a seat unsuitable for the child or not having the seat installed correctly. The correct use of restraints is outside the scope of this research; however it is worth noting that the correct use of child restraints is complicated and may act as a barrier to use for some parents.

2.2 New Zealand’s legal context

Figure 1 presents the New Zealand regulations regarding the use of child restraints as detailed in the Land Transport (Road User) Rule 2004, Sections 7.6 and 7.7, which was the current law at the time the study was conducted, and as such was the context being examined. The proposed new law is presented at the end of this section.




Figure 1. Child restraints fact sheet 7

This legislation puts responsibility for appropriate child restraint use in the hands of the driver; the driver must ensure that all passengers under 5 years old are properly restrained by an approved child restraint that is appropriate for the age and size of the child (Land Transport (Road User) Rule 2004, Section 7.6). Approved child restraints include (NZTA, 2011):

- Infant restraints for young babies (often called baby capsules)
- Restraints for older babies, toddlers and preschool children (often called car seats)
- Booster seats for preschool and school-aged children
- Child safety harnesses (used with or without a booster seat) for preschool and school-aged children

A child under 5 years old must not travel in a vehicle if an approved and appropriate restraint is not available. All approved child restraints display the standard markings shown in Table 2 (NZTA, 2011).

Table 2. Standard markings for approved child restraints in New Zealand

 <p>Australian Standard AS/NZS 1754 Issued by SAI Global DO NOT REMOVE</p>	<p>Joint New Zealand/Australian Standard AS/NZ 1754</p>
 <p>E3</p>	<p>European Standard ECE44</p>
 <p>CERTIFIED TO APPROVED STANDARD THIS PRODUCT HAS BEEN PRODUCED IN COMPLIANCE WITH AN APPROVED STANDARD OR SPECIFICATION AND QUALITY PROCEDURES. Label issued under licence by BUREAU VERITAS NEW ZEALAND S 196001</p>	<p>New Zealand Standard ‘S’ mark</p>

Any child aged five to seven years old must use an approved child restraint where one is available (that is appropriate for the child's size and age) (Land Transport (Road User) Rule 2004, Section 7.7). Where an approved restraint is not available, a safety belt must be used. Where a safety belt is also not available, the child must travel in the back seat.

Children aged eight to fourteen years must use a safety belt if one is available. Otherwise, they must travel in the back seat (NZTA, 2011).

A child under fifteen years may sit in the front passenger seat only if the child is restrained by an approved restraint or safety belt (whichever is appropriate for the age and size of the child). However, a child under the age of 15 years is always safer in the back seat (NZTA, 2011).

There are a number of exceptions to this law. In short, a child does not have to use an approved child restraint if they are travelling in a (NZTA, 2011):

- Vintage vehicle (first registered before 1955) that isn't fitted with safety belts,
- Goods services vehicle (e.g. truck, van or utility) with an unladen weight over 2000kg that isn't fitted with safety belts, or
- Passenger service vehicle (e.g. taxi, shuttle, bus) where no appropriate child restraint is available.

Sourced from NZTA Child restraints Factsheet 7, <http://www.nzta.govt.nz/resources/factsheets/07/child-restraints.html>.

New Zealand is currently undergoing a submission process to change the law for child restraint use to be more in line with international best practice (e.g. see Australian law in section 2.3). The proposed legislation will make using an approved child restraint a legal requirement at all times until the age of 7 years, with use until 8 required when a restraint is available. The exemptions to this law will be decided through the submission process (Ministry of Transport website www.transport.govt.nz).

2.3 Australian legal context

Australia's Child Restraint Law differs from New Zealand's legislation. In line with New Zealand legislation, Australian law puts responsibility for appropriate restraint use in the hands of the driver; it is the driver's responsibility to ensure all passengers under 16 years of age are properly restrained in a seat belt or approved child restraint. This does not apply to those driving buses or motorbikes. Australian child restraint law can be summarised as follows (source: New Zealand Child Restraints, 2008, www.childrestraints.co.nz):

- Infants under 12 months travelling in a motor vehicle manufactured on or after 1 July 1976 are required to use an approved child restraint that is properly fastened and adjusted. There is an exemption that applies to certain vehicles with regard to this, which are detailed below
- Children aged between 12 months and 16 years must use an approved restraint, child restraint or seatbelt, when one is available, properly adjusted and fastened
- Children over the age of 16 are required to use an adult seatbelt
- Infants under 6 months old must be restrained in a rear facing restraint
- Children 6 months to 4 years old must be restrained in a rear or forward facing restraint
- Children 4 to 7 years old must be in a forward facing restraint or booster

- All children under 7 years old must travel in the back seat at all times, although it is emphasised children are safest in the backseat until at least 12 years old

Exemptions to the Australian law include (New Zealand Child Restraints, 2008):

- A child under one who is travelling in a taxi does not have to use an approved restraint where one is not available. However, the child must travel in the backseat
- A child travelling in a police or emergency vehicle does not have to use an approved restraint
- A child that has a medical condition or physical disability that makes it impractical to use a child restraint (where there is a certificate from a doctor indicating this is the case) does not have to use an approved child restraint

An ‘approved’ restraint in Australia must meet the Australian Standard for child restraints (displayed in Table 2) and therefore display this label. The Standard was first introduced in 1973 and is one of the toughest in the world, demanding an extremely high level of protection for a child (New Zealand Child Restraints, 2008). This means that restraints manufactured in the UK, USA and in New Zealand do not comply and legally cannot be sold in Australia (New Zealand Child Restraints, 2008).

The Standard requires dynamic (crash) testing of restraints and features that significantly improve performance in a crash, including the use of a top tether strap to an anchor point for infant restraints, child car seats, child harnesses and some booster seats (New Zealand Child Restraints, 2008).

2.4 Safety benefits of usage

The FIA Foundation for the Automobile and Society (2009) state that “the use of seat-belts and child restraints is one of the most important actions that can be taken to prevent injury in a motor vehicle crash” (p. 6) and outline how seat-belts and child restraints prevent or minimise injury. The safety benefits of correct usage of child restraints can be summarised as follows.

Seat-belts and child restraints do not prevent accidents from happening; however, they play a major role in reducing the severity of injury to occupants during a collision. A major reason for this relates to the potential for ejection from a vehicle. Ejection from a vehicle is one of the most injurious events that can happen to a person in an accident, with 75% of all vehicle occupants ejected from a vehicle in a crash dying as a result. Seat-belts and restraints are extremely effective in preventing ejections; ejection rates for fatal accidents are much higher for those who were unrestrained (44%) than those who were restrained (5%) (FIA Foundation for the Automobile and Society, 2009).

The main benefits of seat-belts during an accident include (FIA Foundation for the Automobile and Society, 2009):

- Reducing the risk of contact with the interior of the vehicle or reducing the severity of injuries if contact is made,
- Distributing the forces of a crash over the strongest parts of the human body,
- Preventing the occupant from being ejected from the vehicle on impact, and
- Preventing injury to other occupants (e.g. through minimising the risk of back-seat passengers coming into contact with front-seat passengers).

For children, it is extremely important that the restraint used is appropriate for their size and weight. Restraints need to adapt and cope with different stages of infants' and children's development; a three-point lap and diagonal seat-belt designed for adults is inappropriate for this. One reason for this relates to the smaller portion of a child's abdomen that is covered by the pelvis and rib cage. In addition, a child's ribs are more likely to bend than an adult's (whose are more likely to break); this results in energy from a collision being transferred to child's heart and lungs when an adult's restraint is used. Three-point lap and diagonal seat-belts therefore increase abdominal injuries among children and are not optimally effective at preventing ejection. In contrast, an appropriately sized child restraint restrains a child's movement away from the vehicle interior and distributes the forces of a crash over the strongest parts of the body, minimising damage to soft tissues. Child restraints also reduce injuries from non-accident events (e.g. sudden stops, swerving) (FIA Foundation for the Automobile and Society, 2009).

These safety benefits result in some striking statistics. For example, recent Australian studies have suggested that lack of a child restraint increases fatality risk by four times (Lennon, Siskind & Haworth, 2008) and the Accident Compensation Corporation (2010) suggests a 71% reduction in fatalities and a 67% reduction in serious injuries with restraint use. Other reviews have shown that (FIA Foundation for the Automobile and Society, 2009):

- The risk of injury for children sitting in the rear of a vehicle appropriately restrained is 15% lower than those in the front
- The risk of injury for children aged 0-4 years in a forward facing child restraint is around 50% lower than those who are not appropriately restrained
- The risk of injury for children aged 0-4 years in a rear facing child restraint is around 80% lower than those who are not appropriately restrained
- The risk of injury for children aged 0-4 years is around 32% lower when restrained with a seat-belt only
- The risk of injury for children aged 5-9 years is around 52% lower when using an appropriate child restraint
- The risk of injury for children aged 5-9 years is around 19% lower when using a seat-belt only
- The need for hospitalisation for children aged 0-4 years is reduced by around 69% when using a child safety seat that is correctly installed
- The risk of death for infants is reduced by 70%, and that for children aged 1-4 years by 47-54% when using a child safety seat that is correctly installed

2.5 Correlates of usage and barriers to use

Seven to twenty-one percent of children in New Zealand are currently not appropriately restrained while travelling in a motor vehicle, despite both legislation requiring the use of an approved restraint and the benefits of such usage being well-documented (as outlined above). This indicates that there are barriers restricting the use of child restraints for children.

Previous research has shown that cost is a potential barrier for parents, with the purchase of a new restraint requiring a substantial financial outlay (e.g. the majority of new restraints in New Zealand cost over \$200). Both affordability and socio-economic status have been linked to decreased usage of child restraints (e.g. Wagenaar, Molnar & Margolis, 1988; Louis & Lewis, 1997). However, overall, research exploring the effect of household income and socio-economic status has found mixed results (e.g. Pless & Roghmann, 1978; Gielen, Eriksen, Daltroy & Rost, 1984; Webb, Sanson-Fisher & Bowman, 1988b).

Due to the link found with income, a number of intervention studies aimed at increasing use have explored the effects of providing low cost or free hireage options (e.g. Lindqvist, 1993; Sibley, Hunt & Harper, 2001). However, even with free hireage available, Sibley et al. (2001) found no increase in correct restraint use. In addition, hireage schemes at a reduced cost are currently available in New Zealand, but as mentioned above, children are still travelling unrestrained. This suggests it is not economic factors alone that prevent correct restraint use.

A wide range of alternative explanations for parents not using child restraints have therefore been proposed, including child discomfort or resistance (e.g. Hoadley, Macrina & Peterson, 1981; Weber & Allen, 1982; Inder & Geddis, 1990), inconvenience (e.g. Gielen et al., 1984; Pieterse, Kok & Verbeek, 1992), a belief that restraints provide little safety benefit to children (e.g. Foss, 1985) and lack of seatbelt use by the driver (e.g. Decina, Temple & Dorer, 1994).

One study conducted in New Zealand examined perceptions of child car seats, in which mothers were given new seats and asked to assess their safety, comfort and ease of use (Inder & Geddis, 1990). Almost all the participants rated the seat as safe and the best way to transport their child, however their perceptions of the comfort and ease of use had a large effect on use; those perceiving them as most difficult and uncomfortable showed significantly lower rates of restraint use (Inder & Geddis, 1990). Therefore, there is evidence that perceptions of discomfort and ease of use do have influence in a New Zealand context.

A study conducted in the UK also suggested child restraint usage may vary according to the child's age (Department for Transport, 2003). During a phone survey, parents suggested those aged 0-3 years were appropriately restrained 94% of the time, with usage rates steadily decreasing through higher age groups (66% of those aged 4-6 years, 41% of those aged 7-9 years and 26% of those aged 10-11 years²) (Department for Transport, 2003).

Evidence also shows that if parents have a restraint, they are likely to use it; those that do not use restraints typically do not own one (Webb et al., 1988b). Louis and Lewis (1997) also found providing education on the importance of using a restraint did not increase usage a year later. Parents were all given an approved restraint with half also receiving education; however no difference in usage between the two groups was seen through this intervention. Therefore, it seems that increasing ownership or availability of restraints may be key to increasing usage.

2.6 Summary

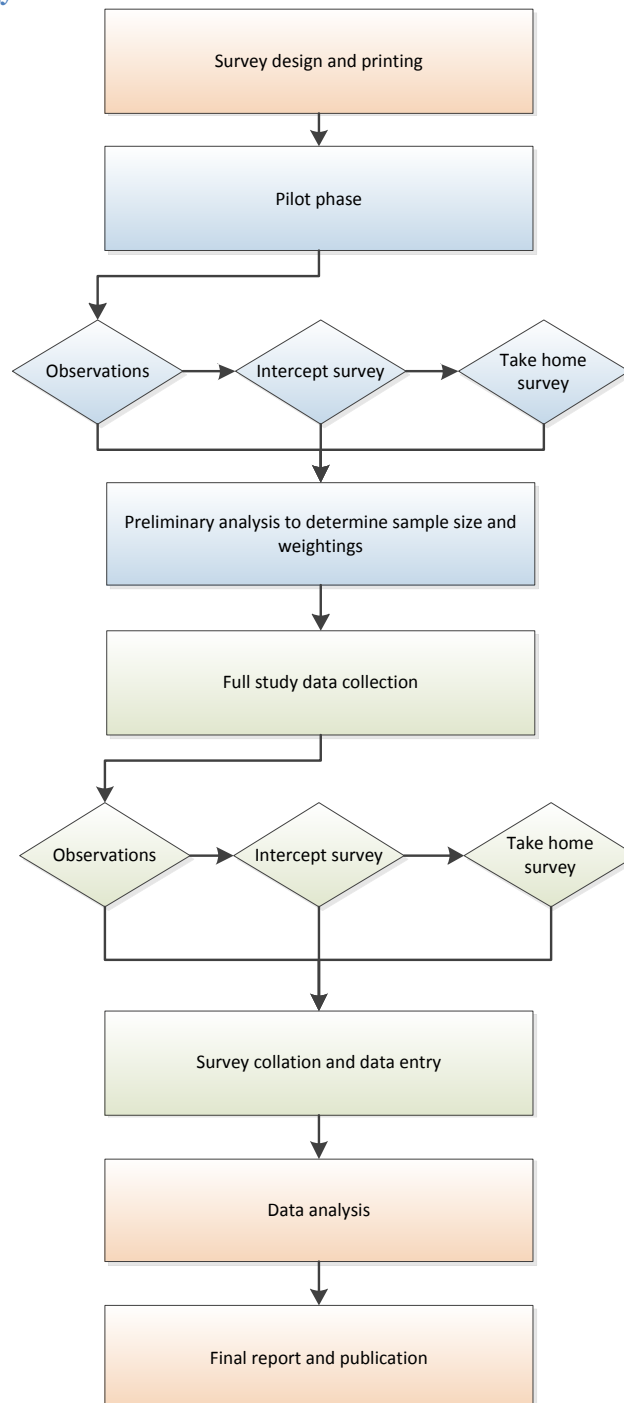
This project extends the previous research noted above, the majority of which is relatively old, when restraint use was far less common. It is likely that the reasons given by the remaining 7% of parents that do not use restraints will be different from those who were researched when usage rates were far lower. This study uses naturalistic observations, intercept surveys and questionnaires to investigate usage rates and some reasons for parents' choices, including the factors previously found to have influence (e.g. perceptions of comfort and ease of use, economic factors) with the goal of identifying barriers to use and interventions to increase usage rates across New Zealand.

² As discussed above, in New Zealand the use of an approved child restraint is only compulsory to the age of 5. Those aged 5-7 years must use an approved restraint only if one is available, with those aged 8-14 years having to use a safety belt if available or alternatively travel in the back seat.

3 Method

This research provides a detailed exploratory analysis of parents' self-reported barriers to child restraint use which includes (but is not limited to) income, ethnicity, general safety attitudes, barriers to hireage, understanding of legal requirements and other demographic variables that may have some relationship with restraint use. The key steps in the method are outlined in Figure 2.

Figure 2. Study methodology



3.1 Sampling

The study used a convenience sample of parents and caregivers visiting supermarkets across the Wellington region. Observations of restraint use and vehicle details were collected for all observed vehicles³.

The barriers to use of those that do not use child restraints are of the greatest interest to this study, and this group was oversampled as much as possible. However all parents' and caregivers' views were of interest as it was anticipated that the barriers experienced by those that do not use child restraints will be the same as those faced by those that do; the difference is that those that do use restraints overcome these barriers.

3.2 Observations

Interviewers completed a number of observation measures for every vehicle observed with children on board that could have been under 5 years of age, shown in Table 3 below.

Table 3. Observation measures

Variable name	Description	Variable coding
Child restraint status	Type of restraint used for each child observed (up to 5 children in each vehicle recorded)	1 = correct restraint 2 = adult restraint 3 = no restraint
Child approx age	Observer's estimate of each observed child's age	1 = up to 1 year of age 2 = 1 or 2 years of age 3 = 3 or 4 years of age
Driver restrained	Whether the driver was observed using a restraint	1 = yes 2 = no 3 = not sure
Older passengers restrained	Whether any other passengers over the age of 5 were observed using a restraint	1 = yes 2 = no 3 = some 4 = not sure
Car registration	The vehicle licence plate was recorded to allow database checks of vehicle and demographic information at a later date	
Approx age of car	Observers either recorded the year of the vehicle from the registration card or if not possible, estimated the age of the vehicle	
Type of car	General size of the vehicle was also recorded	1 = small vehicle 2 = medium vehicle 3 = large vehicle

3.3 Intercept surveys

Either once drivers parked their vehicles, or as they returned to their vehicles after leaving the supermarket (waiting until they had placed all their children in the vehicle), one of the interviewers approached the driver to invite them to take part in the short intercept survey. Participants were

³ The registration details of all observed vehicles were collected with the intention of submitting these to the National Vehicle Register to complete a demographic analysis (based on Census meshblock data of the registered address) to identify any differences between those that refused to take part in the survey and those that participated. However, this analysis was not completed due to the low overall number of refusals (8% of total observations).

offered a \$10 voucher for the supermarket in recognition of their time and to improve the response rate. The intercept survey consisted of questions regarding:

- the age of, and relationship to, the children observed in the vehicle
- knowledge of, and attitudes towards, the legal requirements for child restraints
- regularity of use of child restraints and adult seatbelts
- where the driver sourced the child restraints used (if any)
- what they found difficult about getting a child restraint (even if they use one)
- reasons for not using if they own a restraint but were not observed using it that day
- demographic information

A full copy of the intercept survey is included in Appendix A. If participants completed the intercept survey, the number corresponding to the observation measures of this driver was written on the survey when it was returned. If the participant refused, this was noted on the observation form.

3.4 Off-site questionnaire

Once the intercept survey was completed, participants were offered the opportunity to take a longer off-site questionnaire survey pack home with them to return via a freepost address. Each survey pack was numbered and this number linked to the observation sheet for all those participants that took one. The survey pack included a card to enter a prize draw for \$250 MTA vouchers, to be drawn at the conclusion of the study. This procedure uses best practice methodology to achieve the highest response rates possible based on our previous research experience (e.g. including freepost envelopes, use of prize draw incentives) that has achieved response rates of up to 50%.

The off-site questionnaire consisted of more detailed questions regarding:

- all children in their household's ages
- access to, and attitudes towards, restraints in general
- circumstances where they would not use restraints
- reasons they do not/think other parents do not use child restraints
- use of, and attitudes towards, rental schemes e.g. Plunket
- use of, and attitudes towards, second-hand child restraints
- how they chose what restraint to purchase and what they plan to do with them when they are no longer needed (if applicable)
- purchasing history of, and attitudes to purchasing, other child safety products (e.g. baby monitors, child-proof locks)

A full copy of this questionnaire is included in Appendix B.

3.5 Pilot study

To test the methodology and statistical robustness that could be expected from the study, a pilot phase was conducted prior to the full data collection. Two trained interviewers were onsite at a supermarket car park in Lower Hutt across two study days with the aim of collecting 100 completed intercept surveys. The first day was during the school term, the second in the school holidays, each during the hours of 9am to 3pm. All vehicles that entered the car park over this period were observed and drivers with small children in the car approached to take part in the

study. Due to them being reasonably infrequent, interviewers were instructed to oversample drivers with children that were not restrained; the interviewers prioritised these drivers, but did not have to ignore other drivers in order to approach all those observed not using restraints.

The results of the pilot study led to a few small changes to the methodology employed in the full data collection. Some parents had difficulty understanding what was meant by the term “child restraint” confusing this with an adult restraint. The questionnaire was therefore changed to include examples of what child restraints included.

Due to time constraints, one session of the pilot study data collection was completed during the school holidays rather than during the school term where it could be reasonably expected that the majority of children observed would be under the age of 5. Overall, the interviewers were able to differentiate between school age and under school age children during the school holidays reasonably accurately, with only 5 drivers approached for the survey incorrectly out of 54 observed (90.7% correct). However, this was an additional stress on the interviewers and made their role more difficult. Therefore, for the full data collection phase, all surveying was conducted in the school term, during school hours, to reduce the load on interviewers.

3.6 Full study phase

The full study data collection followed the method used in the pilot study, with a larger target sample size of 200 completed intercept surveys. Data was collected from a total of 5 supermarkets across the Wellington region over six study days.

One further addition to the off-site questionnaire survey packs was added in the full data collection; a small card was added to the pack where participants could anonymously provide the contact details of other parents they know that they had observed not using child restraints, at least occasionally. A survey pack was then mailed to these nominated parents, and on receipt of the completed survey, a \$10 supermarket voucher was sent to them as an acknowledgement of their time.

4 Results

4.1 Response rates

Overall, 292 drivers and 386 children were observed in the course of the study. Of this group, 269 drivers took part in the intercept survey, for a response rate of 92%. Ninety percent of those that participated in the intercept survey took the longer off-site questionnaire (242 participants). Overall, 118 off-site questionnaires were returned, for a response rate of 38.8%. Analysis showed that users and non-users of correct restraints were equally likely to agree to participate in the intercept survey, $\chi^2(1, N = 291) = 1.76, p = .33$. In addition, participants in the survey were asked to nominate any friends or family they knew that they had observed not using a child restraint on at least one occasion. This method led to another 12 participants completing the intercept and off-site questionnaires.

4.2 Observation measures

Based on Ministry of Transport 2010 data, it could be expected to observe up to 7% of drivers not using child restraints. Table 4 shows the number of children across the observed vehicles using correct child restraints, adult restraints or no restraints. As shown in the table, 7.3% of children were observed not using correct restraints over the course of the study, which is therefore in line with expected trends. However, when observed non-users were combined with self-reported non-users, the total sample of non-users was boosted to 51 drivers, or 16.8% of the total sample⁴.

Table 4. Child restraint use observed

Child restraint status	Number of children	Percentage
Correct child restraint	344	92.7%
Adult restraint	16	4.3%
None	10	2.7%
Unsure (not correctly restrained)	1	0.3%
Total	371	

Driver and older passenger seatbelt use was also observed, as this has been shown to be a predictor of child restraint use in previous studies. Table 5 shows that the majority of drivers and older passengers were observed using their seatbelts; however this measure was sometimes difficult to observe (e.g. in cases where drivers were approached as they left the supermarket rather than as they arrived).

Table 5. Overall restraint use

Restraint status	Driver	Other passengers
Yes	186 (63.7%)	94 (70.7%)
No	4 (1.4%)	2 (1.5%)
Mix	0 (0.0%)	2 (1.5%)
Not sure	102 (34.9%)	35 (26.3%)
Total	292	133

⁴ This includes participants who self-reported: (a) they were not using a restraint on the day of surveying for at least one child not in the vehicle at the time of interviewing (e.g. the child was inside the supermarket with another adult); (b) they didn't always use an approved child restraint; (c) there were circumstances where they wouldn't use an approved restraint (reported in the in the take-home survey); or (d) another participant nominated them as a non-user.

4.3 Intercept survey

The sample was split into a basic division of those observed using restraints (N=252) versus those who were classed as “non-users” (taken from the wider grouping explained above, N=51). Analyses were undertaken to explore which factors were significantly related to usage.

4.3.1 Sample

The sample was predominantly female (87% female, 13% male), with 61% indicating they were NZ European, 21% Maori, 11% Pacific Island, 3% Asian and 4% other. The median age of the sample was 40 years of age, while the median household income reported was \$55,000⁵.

4.3.2 Demographics

With regard to demographics (summarised in Table 6), both gender and ethnicity were significantly related to child restraint usage. Males were significantly more likely to not use an appropriate restraint than females, $\chi^2(1, N = 279) = 11.50, p < .001$, and in addition, those of Pacific descent were significantly less likely to use an appropriate restraint (where as those of European descent were significantly more likely, $\chi^2(3, N = 265) = 22.72, p < .001$).

In contrast, driver age, income and the number of vehicles owned by the household did not have significant relationships with restraint use (driver age $\chi^2(5, N = 279) = 22.72, p = .31$; household income $\chi^2(3, N = 259) = 3.98, p = .26$; number of vehicles $t(254) = 1.47, p = .14$, respectively).

⁵ This median income compares to a median household income for New Zealand of \$59,000 in the last census (Statistics NZ).

Table 6. Demographic split by user group

	Drivers using restraints	Drivers not using restraints
Gender		
Male	23 (10.0%)	14 (28.0%)
Female	206 (90.0%)	36 (72.0%)
Ethnicity		
NZ European	143 (65.9%)	18 (37.5%)
Maori	43 (19.8%)	13 (27.1%)
Pacific Island	16 (7.4%)	14 (29.2%)
Asian	7 (3.2%)	0 (0.0%)
Other	8 (3.7%)	3 (6.3%)
Age		
Under 25	34 (14.8%)	3 (6.0%)
25-34	89 (38.9%)	27 (54.0%)
35-44	77 (33.6%)	14 (28.0%)
45-54	17 (7.4%)	4 (8.0%)
55-64	8 (3.5%)	2 (4.0%)
65 or older	4 (1.7%)	0 (0.0%)
Income		
Under \$10000	17 (8.1%)	4 (8.3%)
\$10-20000	11 (5.2%)	5 (10.4%)
\$20-30000	15 (7.1%)	3 (6.3%)
\$30-40000	16 (7.6%)	6 (12.5%)
\$40-50000	19 (9.0%)	5 (10.4%)
\$50-60000	27 (12.8%)	7 (14.6%)
\$60-70000	25 (11.8%)	7 (14.6%)
\$70-80000	21 (10.0%)	5 (10.4%)
\$80-90000	13 (6.2%)	1 (2.1%)
\$90-100000	6 (2.8%)	1 (2.1%)
\$100-110000	18 (8.5%)	2 (4.2%)
\$110000 or more	23 (10.9%)	2 (4.2%)
How many vehicles do you have in your household?		
Average number of vehicles	1.8	1.5

Table 7 summarises the demography, relationship and number of children travelling in the observed “user” and “non-user vehicles”. Non-users of restraints had a significantly higher number of children travelling in their vehicle on the day of surveying ($M = 1.76$) compared to users ($M = 1.38$), $t(266) = -2.2, p < .05$. In contrast, there was no significant difference in the average age of children travelling with users versus non-users, $t(333) = 1.11, p = .05$, and in addition, the child’s relationship with the driver (based on their own children vs someone else’s child) did not have a significant relationship with restraint use, $\chi^2(1, N = 268) = 1.00, p = .32$.

Table 7. Child characteristics split by user group.

	Drivers using restraints	Drivers not using restraints
How many children are travelling with you today?		
1 child	155 (67.4%)	21 (55.3%)
2 children	64 (27.8%)	9 (23.7%)
3 children	10 (4.3%)	5 (13.2%)
4 children	1 (0.4%)	2 (5.3%)
5 children	0 (0.0%)	1 (2.6%)
How old are the children travelling with you today?		
Average age in months	23.6	27.5
What is your relationship with the child(ren) you have with you today?		
Own children	191 (76.7%)	34 (82.9%)
Relative's children care for regularly	18 (7.2%)	1 (2.4%)
Relative's children care for occasionally	18 (7.2%)	1 (2.4%)
Friend's children care for regularly	7 (2.8%)	2 (4.9%)
Friend's children care for occasionally	6 (2.4%)	0 (0.0%)
Paid carer/nanny	7 (2.8%)	2 (4.9%)
Other	2 (0.8%)	1 (2.4%)

4.3.3 Understanding of the law

Table 8 shows that the majority of both users and non-users did not understand the current law regarding child restraint usage. The most frequently endorsed option for both groups was “no age, based on weight and height”, followed by the correct legal requirement⁶ of 5 years of age. There were no significant differences in knowledge of the New Zealand Law regarding child restraints between users and nonusers, $\chi^2(3, N = 265) = 3.43, p = .33$, indicating that non-use was not a result of lack of understanding of the law.

When asked for their opinion on what would be ideal as a legal requirement, the largest proportion of both users and non-users believed legal requirements based on height and weight rather than a set age was ideal, followed by up to 5 years of age (the current legal requirement)⁷. There were no significant differences in self-reported “ideal” New Zealand Law regarding child restraints between the two user groups, $\chi^2(3, N = 265) = 6.52, p = .09$. This indicates non-users have similar beliefs to users, even though their observed behaviour may not match this.

⁶ The legal requirement at the time of data collection was that an appropriate child restraint must be used at all time for children up to 5 years of age or, if one is available, up to 7 years of age. This law is currently being reviewed, however, with a proposed change to mandatory wearing up to 7 years of age.

⁷ Participants were also able to provide an “other” age than those listed in the survey. Users offered the following alternatives: at least 6 years old (N=1), 8 years (N=3), 10 years (N=1), 11 years (N=1), 12 years (N=1) and “the older the better” (N=1). One non-user offered an alternative which was 8 years old.

Table 8. Legal knowledge split by user group (current legal requirement in bold)

	Drivers using restraints	Drivers not using restraints
According to New Zealand law, until what age must a child be in an approved child restraint at all times?		
1 year of age	4 (1.8%)	1 (2.1%)
2 years of age	1 (0.5%)	1 (2.1%)
5 years of age	78 (35.8%)	16 (34.0%)
7 years of age	50 (22.9%)	6 (12.8%)
No age, based on height and weight	85 (39.0%)	23 (48.9%)
Until what age do YOU think you should legally have to use a child restraint?		
1 year of age	1 (0.4%)	0 (0.0%)
2 years of age	0 (0.0%)	2 (4.1%)
5 years of age	68 (30.2%)	13 (26.5%)
7 years of age	62 (27.6%)	10 (20.4%)
No age, based on height and weight	86 (38.2%)	24 (46.9%)
Other	8 (3.6%)	1 (2.0%)

4.3.4 Source of child restraints and self-reported use

Child restraint characteristic measures collected in the intercept survey are displayed in Table 9, split by user group. As can be seen in the table, the majority of both groups purchased their child restraints new, but considerable proportions of both groups also had second-hand and/or rented restraints. “Other” ways participants reported they obtained restraints included “given as a gift⁸” (N=7) and purchased from a Marae (N=1). Analysis showed that non-users were significantly more likely to have obtained their child restraints second-hand compared to users, $\chi^2(1, N = 303) = 7.33$, $p < .01$, however, there were no other significant differences between the two groups on how the restraints were obtained (e.g. rented, purchased new).

In relation to self-reported usage rates, non-users were significantly more likely to report using child restraints sometimes or less frequently compared to users, who were significantly more likely to report using restraints all the time, $\chi^2(1, N = 276) = 39.13$, $p < .001$. In line with this, non-users were also significantly more likely to report using their own seatbelts “sometimes” or “rarely” compared to users (who were significantly more likely to report “always” using their seatbelts), $\chi^2(1, N = 280) = 10.51$, $p < .01$.

The biggest self-reported difficulty in obtaining a restraint for both “users” and “non-users” was the expense, followed by knowing what type was needed. Other barriers specified by participants included:

- finding the best quality restraint (N=3)
- ensuring fit into the vehicle (N=2)
- knowing how to install the restraint correctly (N=1)
- knowing when to move to a larger seat (N=1)
- longevity/adaptability (N=1)
- ensuring the seat met New Zealand safety standards (N=1) and
- ensuring comfort for children and that new seats matched any old seats still being used (N=1).

⁸ These restraints are therefore likely to be purchased new, but this is not able to be confirmed, so they are treated separately for these analyses.

A further 17 indicated there were no issues. There were no significant differences between groups based on what they found most difficult in obtaining a restraint, $\chi^2(2, N = 277) = 5.85, p = .05$.

As shown in Table 9, non-users selected a range of reasons for not using an appropriate restraint, however the majority reported they were using one on the day of surveying. The following “other” reasons were offered by non-users for not using a restraint: unable to fit enough restraints for each child in the vehicle, don’t usually take children in the car and the child had outgrown the seat (N=1 each).

Finally, analysis showed there was no relationship between vehicle size and user group, $\chi^2(2, N = 291) = 1.56, p = .48$.

Table 9. Restraint use characteristics split by user group.

	Drivers using restraints	Drivers not using restraints
How did you get the child restraints you currently have?		
Do not have any restraints	1 (0.4%)	2 (3.9%)
Purchased new	167 (66.3%)	28 (55.9%)
Purchased second-hand	25 (9.9%)	12 (23.5%)
Rented	32 (12.7%)	9 (17.6%)
Borrowed	20 (7.9%)	7 (13.7%)
Other	7 (2.8%)	1 (2.0%)
How often do you use child restraints?		
Never	0 (0.0%)	0 (0.0%)
Rarely	0 (0.0%)	1 (2.1%)
Sometimes	0 (0.0%)	7 (14.6%)
All of the time	228 (100.0%)	40 (83.3%)
What is the HARDEST thing about getting a child restraint?		
Knowing what type need	74 (36.1%)	10 (22.2%)
Expense	82 (40.0%)	27 (60.0%)
Understanding process to get	4 (2.0%)	1 (2.2%)
Time and hassle	7 (3.4%)	3 (6.7%)
Multiple issues	12 (5.9%)	3 (6.7%)
Other	26 (12.7%)	1 (2.2%)
If you're not using a child restraint today, what is the MAIN reason you are not using it?		
I am using a restraint	220 (99.5%)	22 (64.7%)
I do not have any restraints	0 (0.0%)	2 (5.9%)
Only a short trip	0 (0.0%)	2 (5.9%)
Restraint is in another car	0 (0.0%)	2 (5.9%)
Child doesn't like it	0 (0.0%)	1 (2.9%)
Too much hassle	0 (0.0%)	1 (2.9%)
Multiple issues	1 (0.5%)	1 (2.9%)
Other	0 (0.0%)	3 (8.8%)
How often do you as a driver or passenger wear your seatbelt?		
Never	0 (0.0%)	0 (0.0%)
Rarely	0 (0.0%)	2 (4.0%)
Sometimes	5 (2.2%)	4 (8.0%)
All of the time	225 (97.8%)	44 (88.0%)
Vehicle size		
Small	70 (27.8%)	8 (20.5%)
Medium	99 (39.3%)	19 (48.7%)
Large	83 (32.9%)	12 (30.8%)

4.3.5 Summary of intercept survey results

Overall, males and those of Pacific Island descent were more likely to be observed not using restraints than other groups. Driver age, household income, and number of vehicles were not related to restraint use.

Those observed not using restraints were also observed with more children in the vehicle than those using restraints, but the children's age and their relationship to the driver were not related to use.

Knowledge of the law was not good among participants but did not differ between users and non-users. The majority believed the requirements were based on height and weight, and that this was preferable to a set age. Raising the age was supported by approximately a third of users and one-fifth of non-users.

Non-users were more likely to have second-hand restraints and to report they used child restraints and their own seatbelts sometimes or less. There were no significant differences between the groups in what they found hardest about getting a restraint with the expense (40% users, 60% non-users) and knowing what type they needed (36% users, 22% non-users) being identified as the biggest barriers.

4.4 Off-site questionnaire

4.4.1 Access to restraints

Summary statistics for participants who returned the off-site questionnaire are provided in Table 10. As can be seen, there was a higher average number of restraints per household than number of children under 5, and number of children under 5 that are regularly driven for both groups. There was no significant difference between the two groups on the average number of restraints available per household, $t(114) = 0.58, p = .56$, indicating that non-use was not a result of a lack of access to restraints.

Table 10. Summary statistics split by user group.

	Minimum	Maximum	Mean	Std. Dev.
<i>Users (N = 87)</i>				
Number of children	1	11	2.4	1.5
Number of children under 5	0	5	1.4	0.8
Number under 5 regularly drive	0	5	1.5	0.9
Number of restraints in household	0	6	2.2	1.4
<i>Non-users (N = 30)</i>				
Number of children	1	6	2.5	1.4
Number of children under 5	0	2	1.1	0.7
Number under 5 regularly drive	0	6	1.5	1.3
Number of restraints in household	0	5	2.0	1.2

4.4.2 Occasional use

Participants were asked whether there were any circumstances under which they would not use a restraint, as displayed in Table 11. All participants who reported any circumstance in which they would not use an appropriate child restraint were coded into the “non-user” group for later analyses, as explained earlier.

Table 11. Circumstances would not use a restraint.

Situation	Frequency
At night	0 (0.0%)
On short trips	4 (3.4%)
When they are asleep	0 (0.0%)
When travelling in someone else’s vehicle	7 (6.0%)
When my child refuses	0 (0.0%)
When there are not enough restraints for everyone	7 (6.0%)
When my child’s friends are in the car	0 (0.0%)
There are no circumstances where I would let them not use a restraint	101 (86.3%)
Other	6 (5.1%)
Total	117

In addition to the reasons presented in Table 11, participants also specified the following situations where they believed they may not use a restraint:

- if the child was unwell or hysterical (N=2)
- in a taxi where a restraint was not available (N=1)
- travelling from one house to another in the same street (N=1)
- when driving an additional smaller child who would use the restraint instead (N=1)
- when overseas in a country that doesn't use them (N=1).

4.4.3 Restraint attitudes and knowledge

Several items testing participants' general attitudes towards using child restraints were included in the survey. Figure 3 shows the mean scores on each item (scored out of 5, with higher means indicating higher agreement with the item) for both the restraint user group and the non-user group. There were no significant differences between user groups on ratings of any of the items shown, therefore, both users and non-users had similar attitudes towards restraints.

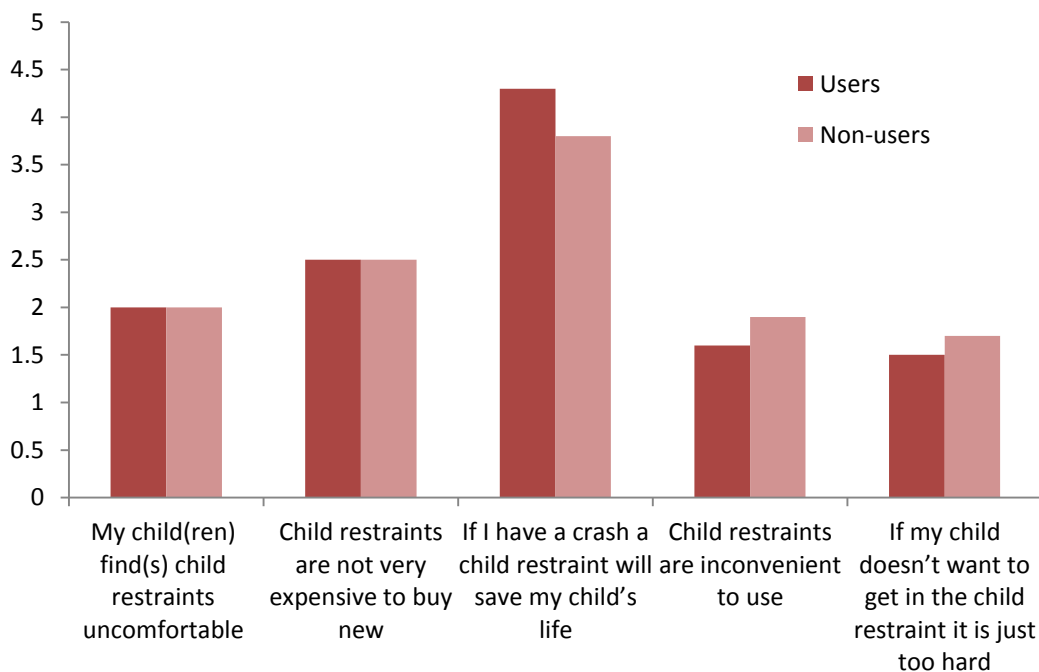


Figure 3. Attitudes towards restraints (split by user group)

Participants' general safety attitudes and knowledge of child restraint safety are displayed in Figure 4 (again scored out of 5, with higher means indicating higher agreement with the item). There were again no significant differences between user groups on ratings of any of the following items. This finding again shows no difference in the knowledge or attitudes of parents that may explain their differing restraint use.

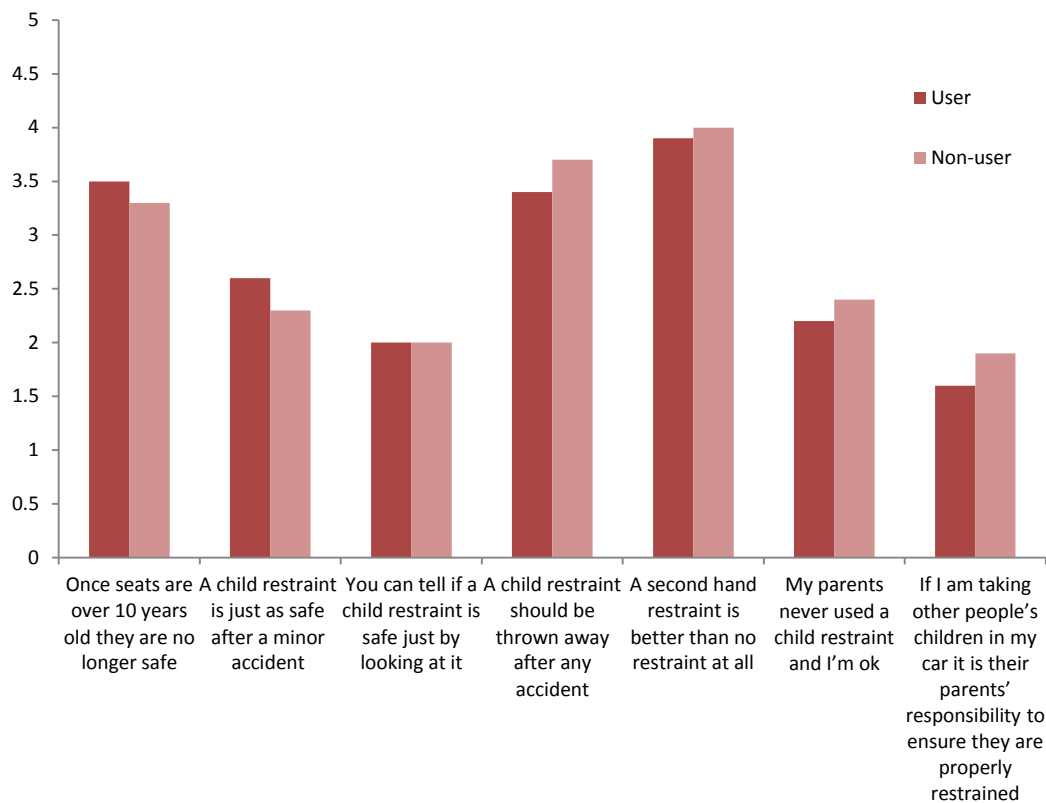


Figure 4. Child restraint knowledge (split by user group)

4.4.4 Other safety related purchases

While the focus of this study is child restraint use, the survey also examined purchase of other safety equipment for children. The following two figures present the percentage of participants that have bought or intend to buy other safety equipment for their children (users Figure 5, non-users Figure 6). The figures show that with the exception of baby monitors and stair gates, the purchase of other safety equipment did not differ greatly between the groups, however there was a slightly higher percentage of non-users that indicated they intended to buy these items, rather than already having purchased them. At least in terms of intentions, the two groups did not differ in their use of safety equipment.

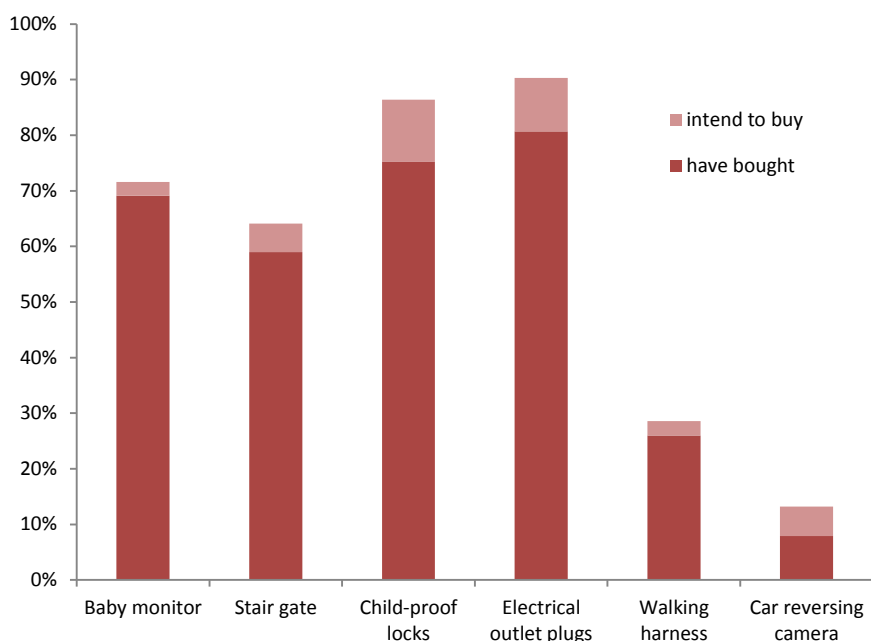


Figure 5. Purchasing of other safety measure by restraint users

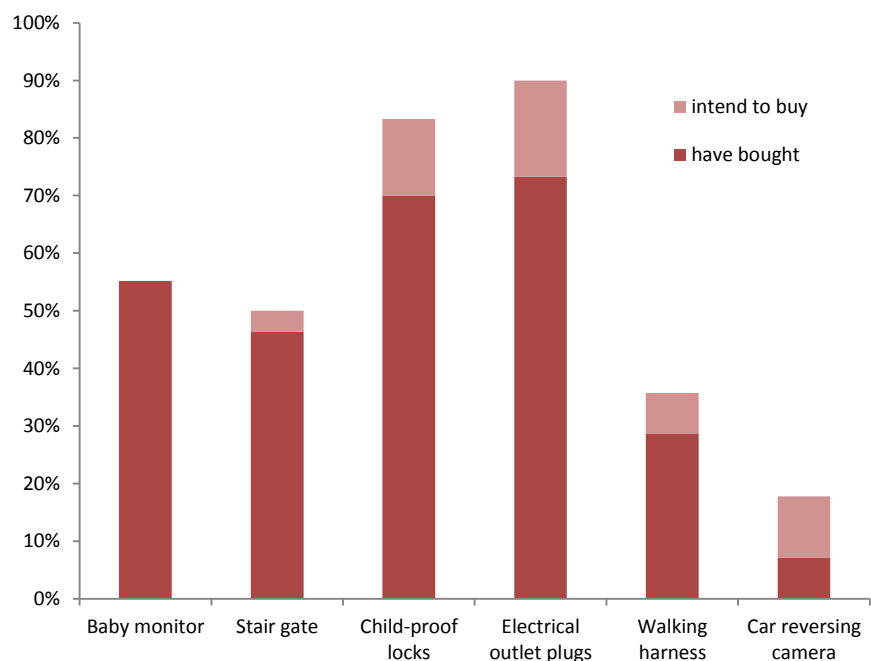


Figure 6. Purchasing of other safety measures by restraint non-users

4.4.5 Perceived barriers to others

In addition to the barriers they themselves faced in getting child restraints, participants were asked what they believed stopped other parents from using them; the results are summarised in Table 12, split by user group.

Table 12. Reasons participants believe contribute to other parents not using child restraints

	Users	Non-users
Confusion over type of restraint they need	42 (48.3%)	11 (36.7%)
Expense	82 (94.3%)	29 (96.7%)
Too much hassle	41 (47.1%)	17 (56.7%)
Having multiple vehicles	32 (36.8%)	10 (33.3%)
They don't believe they make a safety difference	11 (12.6%)	7 (23.3%)
Children don't like them	23 (26.4%)	11 (36.7%)
Other	13 (14.9%)	7 (23.3%)
Total	87	30

Nearly all participants in both groups reported they believed the expense contributed to this decision, with the next most frequently endorsed option being the hassle involved with using a restraint for non-users, and confusion over which type was needed for users.

Participants offered the following additional reasons they believed other people did not use restraints:

- laziness
- lack of education
- being able to fit enough in the vehicle or them taking up too much room
- confusion over how to fit it properly/safely or difficulty in installing restraints
- being in too much of a rush

Fourteen percent (N=12) of users reported personally knowing someone who did not always use appropriate child restraints, compared to 16.7% (N=5) of non-users (this difference was not statistically significant, $\chi^2(2, N = 116) = 0.13, p = .77$). Table 13 displays the main reasons participants believed these people did not use restraints.

Table 13. Main reason participants believe known non-users don't use restraints

	Users	Non-users
Confusion over type of restraint they need	0 (0.0%)	0 (0.0%)
Expense	2 (16.7%)	0 (0.0%)
Too much hassle	5 (41.7%)	1 (20.0%)
Having multiple vehicles	0 (0.0%)	0 (0.0%)
They don't believe they make a safety difference	0 (0.0%)	1 (20.0%)
Children don't like them	1 (8.3%)	2 (40.0%)
Other ⁹	1 (8.3%)	0 (0.0%)
Selected multiple options	3 (25.0%)	1 (20.0%)
Total	12 (100.0%)	5 (100.0%)

⁹ Only one participant suggested an alternative reason for someone they knew not using a restraint and this was "not thinking about safety".

4.4.6 Restraint rental schemes

Of child restraint users, 45% (N=39) had used Plunket's rental service, 11% (N=10) had used another rental service and the remaining 44% (N=38) had never used a rental scheme. Of non-users, 56% (N=17) had used Plunket's service, 4% (N=2) had used another service and 40% (N=12) had never used a rental scheme. These differences were not statistically significant, $\chi^2(2, N = 116) = 2.0, p = .37$. A similar number of users (77.9%) and non-users (79.3%) reported they were registered with Plunket.

The reasons participants gave for why they had not used a rental scheme are displayed in Figure 7, split by user group. The most frequently endorsed reason was "I preferred to buy my own" for both groups, but for some of the non-users, price was still an issue.

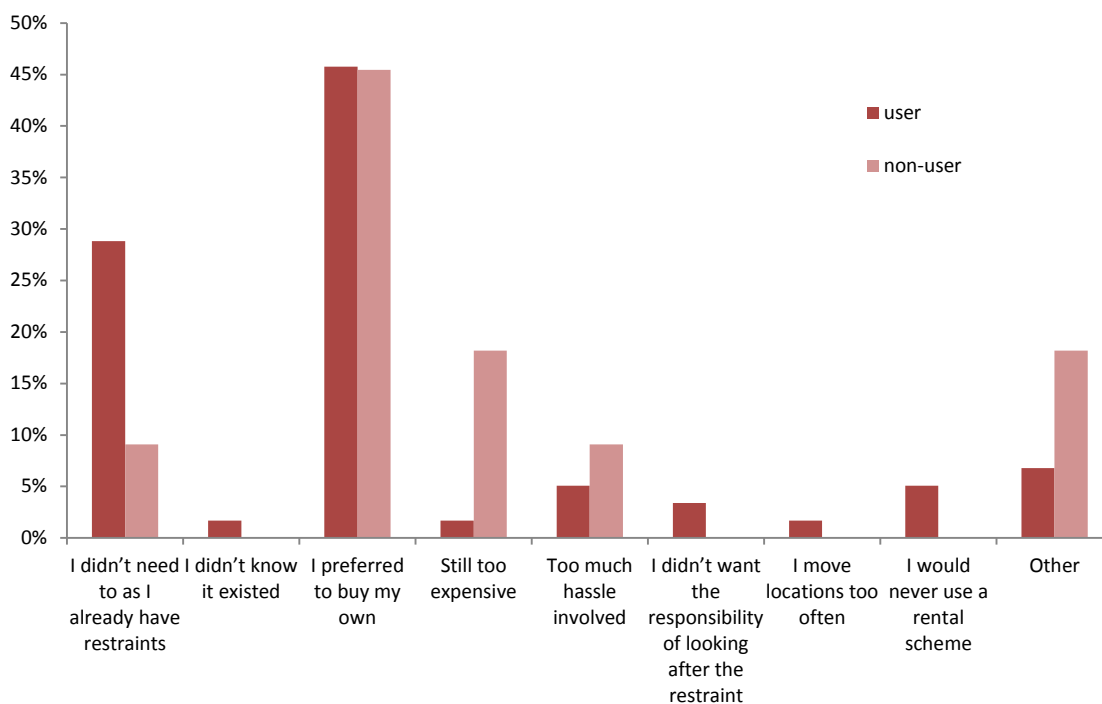


Figure 7. Reasons participants had not used rental schemes (split by user group)

“Other” reasons given by participants for not using rental schemes included:

- purchased a restraint as planning several children and it works out cheaper in the long term
- didn't want a second-hand restraint for my first baby
- I was given a restraint as a gift
- the restraint was provided by employer
- rental scheme had run out of restraints to hire

The following items (displayed in Table 14) assessing attitudes towards restraint rental services were formed into a scale ($\alpha=.79$). An independent samples t-test showed there were no significant differences between restraint users' (M=20.1) and non-users' (M=20.3) mean scores on the scale, $t(76) = -0.25, p = .80$.

However, significant differences in the ratings of the services were found when the sample was split by those that had used rental schemes ($M=20.8$) versus those that had not ($M=17.1$), $t(76) = 4.89$, $p < .001$, indicating that users of rental services had more positive attitudes towards the services. Item means for these two groups (rather than those who were observed using restraints versus non-users) are therefore presented in Table 14.

Table 14. Attitudes towards restraint rental services

	Have used (N=66)		Never used (N=31)	
	Mean	Std. Dev	Mean	Std. Dev
The restraints provided by rental services are of a high standard	4.2	0.7	3.9	1.0
Using a restraint rental service is easy to organise	4.2	0.7	3.7	1.0
You have to travel a lot to get restraints organised through rental services*	2.1	0.9	2.2	0.9
Restraint rental services provide helpful assistance in making sure you have the right restraint	4.4	0.7	3.9	1.0
You have to produce a lot of paper work to hire a restraint*	2.1	0.9	2.7	0.8

* These items were reversed to form the scale. Note: Higher means indicate higher agreement with the item

4.4.7 Second-hand restraint use

The use of second-hand restraints was also explored in the survey. Rates of use for both restraint users and non-users are reported in Table 15. Analyses showed there were no significant differences between user groups on reported use of second-hand child restraints, $\chi^2(2, N = 117) = 2.6$, $p = .27$, although a significant difference was found between groups for the larger sample who completed the intercept survey.

Table 15. Use of second-hand restraints by user group.

	Users	Non-users
Yes, currently use one or more second-hand restraints	25 (28.7%)	12 (40.0%)
Yes, have previously used one or more	28 (32.2%)	11 (36.7%)
No, I have never used a second-hand restraint	34 (39.1%)	7 (23.3%)
Total	87 (100.0%)	30 (100.0%)

A split of where participants obtained the second-hand restraints they own is provided in Table 16. Most participants got their second-hand restraints from family members, followed by a friend. Four participants identified other sources they had obtained their second-hand restraints from: three reported obtaining their second-hand restraints from internet site Trade Me, with the remaining participant reporting they obtained it from a shop.

Table 16. Where obtained second-hand restraints.

	Users	Non-users
A family member	27 (46.6%)	12 (44.4%)
A friend	19 (32.8%)	11 (40.7%)
A stranger	9 (15.5%)	3 (11.1%)
Other	3 (5.2%)	1 (3.7%)
Total	58 (100.0%)	27 (100.0%)

Participants were also asked to rate the safety of second-hand restraints compared to new restraints. There were no significant differences between user groups on ratings of the safety, $t(111) = 1.57, p = .12$. Similarly, there were no significant differences in this rating between those who had used second-hand restraints versus those that had not, $t(111) = 0.21, p = .84$.

The following items assessing attitudes towards second-hand restraints (displayed in Table 17) were formed into a scale ($\alpha = .72$). Independent samples t-tests showed there were no significant differences between user groups on mean scale scores, $t(97) = 1.33, p = .19$, or those who had used versus had never used second-hand restraints, $t(97) = 1.48, p = .14$. Therefore means for the total sample are shown in Table 17, which highlights that overall, participants believe second-hand restraints to be safe, particularly when the history of the restraint is known.

Table 17. Attitudes toward second-hand restraints

	Mean	Std. Dev
Second-hand child restraints are not safe	2.9	2.1
If you know the history of a second-hand child restraint it is as safe as a new one	4.0	1.6
I would feel guilty selling a second-hand child restraint	2.8	1.8
Using a second-hand child restraint is just not what you are “supposed” to do	2.7	1.9
Using a second-hand child restraint is no different from using a rental restraint	3.7	1.7

Note: Higher means indicate higher agreement with the item

4.4.8 Sources of information

The survey also asked participants about the sources of information they used when making restraint purchasing decisions, and this is presented in Figure 8. As the figure shows, stores were the most frequently used sources of information, followed by internet sites and/or friends and family.

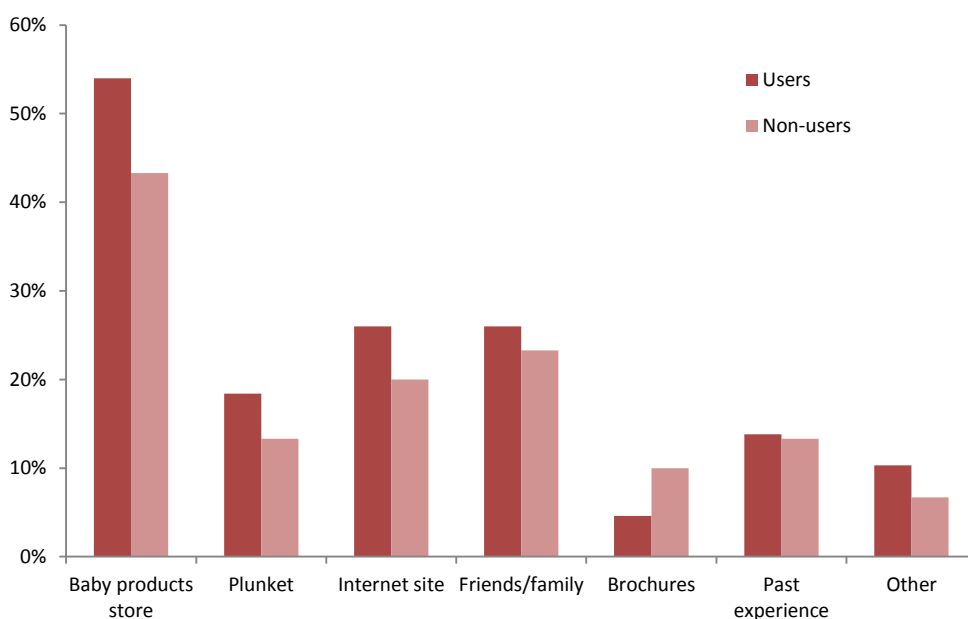


Figure 8. Sources of information used when purchasing a restraint (split by user group)

Table 18 shows the most important factor participants used to make their purchasing decision. Those observed using restraints most commonly reported that the safety rating was the most important factor they took into consideration when purchasing a restraint. In contrast, those in the “non-user” group most commonly reported that the cost was the most important factor they took into consideration.

Table 18. Most important factor in purchasing a restraint.

	Users	Non-users
Cost	17 (21.0%)	10 (40.0%)
Safety rating	24 (29.6%)	4 (16.0%)
Recommendation from other parents	2 (2.5%)	2 (8.0%)
Recommendation from an agency (e.g. Plunket)	1 (1.2%)	2 (8.0%)
Recommendation from a store	2 (2.5%)	1 (4.0%)
Other	11 (13.6%)	3 (12.0%)
Selected multiple factors	24 (29.6%)	3 (12.0%)
Total	81 (100.0%)	25 (100.0%)

For users, “other” important factors listed generally related to the practicality of the restraint. For example, several participants listed the length of usability of the restraint as important (N=3), while others listed factors such as its size and ease to install (N=1), ability to click straight into a pram (N=1) and practicality (N=1). Other factors listed included: recommendation from family (N=1), seeing the product for yourself (N=1), and the safety rating (N=1; this was provided as an option in the survey). The remaining two participants stated (a) they were borrowing a restraint and so did not buy one or (b) they “just needed one”.

Non-users listed the following important “other” factors: brand/cost/safety rating, looked comfortable and was given as a gift.

4.4.9 Future of restraints

In examining the prevalence of second-hand restraints, participants were also asked about what their plans for their restraints when they were no longer needed. Restraints generally have expiry dates of 5-10 years after their manufacturing date, and the majority of participants indicated that their seats will be around this age when they are no longer needed (52%). However approximately 40% will be younger than this when no longer needed. Only 7% will be definitely past their expiry when the current user no longer needs them.

When asked what they planned to do with their restraints when they no longer needed them, only 21% indicated they would throw them away. Twenty-six percent would give them to a friend or family member and 20% to charity. A further 23% are planning to sell their restraints. Other plans included holding on to them in case they were needed again, being unsure or waiting to make this decision based on the condition the restraints were in.

4.4.10 Summary of off-site questionnaire results

The off-site questionnaire completed by a sub-sample of participants examined the topics of interest in the intercept survey in greater detail, particularly around attitudes and knowledge about child restraints, their purchasing decisions and experiences with second-hand and rental scheme restraints.

The responses indicate that non-use of restraints is not related to restraint access as most participants regardless of how often they use them, do have enough restraints for their children. The majority of parents (86%) indicated there was never a time when they would not use a restraint; the main times when parents would consider this were when they were on a short trip, when the child was unwell, in a taxi (although it should be noted that this is one of the exceptions in the law which makes it legally acceptable), or when the y needed to prioritise the restraint for a smaller child.

Attitudes to restraints and knowledge about how to use them safely did not differ between users and non-users. These safety attitudes also transferred to the purchasing of other safety equipment with both groups equally likely to be intending to purchase other equipment such as child-proof locks. However it should be noted that those in the non-user group, this was more likely to be an intended purchase than one that had been made, perhaps due to budgeting constraints or prioritisation of spending.

Interestingly, the vast majority of both groups (95%) indicated that expense was the main reason other people don't use restraints, followed by hassle and confusion; these are quite different reasons to what they indicated as barriers for themselves. Participants indicated non-use is still prevalent among the community with 14% of users and 16% of non-users indicating they knew someone who didn't use restraints, most commonly due to the hassle, children not liking them or again the expense.

Around half of participants had used a rental scheme at some point; in most cases if they had not it was due to not needing to or preferring to buy their own restraints but 18% of non-users of restraints indicated they still felt these subsidised schemes were too expensive. Those who had used the services were also significantly more positive in their attitudes towards them. Almost 80% of both groups of participants were registered with Plunket.

In contrast to the intercept survey, there was no significant difference between the user groups in their use of second-hand restraints. Attitudes toward using second-hand restraints were generally positive, particularly when the history of the restraint is known. Most of those that had used second-hand restraints received them from friends or family but around 15% were purchased from strangers.

Finally, the survey showed that the majority of participants were getting all their information about choosing a restraint from the baby store they purchased it from, followed by the internet and acquaintances. For those that used restraints, safety was the main factor in their decision, while for non-users, it was based on cost.

5 Discussion

The overall restraint usage observed in this study is in line with expectations based on national surveys, with around 7% of children observed not in an appropriate child restraint. When also taking into consideration those drivers that self-reported they occasionally do not use restraints, or were identified by others as occasionally not using restraints, this rate rose to 16%. By using a mixed methods approach, this study allowed us to examine a wider pool of drivers with a range of use patterns.

The research received a high response rate to the intercept survey, which allowed some of the reasons for this non-use to be examined, both by examining what prevented non-users from using a restraint and what barriers all parents face, even if they do manage to address these barriers. Some of the most common perceived barriers and predictors of non-use are discussed in the following sections.

5.1.1 Expense

Child restraints are expensive and one of the most common areas of research has been around the effects of socio-economic status on use and the possibility of interventions to reduce cost to increase use. Previous research results have been mixed with some finding a link between socio-economic status and lower use (e.g. Wagenaar, Molnar & Margolis, 1988; Louis & Lewis, 1997), but other research finding mixed results on the impact of income on use (e.g. Pless & Roghmann, 1978; Gielen, Eriksen, Daltroy & Rost, 1984; Webb, Sanson-Fisher & Bowman, 1988b). Research that has tried to address economic pressures by trialling free or low cost hireage (e.g. Lindqvist, 1993; Sibley, Hunt & Harper, 2001) has been unsuccessful at increasing restraint use, so it was expected in this project that expense was not the only factor involved in non-use of restraints.

Those on lower household incomes in the study were not found to be less likely to use child restraints; however expense was seen as one of the hardest things about getting a child restraint by both users and non-users. The perception that expense is a barrier for others was common however, with 95% of both groups indicating they believed it reduced use by other parents. Therefore expense is perceived to be a barrier, however, as those that should be most sensitive to the additional expense (e.g. those that are on lower incomes) are not less likely to use restraints this appears to be a barrier that most overcome. In some cases this may be due to the economic assistance already available in the community (e.g. assistance from family, low cost rental schemes), or in other cases may just be through budgeting.

5.1.2 Restraint attitudes

Previous research has examined perceptions of child restraints and the effect of these perceptions on use. These attitudes have included the safety benefit (Foss, 1985) and comfort and ease of use (Inder & Geddis, 1990). Our sample generally believed in the safety benefits of child restraints regardless of their own use, and the majority indicated that there would never be a time when they would not use them. However there was some indication that they are seen as inconvenient in certain situations, for example on short trips, or when there is a demand for space or a restraint is not easily available. In line with previous research, some non-users indicated child discomfort or resistance as a barrier to use (e.g. Hoadley, Macrina & Peterson, 1981; Weber & Allen, 1982; Inder & Geddis, 1990).

The sample in this research were also largely safety conscious with the majority purchasing or intending to purchase other safety equipment in their homes such as child-proof locks, baby monitors and stair gates; this did not differ between users and non-users although there was a higher rate of intending to buy in the non-user group, perhaps again due to economic pressures requiring budgeting. As in previous research (Decina, Temple & Dorer, 1994) however, drivers who were not using child restraints were also more likely to not use their own seatbelt, so safe driver behaviour may be a better predictor of child restraint use than reported attitudes.

5.1.3 Restraint access

One of the best indicators in the previous literature of restraint use has been access to restraints; generally, if parents have a child restraint, they use it (Webb et al., 1988b; Louis & Lewis, 1997). This finding was not replicated in this study as almost all the participants (over 96% of those observed not using restraints) had a restraint at home even if they were not using it when surveyed or sometimes did not use it. One potential explanation for this difference is the age of the previous research dating from a period where restraint use was not as widespread as today.

5.1.4 Demography

Previous research has examined other elements of demography in addition to income. This has largely focussed on the age of the child rather than the driver, with findings that restraint use decreases with the age of the child (Department for Transport, 2003). The current research found no relationship with the age of the child; however the focus was on under 5 year old children and the largest drops in restraint use are at older ages. The current study also found a relationship with the number of children in the vehicle, with those travelling with more children more likely to have unrestrained children.

No other demographic factors have been shown to be reliably related to restraint use in previous research, and this study found no effect of driver age or the relationship between driver and child. However, this study did find effects of gender (males more likely to be observed or self-report not using restraints), and ethnicity (higher rates of non-use among Pacific Island drivers than other ethnicities) on restraint use.

5.2 Interventions and alternatives

In addition to examining predictors of and barriers to use, this study examined attitudes and experiences with some of the alternatives to purchasing restraints, on the basis that expense can be a barrier to uptake. This section examines the use of restraint rental schemes and second-hand restraints, as well as suggested information interventions.

5.2.1 Restraint rental schemes

Overall, around half the sample had used a restraint rental scheme such as the service provided by Plunket. Those who had used it generally rated it more highly than those that had not, and the vast majority were aware of the service regardless of whether they had used it. If participants hadn't used the service, it was because they didn't need to, although almost one-fifth still considered it to be expensive.

5.2.2 Second-hand restraints

The prevalence of use of second-hand restraints has not been often studied in previous research, perhaps due to the fact that the use of these restraints is generally discouraged due to safety concerns. Within our sample, participants generally held positive attitudes towards second-hand restraints, only rating them slightly less safe than new restraints. Over 70% of the sample either currently are or have previously used second-hand restraints, in most cases from friends or family. However up to 15% are using restraints that were purchased from strangers (through forums such as TradeMe) despite the common advice that if using a second-hand restraint it is important to know the history from someone you trust.

5.2.3 Information

The other key findings from this research relate to information around selecting the right restraint, and in what the driver's legal obligations are.

Parents find understanding what they need and finding the right restraint a challenge, and this was a commonly identified barrier in the study. If parents are not confident they have the right restraint, they may be less likely to use any restraint. Participants indicated they generally trusted advice from baby stores or talked to friends and family to determine what they need. The provision of clear, easy to understand information from a neutral source would therefore assist parents and may reduce this barrier.

Secondly, knowledge of the current legal requirements in the sample was poor, even though it did not differ between users and non-users. In most cases, participants believed there was no set age for needing to use restraints, believing that legal requirements were based on a height and weight measure; provided that the information they receive on what is the appropriate height and weight is correct, this may not be a cause for concern, however more could be done to clarify the law for parents.

5.3 Limitations

This study used both self-report of restraint use and a one-off observation of drivers. A mixed-methods approach was used because self-report of unacceptable or illegal behaviours from some people may not be accurate. This method also allows us to gain an understanding of whether the behaviour observed on one occasion is representative of most of the time the driver takes the child out.

There was some mismatch seen in the self-report of restraint use and that observed by the researchers (and by participants when nominating friends they knew do not use restraints on occasion), however, overall self-reports were reasonably accurate. Nelson (1996) previously observed that self-reports of undesirable behaviours can become more accurate (e.g. with less social desirability bias) when overall levels of the desirable behaviour in the population are higher. Therefore, as child restraint use rates are high in New Zealand, self-reported behaviour may be more reliable than for other behaviours that are less common. Nelson also notes that only self-reports of "always" undertaking a behaviour should be considered as doing so; for this project we therefore included those that suggested they "sometimes" undertake the behaviour as 'non-users' despite their occasional use.

As with all research on uncommon behaviours, this study had a relatively small sample of participants who do not use child restraints. However, the rates observed were in line with national averages and previous observations in the area studied. Also, the study was designed expecting this minority of responses, so examined the issues that affect all parents, regardless of whether they use a restraint or not. There were few significant differences between the two groups, suggesting that the barriers experienced by each may be the same, despite the difference in actions.

Finally, as mentioned in section 2.1, this research focussed on observed use with no examination of correct use (e.g. fitting to the vehicle, appropriate fit to the child). Previous research has suggested that the levels of correct use are far lower than use overall. Correct use was outside the scope of this research but warrants further investigation, and parental confusion over specific restraint needs found in this study suggests education may help in increasing correct use further.

6 Conclusions and Recommendations

This research was intentionally exploratory in nature to identify factors that could be related to restraint use in New Zealand. The following are possible areas of future research or interventions that could be implemented and evaluated based on this study's findings.

- Education on the benefits of restraint use was not identified as a need, as participants understood the safety benefits of restraints. However, one of the key barriers identified by parents was confusion over what restraint they needed. With the current information coming from stores or personal contacts, a clear, concise information source that is neutral and easily-accessed by all parents could assist in increasing use.
- This research was conducted prior to the announcement of the proposed law change (taking mandatory use from 5 to 7 years of age), but found support for the change. In addition to many parents believing the current law required restraint use until the age of 7, around one-third of those surveyed believed this should be the requirement. The most supported measure was based on weight and height; education on the new law could therefore emphasise the anatomical basis of the age proposed.
- While efforts to provide low-cost and subsidy services to parents for accessing restraints should remain, expense appears to be a perceived, rather than an actual barrier to restraint use. Rental schemes already offered are well-used by those that need them, so interventions to change these were not identified as a need in this study.
- The high demand for second-hand restraints recorded in this study indicates that this is an area worthy of further study. The common wisdom is that second-hand restraints should not be used, especially without a trusted history, although it appears this is happening in the community. It is therefore suggested that further work could be done evaluating whether the perceived risks of these restraints is justified (e.g. through physical testing of second-hand child restraints). This testing could also verify whether the current visual checks of older restraints that are offered can predict the actual safety of the restraint.
- Interventions could also be put in place, such as services to check second-hand restraints prior to sale to minimise any risks they may pose. Many participants indicated they would like to sell their restraint when they no longer need it which would provide a market of low-cost restraints for parents who would prefer to own their restraint, but regulation within this market could improve safety, as well as parental confidence in these restraints.

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8 Appendix A Intercept Questionnaire

CHILD RESTRAINT USE IN NEW ZEALAND SURVEY

Opus is conducting research for the Road Safety Trust into attitudes and barriers to Child Restraint use in New Zealand. Thank you for your participation in this research; your input will assist in the development of initiatives to increase child restraint use in the community.



1. How many children are travelling with you today?		_____		
2. How old are the children travelling with you today?		_____		
3. What is your relationship with the child(ren) you have with you today? (Please select all that apply)				
<input type="checkbox"/>	They are my own child(ren)	<input type="checkbox"/>	They are a relative's child(ren) that I care for regularly	
<input type="checkbox"/>	They are a relative's child(ren) that I care for occasionally	<input type="checkbox"/>	They are a friend's child(ren) that I care for regularly	
<input type="checkbox"/>	They are a friend's child(ren) that I care for occasionally	<input type="checkbox"/>	I am their paid carer/nanny	
<input type="checkbox"/>	Other (please specify) _____			
4. According to New Zealand law, until what age must a child be in an approved child restraint at all times?				
<input type="checkbox"/>	1 year of age	<input type="checkbox"/>	2 years of age	
<input type="checkbox"/>	5 years of age	<input type="checkbox"/>	7 years of age	
<input type="checkbox"/>	There is no set age, it is based on weight and height			
5. Until what age do YOU think you should legally have to use a child restraint?				
<input type="checkbox"/>	1 year of age	<input type="checkbox"/>	2 years of age	
<input type="checkbox"/>	5 years of age	<input type="checkbox"/>	7 years of age	
<input type="checkbox"/>	There shouldn't be a set age, it should be based on weight and height			
<input type="checkbox"/>	Other (please specify) _____			
6. How did you get the child restraints you currently have? (tick all that apply)				
<input type="checkbox"/>	I do not have any child restraints		<input type="checkbox"/>	I purchased them new for one of my children
<input type="checkbox"/>	I purchased them second hand for one of my children		<input type="checkbox"/>	I rented them from Plunket (or other rental scheme)
<input type="checkbox"/>	I borrowed them from a friend/family member		<input type="checkbox"/>	Other (please specify) _____
7. How often do you use child restraints?				
<input type="checkbox"/>	Never	<input type="checkbox"/>	Rarely	
<input type="checkbox"/>	Sometimes	<input type="checkbox"/>	All of the time	
8. What is the HARDEST thing about getting a child restraint?				
<input type="checkbox"/>	Knowing what type I needed		<input type="checkbox"/>	The expense
<input type="checkbox"/>	Understanding the process to get one		<input type="checkbox"/>	Time and hassle to organise
<input type="checkbox"/>	Other (please specify) _____			
9. If you're not using a child restraint today, what is the MAIN reason you are not using it?				
<input type="checkbox"/>	I am using a restraint today		<input type="checkbox"/>	I do not have any restraints
<input type="checkbox"/>	It was only a short trip		<input type="checkbox"/>	The restraint is in another car
<input type="checkbox"/>	My child doesn't like it		<input type="checkbox"/>	It's too much hassle
<input type="checkbox"/>	Other (please specify) _____			
10. How often do you as a driver or passenger wear your seatbelt?				
<input type="checkbox"/>	Never	<input type="checkbox"/>	Rarely	
<input type="checkbox"/>	Sometimes	<input type="checkbox"/>	All of the time	
11. How many vehicles do you have in your household?		_____		
12. Please indicate your gender		<input type="checkbox"/>	Male	
		<input type="checkbox"/>	Female	
13. Please indicate your ethnicity		_____		
14. Please indicate your age group				
<input type="checkbox"/>	Under 25	<input type="checkbox"/>	25-34	
<input type="checkbox"/>	35-44	<input type="checkbox"/>	45-54	
<input type="checkbox"/>	55-64	<input type="checkbox"/>	65 or older	
15. Please indicate your total household income				
<input type="checkbox"/>	Under \$10000	<input type="checkbox"/>	\$10-20000	
<input type="checkbox"/>	\$20-30000	<input type="checkbox"/>	\$30-40000	
<input type="checkbox"/>	\$40-50000	<input type="checkbox"/>	\$50-60000	
<input type="checkbox"/>	\$60-70000	<input type="checkbox"/>	\$70-80000	
<input type="checkbox"/>	\$80-90000	<input type="checkbox"/>	\$90-100000	
<input type="checkbox"/>	\$100-110000	<input type="checkbox"/>	\$110000 or more	

9 Appendix B Off-site Questionnaire

BARRIERS TO CHILD RESTRAINT USE IN NEW ZEALAND SURVEY

This survey examines attitudes towards and perceived barriers to the use of child restraints for New Zealand parents. The research is being undertaken with funding from the Road Safety Trust with the overall aim of increasing child restraint use in your community.

Please complete the following questions and return to us with your completed prize draw card in the freepost envelope provided to go into the draw for \$250 of MTA vouchers.



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ber»

If you no longer have the return envelope, please use any envelope and address to:

Barriers to Child Restraint Use Survey
Freepost 159851
Opus Central Laboratories
PO Box 30845
Lower Hutt 5040
Attention: Kate Mora

If you have any questions or comments about the survey, please contact

Kate Mora
 phone 0800 444 350
 email kate.mora@opus.co.nz

or use the comments section at the end of this survey

1.	How many children do you have?	
2.	How many of these children are under 5 years of age?	
3.	How many children under 5 years of age do you regularly drive?	
4.	How many child restraints do you have in your household?	

Please indicate your level of agreement with the following statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Not sure
5. My child(ren) find(s) child restraints uncomfortable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Child restraints are not very expensive to buy new	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If I have a crash a child restraint will save my child's life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Child restraints are too inconvenient to use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. If my child doesn't want to get in the child restraint it is just too hard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10.	Even if you do use child restraints regularly, are there any circumstances when you would allow your child not to use a child restraint? (tick all that apply)					
<input type="checkbox"/>	At night	<input type="checkbox"/>	On short trips			
<input type="checkbox"/>	When they are asleep	<input type="checkbox"/>	When travelling in someone else's vehicle			
<input type="checkbox"/>	When my child refuses	<input type="checkbox"/>	When there are not enough restraints for everyone			
<input type="checkbox"/>	When my child's friend(s) are in the car	<input type="checkbox"/>	There are no circumstances where I would let them not use a child restraint			
<input type="checkbox"/>	Other (please specify) _____					

	Please indicate your level of agreement with the following statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Not sure
11.	Once seats are over 10 years old they are no longer safe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	A child restraint is just as safe after a minor accident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	You can tell if a child restraint is safe by looking at it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	A child restraint should be thrown away after any accident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	A second hand restraint is better than no restraint at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.	My parents never used a child restraint and I am ok	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.	If I am taking other people's children in my car it is their parents' responsibility to ensure they are properly restrained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. Which of the following reasons do you believe may contribute to parents not using child restraints (tick all that apply)

<input type="checkbox"/> Confusion over what type of restraint they need	<input type="checkbox"/> Expense
<input type="checkbox"/> Too much hassle	<input type="checkbox"/> Having multiple vehicles
<input type="checkbox"/> They don't believe they make a safety difference	<input type="checkbox"/> Children don't like them
<input type="checkbox"/> Other (please specify) _____	

19. Do you personally know anyone that doesn't use child restraints? Yes No

20. What do you think is the MAIN reason they don't use child restraints?

<input type="checkbox"/> Confusion over what type of restraint they need	<input type="checkbox"/> Expense
<input type="checkbox"/> Too much hassle	<input type="checkbox"/> Having multiple vehicles
<input type="checkbox"/> They don't believe they make a safety difference	<input type="checkbox"/> Children don't like them
<input type="checkbox"/> Other (please specify) _____	

21. Have you ever used a child restraint rental scheme? E.g. such as that run through Plunket

Yes, Plunket's service Yes, another service No

	Please indicate your level of agreement with the following statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Not sure
22.	The restraints provided by rental services are of a high standard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23.	Using a restraint rental service is easy to organise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24.	You have to travel a lot to get restraints organised through the rental services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25.	Restraint rental services provide helpful assistance in making sure you have the right restraint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26.	You have to produce a lot of paper work to hire a restraint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

27. Are you registered with Plunket?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
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28. If you have never used one of these restraint rental services, which of the following reasons contributed to that decision? (tick all that apply)	
<input type="checkbox"/> I have used one of the rental schemes/not applicable	<input type="checkbox"/> I didn't need to as I already have restraints
<input type="checkbox"/> I didn't know it existed	<input type="checkbox"/> I preferred to buy my own
<input type="checkbox"/> Still too expensive	<input type="checkbox"/> Too much hassle involved
<input type="checkbox"/> I didn't want the responsibility of looking after the restraint	<input type="checkbox"/> I move locations too often
<input type="checkbox"/> I would never use a rental scheme	<input type="checkbox"/> Other (please specify) _____

29. Have you ever used a second hand child restraint? [By second hand we mean used by someone else's children, not your own older children, and not a rented seat]		
<input type="checkbox"/> Yes, I currently use one or more second hand child restraints	<input type="checkbox"/> Yes, I have previously used 1 or more second hand child restraints	<input type="checkbox"/> No, I have never used a second hand child restraint

30. Who did you get these second hand restraints from?	
<input type="checkbox"/> Not applicable	<input type="checkbox"/> A family member
<input type="checkbox"/> A friend	<input type="checkbox"/> A stranger
<input type="checkbox"/> Other (please specify) _____	

Please indicate your level of agreement with the following statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Not sure
31. Second hand child restraints are not safe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. If you know the history of a second hand child restraint it is as safe as a new one	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. I would feel guilty selling a second hand child restraint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. Using a second hand child restraint is just not what you're "supposed" to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Using a second hand child restraint is no different from using a rental child restraint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

36. How would you rate the safety of a second hand child restraint compared to a new child restraint?				
<input type="checkbox"/> Much worse	<input type="checkbox"/> Worse	<input type="checkbox"/> About the same	<input type="checkbox"/> Better	<input type="checkbox"/> Much better

37. If you do not use child restraints, which of the following reasons contributed to the decision? (tick all that apply)	
<input type="checkbox"/> I do use child restraints/not applicable	<input type="checkbox"/> Confusion over what type of restraint my child(ren) need(s)
<input type="checkbox"/> Too much hassle	<input type="checkbox"/> Having multiple vehicles
<input type="checkbox"/> I don't believe they make a safety difference	<input type="checkbox"/> My children don't like them
<input type="checkbox"/> Expense	<input type="checkbox"/> Other (please specify) _____

The next section of questions relates to purchasing a new child restraint.
 If you have EVER purchased a new child restraint, please complete Questions 38-41
 If you have NEVER purchased a new child restraint, please skip to the last section (from Question 42 onwards)

38. Thinking about the last child restraint you purchased, where did you get information about what restraint to buy? (tick

<input type="checkbox"/> Baby products store	<input type="checkbox"/> Plunket
<input type="checkbox"/> Internet sites	<input type="checkbox"/> Friends/family
<input type="checkbox"/> Brochures	<input type="checkbox"/> Past experience
<input type="checkbox"/> Other (please specify) _____	

39. Again, thinking about this last purchase, what was the most important factor in your decision?

<input type="checkbox"/> Cost	<input type="checkbox"/> Safety rating
<input type="checkbox"/> Recommendation from other parents	<input type="checkbox"/> Recommendation from an agency (e.g. Plunket)
<input type="checkbox"/> Recommendation from a store	<input type="checkbox"/> Other (please specify) _____

40. How old will the restraints you own be when you no longer need them?

<input type="checkbox"/> 1-2 years	<input type="checkbox"/> 2-5 years	<input type="checkbox"/> 5-10 years	<input type="checkbox"/> 10-15 years	<input type="checkbox"/> 15 years or more
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41. When you no longer need your child restraints, what do you intend to do with them?

<input type="checkbox"/> Throw them away	<input type="checkbox"/> Give them to a friend/family member
<input type="checkbox"/> Donate them to charity	<input type="checkbox"/> Sell them
<input type="checkbox"/> Other (please specify) _____	

Finally, we're interested in what other safety-related purchases you have made or are thinking of making for your child(ren)

Have you purchased any of the safety products in the list below, or are you intending to?	Have bought	Intend to buy	Do not intend to buy
42. Baby monitor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. Stair gate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. Child-proof locks for cupboards/drawers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. Electrical outlet plugs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. Walking harness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. Car reversing camera	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

General comments

Thank you for your participation in this study



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