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RUNNING TITLE: Parental barriers to seating children in the rear vehicle seat

A risky “treat”: exploring parental perceptions of the barriers to seating their children in the rear seats of passenger vehicles.

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# **A risky “treat”: exploring Australian parents’ perceptions of the barriers to seating their children in the rear seats of passenger vehicles.**

## **Abstract**

**Background:** Sitting in the rear seat of a vehicle reduces children’s risk of injury or death by 35% or more in the event of a crash, compared to sitting in the front. As road trauma is a leading cause of child morbidity and mortality in highly motorised nations, even in countries where restraint use is high, encouraging parents to place children in the rear seats of vehicles offers a low-cost avenue to improving children’s overall health. However, we know little about the factors that affect parents’ decisions about seating position.

**Objective:** To explore parental perceptions of barriers to placing their children in the rear seat of passenger vehicles whenever possible.

**Design and subjects:** Focus group discussions were held with urban parent-drivers to elicit their concerns about children’s car safety and barriers to rear seat use.

**Results:** Most parents had a rule that children should sit in the rear seat. Parents said they relaxed these rules for a variety of reasons including: social pressure; perceptions of the trip as short; because children regard sitting in the front seat as a “treat”. Parenting style, child cooperativeness, social pressure and inability to justify the risk of injury were identified as barriers to rear seat travel. .

**Conclusions:** Effective interventions to increase the proportion of children travelling in the rear seat should address parents’ experiences of pressure to relax seating rules and risk perception as well as provide strategies that support sound parental safety decisions.

## **Key Points**

- Road trauma is a leading cause of death and disability in children in highly motorised nations yet can be reduced by encouraging parents to place children in the rear seat for every trip
- Little is known about parental decisions in relation to children's seating position, but these do not appear to be based on safety knowledge or space considerations
- Parents often have a family rule that children should travel in the rear seat, yet relax this rule for various reasons including: pressure from children to sit in the front as a "treat"; social pressure; and perceptions of short trips as safe
- Barriers to placing children in the rear seat for every trip were identified as: parenting style, child cooperativeness; social pressures; and decay in parental knowledge about safety issues pertaining to older children

Despite considerable advances in road safety, road trauma is still the leading cause of death and disability for children in highly motorised countries such as the US, Canada, New Zealand and Australia.[1-3]

Though in Australia mandating the use of restraints for children appears to have been very effective, with surveys showing around 90% of child passengers wear a restraint of some kind, increasing the level of compliance may prove costly and difficult to achieve.[4] This levelling off of safety gains as public health measures to increase restraint use reach their maximum effectiveness is likely to be an issue for other highly motorised countries too. In order to make substantial gains in safety, other, more cost-effective avenues may need to be explored.

One simple, low-cost method to improve children's safety in cars is to restrain them in the rear seat rather than the front whenever this is possible. For children, US studies have established that sitting in the rear seat of a vehicle (without airbags) is about 35% safer than sitting in the front in the event of a crash.[5-7] Analyses of data from large US crash-databases such as the Fatality Analysis Reporting System have revealed that restrained children sitting in the front seat account for a much higher percentage of child fatalities than those sitting in the rear seat.[6] Similarly, one recent Australian in-depth study which examined injuries to children aged 2-8 years presenting to two hospital emergency departments after a crash found that children who were sitting in the front seat of the vehicle were two and a half times more likely to suffer serious injury than those children occupying rear seats.[8] Moreover, seating position and restraint use have an interactive effect on safety: wearing a restraint and sitting in the rear seat provides the best protection of all.[9]

Exposure of children to travelling in the front seat appears to vary across countries.[10] Studies in the US have estimated that 25-40% of vehicles carrying

children carry them in the front seat, and estimates for Australia suggest the proportion there may be higher.[11] Moreover, this practice is not prohibited in Australia except for infants under 12 months old. Even for countries where exposure rates are lower than for the US, encouraging children to travel in the rear seat involves no cost or technology and thus represents an easy solution with considerable health and safety benefits for a vulnerable road user group.

While there appears to be considerable potential to improve children's safety by encouraging parents to buckle them in the rear seat, we have little information as to the factors that affect parents' decisions about where to sit their children. This information is vital to designing effective interventions. US based studies suggest that safety knowledge is not the primary factor.[12] Similarly, parental decisions do not seem to be based on whether there is a vacant rear seat: Australian and US observational surveys show that around 80% of vehicles with children in the front seat have at least one available seat in the rear.[11, 13]

## **METHOD**

This study used an interpretive phenomenological qualitative approach with focus groups as the method for gathering material. Qualitative approaches have not been used extensively in injury research, though they are becoming more common in health research areas such as nursing, occupational health and safety, and health promotion.[14-16] Qualitative methods may be particularly appropriate to prevention efforts because they can provide valuable insight into the antecedents of injury that are necessary to designing effective interventions.[17] Focus groups were chosen for two reasons. Firstly, they allow greater access to participants' beliefs, attitudes and experiences than survey or observational methods.[18, 19] These psychological

factors are likely to be critical to understanding the barriers to placing children in the rear seats of vehicles when travelling. Though in-depth interviews also allow access to detailed information about experiences, these are more resource intensive. Secondly, focus groups are often useful in the early stages of exploration of a phenomenon because they allow important unanticipated dimensions to emerge through the social context and interaction of participants.[19]

### **Recruitment**

Parents of children aged 12 years and under who regularly drive their children in passenger vehicles (with a rear seat) were recruited by personal approach in the open-air car-parks of two urban shopping centres primarily retailing food and grocery items in Brisbane, Queensland. These centres were selected on the basis of the socioeconomic indicators of the surrounding suburbs (one in an upper SES area; one drawing on lower SES suburbs).[20] Initially it was hoped that groups might be able to be separated on the basis of socioeconomic status, but this did not prove practical, and the resulting groups consisted of parents from a mixture of SES statuses. Discussion groups were planned for both day and evening time slots in order to allow both employed and non-employed parents to participate. Group size was deliberately limited to a maximum of 8 parents in order make it easier for the facilitator to establish rapport with the group and to encourage conversational relationships between participants. Groups of this size have been shown to be effective in generating useful information.[21]

Except for one group where notes were taken, discussions were transcribed by a professional stenographer in order to allow accurate recall of exact terms used by parents.[22] Participants were offered a \$30 gift voucher in acknowledgement of

their time. Ethics approval was granted by QUT's University Human Research Ethics Committee.

The discussions were prefaced by a general introduction to the facilitator, the study, its purpose and the procedure, during which written consent to record the discussion was sought. In the introduction, the facilitator emphasised the under-developed state of the field, saying that this made parents' understanding and experience very important to the research. They were encouraged to talk to each other as part of generating this information and invited to introduce themselves briefly. Beginning in this way was designed to minimise parents' perceptions of the facilitator as an expert as well as to establish a relaxed environment where parents would feel comfortable with one another and with the facilitator. Largely this appeared to be effective, though it was clear that some parents had agreed to attend the session because they were keen to ask some questions themselves, and may thus have initially regarded the facilitator as a source of expert knowledge. When these parents posed their questions (for example, about the existing legislation in relation to child restraints) in most instances other members of the group supplied the answers rather than the facilitator.

In order to encourage contribution and allow emergence of unanticipated material, the discussion schedule was only semi-structured. It began with the opening question: "What do you think are the most important issues when it comes to your children's safety in the car?" which was designed to encourage conversation amongst participants as well as to elicit the safety concerns uppermost in their minds. The schedule then allowed for probe questions to be used to elaborate the themes and interests emerging in each group.

It was anticipated that one focus issue, children occupying the front seat and parents' views on this, would arise naturally in the course of discussing children, safety and car experiences, and this did occur in three of the five groups. In the other two groups, after allowing discussion around themes of interest to the group to proceed for some time, the facilitator asked about front seating. Questions were also posed in relation to the barriers to getting children to sit in the rear seat and parents' suggestions or strategies to overcome these.

Analysis of the transcripts and discussion notes was carried out using QSR NVivo 2.0© to allow storage and display of the material.[23] Transcripts were subjected to thematic analysis, following the process described by van Manen where key words and phrases that seem particularly revealing about the issues are identified and then grouped into themes.[24] Analysis of the transcripts began after the first discussion and was on-going. The descriptions offered in relation to the research interests became repetitive by the end of the fifth discussion, with no new information in relation to these appearing, and hence it was deemed that saturation of these themes had been reached.

## **FINDINGS**

A total of 24 parents (21 mothers and 3 fathers) participated in five separate groups which were all facilitated by the author. Groups consisted of 4 to 7 parents, with discussions lasting about an hour. Consistent with the population from which they were drawn (urban Queensland), most of the parents were Caucasian. The majority of these parents were aged between 30 and 39 years (16/24), had at least some post secondary education (20/24) and were full time parents (10/24), with two or three children (15/24). Annual family income ranged from under AUSS\$30,000 to

over \$100,000 with around half (13/24) parents indicating family income greater than \$60,000 pa. (consistent with national figures for median income for couple-families with children).[20] There were 2 step families and at least two sole parent families.

Though data on children’s restraint use and seating location was not specifically gathered in this study, figures from an earlier observational study conducted in the same suburbs from which parents for this study were drawn are available (see Tables 1 and 2). The methodology and preliminary results for this earlier study have been described elsewhere.[11] The final results from the earlier study were comprised of a total of 1643 passenger vehicles carrying 2507 children. Half these vehicles (816/1643) had a child occupying the front passenger seat. As can be seen in Table 1, the majority of those children sitting in the front seat appeared to be aged 7 years or older (91%) and were restrained in adult seat belts (95%). Rear seated children (Table 2) tended to be younger and wore a greater variety of restraints. The seating location and restraints worn by children of the parents in the discussion groups are assumed to be distributed similarly.

**Table 1: Restraint use for children aged 12 years and under seated in the front seat of urban passenger vehicles (N = 1643) based on road-side observations\***

<i>Restraint type</i>	<i>FFCR or BPBooster**</i>	<i>Adult seat belt</i>	<i>No restraint***</i>	<i>Totals</i>
	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>
<i>Age</i>				
0-6mths	-	-	-	-
7mths-2 years	-	1 (33.3)	2 (66.7)	3 (100)
3-6 years	6 (7.7)	65 (83.3)	7 (9.0)	78 (100)
7-10 years	-	433 (96.9)	14 (3.1)	447 (100)
11-12 years	-	274 (96.5)	10 (3.5)	284 (100)
	6	773	33	812

\*Note: Only those vehicles with rear seats were included. Only those vehicles with no adult or teenaged passengers occupying the front passenger seat were included. Child age was estimated based on seated height.

\*\*Top tethered Forward facing child restraints (FFCR) suitable for children 8-18kg (18-40 lbs) and Belt Positioning Booster seats (BPB) could not be distinguished from each other and were grouped together.

\*\*\*For 22 children (3% of front seated children) restraint status could not be determined. These have been grouped with “no restraint” as Australian vehicles are required to have lap-sash belts fitted in the front outer passenger position and thus children could not have been wearing lap-only belts.

**Table 2: Restraint use for children aged 12 years and under seated in the rear seat of urban passenger vehicles (N = 1643) based on road-side observations\***

<i>Restraint type</i>	<i>Rear facing infant restraint or Capsule</i> <i>n (%)</i>	<i>FFCR or BPBooster**</i> <i>n (%)</i>	<i>Adult seat belt</i> <i>n (%)</i>	<i>No restraint</i> <i>n (%)</i>	<i>Totals</i>
<i>Age</i>					
0-6mths	60 (98.4)	1 (1.6)	-	-	61 (100)
7mths-2 years	4 (1.5)	245 (93.9)	10 (3.8)	2 (0.8)	261 (100)
3-6 years	-	435 (68.0)	182 (28.4)	23 (3.6)	640 (100)
7-12 years	-	39 (6.1)	576 (90.0)	25 (3.9)	640 (100)
	64	720	768	50	1602

\*Note: For 93 children (5% of rear seated children), primarily sitting in the middle rear seat, restraint status could not be observed. These children may have been wearing lap belts, and hence have been omitted from the figures rather than being grouped with unrestrained children.

\*\*Top tethered Forward facing child restraints (FFCR) suitable for children 8-18kgs (18-40 lbs) and Belt Positioning booster seats (BPB) could not be distinguished from each other and were grouped together

## **Child restraints**

In response to the opening question, in four of the five groups the first issue raised was about making sure all children were restrained properly. However, in relation to this there was considerable concern expressed by parents about child restraints, their degree of fit and whether they were as safe as they were purported to be. Parents stated doubts about their safety, referring to the extent to which restraints could be moved around in the vehicle once they were supposedly secured. These concerns were mostly about the restraints for children who had outgrown the rear-facing restraints and seemed to arise for participants when children transitioned from one type of restraint into the next: “although it’s [approved forward-facing child restraint] attached properly...you can grab the side of it and you can wriggle it around and they [registered restraint-fitter she consulted] say it’s fine but to me...I just wonder how safe they’d be in a seat of that sort...I’d like it to be firmer in the car”.

Belt-positioning booster seats in particular were judged as untrustworthy: “I don’t think they are safe-they are more dangerous than a car seat [forward-facing child restraint]” and from another mother: “I wasn’t thinking of safety issues [when I bought it] because a booster seat is just a bit of foam that’s got nothing”. Possibly for this reason, many parents said they had moved their children into seat belts at age 5 or 6 years.

### **Family rules**

Generally parents were aware of the extra risks inherent in sitting in the front seat and most parents indicated that they had a rule forbidding their younger children from sitting there. For some families, rule enforcement effectively dealt with front seating issues.

However, other parents reported experiencing pressure as their children grew, or they began transporting the older children of friends or relatives, to relax or abandon their seating rules. These parents were uncomfortable about allowing children to sit in the front seat, but were finding social norms and pressure from their children harder to resist as children got older. A common response to this was to search for official backing for their stance, since most parents believed that children were not legally permitted to sit in the front seat until a certain age. Among the sources parents reported consulting were police, motoring associations, the ambulance service and the department of transport. Parents were surprised and frustrated when they discovered that Australian legislation does not cover seating position except for infants under 12 months old, who must be restrained in the rear seat in an approved restraint.

There were at least two distinct ways that parents reported dealing with this absence of legislation. In the first, parents simply assumed responsibility and reasserted their current rules or changed them to suit: “I used to make it until they turned eight...[and when they turned eight] then I changed the rule and I said “well you can only get in the front if there are no seats in the back”...and I have just said to [my son] “the children’s place is in the back””.

The remaining parents were more ambivalent and less decisive about what to do. These parents were looking for guidance in making the decision: “I really wanted it [the brochure she obtained] to say “you can’t put children in the front seat if they are under 5 or 8 [years] or whatever”.

Parents in every group believed that clearer legislation that encompassed front seating would be useful in guiding parents, encouraging safer behaviours and countering the arguments from their children: “if they can introduce some kind of legislation that says if you have a spare seat in the back until they are this age and this weight [then] that’s where they go” and “the [other] mums this morning I was speaking to said they would be so happy if somebody said “here is the law: you have to be 12, you have to be 45 kilos; you have to do this” because then its simple and they can say to their kids “this is the law””.

Parents reported that they voluntarily relaxed their rules for reasons that they saw as legitimate. These included separating children who were fighting, and in order to fit in with other drivers with different rules. Parents also said that occasionally they would allow a child to travel in the front seat as a special “treat” or because the trip was perceived as a short one. Another reason appeared to be a desire to support children in their maturation and perceiving the move to the front seat as part of this: “there’s a sense that your kid is growing up and you kind of want to -- it feels good

when they're taking their little steps like that and I guess subconsciously you weaken".

### **Barriers to seating children in the rear seat**

Similarly to findings reported by others in relation to booster seat use,[12, 25, 26] parenting style was identified as a barrier to encouraging consistent rear seat positions for children: "[some] parents just let their children make the rules...there are times when you do that but there's times when their safety is at risk [then] you just make the rules". This was particularly manifest for some parents in difficulty countering the arguments mounted by their children on the basis of safety alone. As one parent, whose children were allowed to sit in front seat, put it: "My daughter says "well you do it [sit in the front] so why can't I?" [if I say] "its not safe" [she'll say] "well you do it". What do you say then?" Even parents who did not relent highlighted that the apparently small risk of a crash, and of injury resulting from it, made rear seating difficult to justify to children: "it's a 'just in case', you know...you haven't had an accident so far; you're just driving down to the school...its hard for them [12 and 14 year old daughters] to understand [why I say no]".

Other factors that parents identified as barriers were: the personality (and therefore level of cooperation) of the child; inconsistency in the rules set by different adults in the same family; social pressures exerted by children's peers and other parents; and decay in parents' knowledge about safety issues as children matured.

### **DISCUSSION AND IMPLICATIONS FOR PREVENTION**

Although allowing children to sit in the front seat was not uppermost in their minds when it came to car safety, the parents in these groups had given the issue a lot

of thought and many were concerned about how to address it. In Australia, top tethers are mandatory for all rear-facing infant restraints and for forward facing child restraints that suit children up to 18kgs (40 pounds). Essentially this means that children up to the age when parents stop using these types of restraints are restrained in the rear seat because the anchor points/bolts for these tethers are virtually exclusively located in the rear and vehicle design rules govern the anchor specifications. A high proportion of young children use these restraints in Australia, which means parents don't really have to think about where to seat children until they reach about age 3½. As indicated, parents commonly set a family rule about what age or stage children should be before they could be permitted to sit in the front seat.

However, these were less effective as children aged and parents began to experience social and family pressures to relax or abandon their very sound rules about seating position. These pressures seemed to affect all parents. Though some parents in this study were able to maintain their rules in spite of these pressures, and even on discovery that rear seating for children is not mandated, others were not so assertive. For this second group, invoking safety concerns did not seem to be a sufficient counter argument by itself. Parents in this group expressed the view that they would find it much easier to counter arguments from children and others if they could refer to some external authority, such as well defined legislation. Interventions should attempt to equip parents with ways to counter arguments relating to their safety choices as well as support them in their parenting role.

Parental perceptions of risk, especially in relation to allowing children to sit in the front seat because the length of the trip is short or because children perceive it as a "treat", seem worthy of specific attention. This is particularly important in light of

recent findings that it is short, routine trips, such as school travel, that are the most likely to result in injury to children.[27]

Mistrust of child-specific restraints is a concern and interventions should address this by informing and reassuring parents of the safety benefits conferred by these devices, particularly in comparison to adult seat belts, as well as affirming their concern to ensure good fit.

The period of pre-school and early school-age (4-8 years old) may be the optimal time for intervention to encourage parents to keep children in the rear seat as this stage marks the transition to booster seats for many children. It is also the time most likely to coincide with increased pressure to relax seating rules and thus a time when parents may be most in need of affirmation and support.

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