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The influence of parental health beliefs on child restraint practices in a regional centre in Queensland

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Abstract

Since March 2010 in Queensland, legislation has specified the type of restraint and seating row for child passengers under 7 years according to age. The following study explored regional parents' child restraint practices and the influence of their health beliefs over these. A brief intercept interview was verbally administered to a convenience sample of parent-drivers (n = 123) in Toowoomba in February 2010, after the announcement of changes to legislation but prior to enforcement. Parents who agreed to be followed-up were then reinterviewed after the enforcement (May-June 2010). The Health Beliefs Model was used to gauge beliefs about susceptibility to crashing, children being injured in a crash, and likely severity of injuries. Self-efficacy and perceptions about barriers to, and benefits of, using age-appropriate restraints with children, were also assessed. Results: There were very high levels of rear seating reported for children (initial interview 91%; follow-up 100%). Dedicated child restraint use was 96.9% at initial interview, though 11% were deemed inappropriate for the child's age. Self-reported restraint practices for children under 7 were used to categorise parental practices into 'Appropriate' (all children in age-appropriate restraint and rear seat) or 'Inappropriate' (≥ 1 child inappropriately restrained). 94% of parents were aware of the legislation, but only around one third gave accurate descriptions of the requirements. However, 89% of parents were deemed to have 'Appropriate' restraint practices. Parents with 'Inappropriate' practices were significantly more likely than those with 'Appropriate' practices to disagree that child restraints provide better protection for children in a crash than adult seatbelts. For self-efficacy, parents with 'Appropriate' practices were more likely than those with 'Inappropriate' practices to report being 'completely confident' about installing child restraints. The results suggest that efforts to increase the level of appropriate restraint should attempt to better inform them about the superior protection offered by child restraints compared with seat belts for children.

Keywords: child restraints; legislation; Health Beliefs Model

1 Introduction

The Health Belief Model (Becker, 1974) postulates that an individual's beliefs about his or her relative susceptibility to a disease or an adverse health outcome is related to the propensity to act in ways that protect against this possibility (Glanz, Lewis, & Rimer, 2002; Rosenstock, 1974). The model has been used extensively in health promotion research to inform the design of interventions aimed at increasing healthy behaviours such as use of bicycle helmets (Ross, Ross, Rahman, & Cataldo, 2010) and condom use (Downing-Matibag & Geisinger, 2009). The following study applied the HBM to parental child car restraint practices in order to examine whether the constructs within the model might offer some avenues for future intervention to improve the level of age-appropriate child car restraint use.

In Australia, the base level of child restraint use has been high for some three decades and arguably this is a generalised effect from restraint legislation for all passengers, something which has been mandated since the 1970s in Australia. However, a growing body of international and Australian research has highlighted that many children are restrained in seatbelts at ages too early to offer optimal

protection (Durbin, Elliott & Winston, 2003; Koppel, Charlton, Fitzharris, Congiu, & Fildes; Rice, Anderson, & Lee, 2009; Winston, Durbin, Kallan, & Moll, 2000). In recognition of this, the Australian Road Rules (ARR), on which each of the States and Territories base their legislation, was changed in relation to children's restraints (NTC, 2008). Previously the legislation only specified the type of restraint for infants under 12 months, and thus children from 1 year old could be legally be restrained in an adult belt. Though most parents did not do this, the lack of guidance from the legislation in relation to children beyond 1 year old was regarded as contributing to premature use of adult belts with children who had outgrown their toddler restraints. The amendments now address this issue and specify the type of restraint and seating row for children up to the child's 7th birthday. Infants must still be restrained in Australian Standards approved rear-facing infant restraints as previously, but children aged 1 year or more must now travel in an approved forward-facing child seat until at least the 4th birthday, after which they must be restrained in a booster seat until at least 7 years old. These changes bring the specification more into line with safer practices as determined by research into lab-based and real-world crash performance of restraints (NTC, 2008). In September 2009 the Queensland government announced that legislation for child passengers would be amended in line with the ARR. This amendment took effect in March 2010 (Office of Queensland Parliamentary Council, 2011).

While legislation can be helpful in providing guidance as to the safe behaviours, it is of little use unless compliance levels improve. One influence on compliance may be the level of understanding of the reason for mandating particular behaviours within the target groups. Evaluation of the impact of legislative intervention is valuable in estimating the level of effectiveness and level of understanding or acceptance of the changes among those it targets. In addition, evaluation can be used to identify possibilities for other measures to support legislative interventions.

As part of a larger study to examine the effectiveness of the amendments to child restraint legislation in Queensland, a brief intercept interview study was undertaken with a convenience sample of parents ($n = 125$) of children in the age group targeted by the legislation (under 7 years). The larger study consisted of an observational component as well as the intercept interview component. For this observational component, data on children's seating positions and the types of restraints worn were collected at three time points: prior to the announcement of the intended changes to legislation (2008); after the announcement but before enactment or any enforcement activities began; and after enactment and commencement of enforcement. The second component, interviews with parents, was aimed at exploring parental awareness of the changes to the legislation as well as any relationship between parental health beliefs and their self-reported restraint practices. In addition there was an interest in identifying potential barriers to parental compliance with the changes. Data for this component was collected at the second two time points (described further below).

In keeping with the evaluation focus of the overall study, it was hypothesised that the proportions of children travelling in the front seats of cars would decrease (H1), while the proportion restrained in age-appropriate restraints would increase (H2), with the enforcement of the legislation. These two hypotheses were primarily addressed through the data from the observational component, results for which have previously been published (see Johns, Lennon & Haworth, in press) and will not be reported here. However, parental self-reports were also used to examine the effect of the legislation on self-reported restraint use. Hypotheses related to the psychosocial influences on parental behaviour were also posed. It was anticipated that parents who reported greater perceptions of susceptibility to crashing (H3) or of severity of resulting injury (H4) would be more likely to use an age-appropriate restraint with their children and to seat children in the rear seat. Parents who perceive the benefits of child restraints (H5) or parents who perceive fewer barriers (H6) were hypothesised as more likely to use age-appropriate restraints with their children. Lastly, parents who gave higher ratings of their self-efficacy in relation to child restraints were hypothesised as more likely to report appropriately seating and restraining their children (H7). This paper focuses on the results from the parent interviews.

2. Method

Data for the interview component of the study was collected in Toowoomba, a regional Queensland city of around 150,000 people, at two time points: after announcement that the legislation was changing but prior to any enforcement (February 2010); and followed up 3 months after enforcement began. A regional city was chosen for two reasons. The first is that other research has highlighted that restraint use is generally at lower levels in regional areas in Queensland, and thus there was an interest in whether this is mirrored in the levels of restraint use with children. The second reason is that around a third of the state's population lives in regional areas, and so an important proportion of children is represented by these locations.

A total of 123 parents of 194 children provided sufficiently complete data for analysis (2 sets of responses were excluded due to all children being older than the target age). Parents were recruited from an undercover shopping centre in the Central Business District of Toowoomba (n = 115 parents) and also from one child care centre (n = 8 parents). Eligibility criteria were: parent of at least 1 child in the target age range (0- under 7 years); drive the child at least once per week in a vehicle with a rear seat; resident of Toowoomba. Participating parents gave verbal consent to answering the questions and were asked to provide contact details for later telephone follow-up. Although almost all parents consented to be followed up and provided contact details, only half were later able to be contacted, resulting in only 62 parents completing the follow up telephone interview, 60 parents being lost to follow up.

2.1 Materials: the questionnaire

At the initial interview parents were asked a total of 42 questions. These were designed to collect child age, shirt size (to gauge whether the child was larger, smaller or average for age), usual seating position and whether the child had been permitted to travel in front row at any time during previous 6 months, type of restraint usually used (rear-facing, forward-facing child seat, booster seat, child H harness, adult seat belt used without a booster, unrestrained) for each child under 7 years (up to a maximum of three children).

Thirteen questions designed to tap the constructs of the HBM were used to explore the relationship between parental health beliefs and their self-reported behaviour. Three questions were related to the perceived susceptibility and perceived severity constructs and asked about parental perceptions of their likelihood of being involved in a crash while their children were in the car (1 = 'Very unlikely' to 7 = 'Very likely'), of whether their children would be hurt if they did have a crash (yes, no), and the severity of injury, if any, (1 = no injury, 2 = minor injury-treat at home, 3 = moderate injury-see a doctor, 4 = moderately-severe injury-go to hospital, 5 = severe-call ambulance at the crash). Four questions were related to the perceived benefits of child restraints and six were related to perceived barriers. HBM item wording is displayed in Table 1.

In addition to HBM constructs, there was an interest in parental self-efficacy and so parents were asked to indicate their agreement that they were confident about choosing, obtaining, and installing the appropriate restraint as well as ensuring that the child wore the restraint (responded for each child). Finally, a set of nine questions were asked in relation to parental awareness of the legislation and the changes to it (eg. "is there a law for children travelling in cars?" "Has the law changed in the last year?"), as well as perceptions about the likelihood that police would stop someone who was breaking the child restraint law or who was not wearing a restraint themselves. At follow up parents who could be contacted were re-interviewed by telephone using the same questions as those from the initial interview (with the exception of the parent demographic questions).

3. Results

A total of 123 parents (out of 203 eligible parents approached, response rate 61%) of 194 children in the target age range agreed to participate in the initial interview. The majority of parents were mothers (101, 82.1%), aged 21-40 years (105, 85.4%), married/defacto (88, 71.5%) and had education to

completion of high school level only (69, 56.0%). Although 111 agreed to the follow up, only 62 parents (of 96 target aged children) were able to be contacted at the second interview time, 60 being lost to follow up. Comparisons of the two groups of parents revealed no statistically significant differences between those parents who were, and those who were not, able to be followed up on the basis of demographics of age, gender, income, or highest educational attainment.

Of the 194 children reported on at initial interview, 62 (32.0%) were aged 12 months or younger, 64 (33.0%) were aged 2-3 years (that is, 13 months to under 4 years), and 68 (35.0%) were aged 4- 6 years (that is, 4 years to under 7 years).

Table 1: Item wording and response options for items tapping constructs of the HBM and self-efficacy

Item wording and HBM construct	Response options
<i>Perceived susceptibility</i>	
When you think about your ordinary, everyday driving with the children in the car, how likely are you to be in a car crash?	1= Very unlikely to 7 = Very likely
<i>Perceived severity</i>	
If you had a crash with the children in the car, do you think they would be hurt?	Yes, No
How badly do you think they would be hurt?	1 = no injury, 2 = minor injury-treat at home, 3 = moderate injury-see a doctor, 4 = moderately-severe injury-go to hospital, 5 = severe-call ambulance at the crash
<i>Perceived benefits</i>	
If you place a child in the recommended restraint for his/her age, how likely is it that you would:	
Protect the child against injury in a crash	1= Very unlikely to 7 = Very likely
Protect the child against death in a crash	1= Very unlikely to 7 = Very likely
Avoid a fine	1= Very unlikely to 7 = Very likely
Avoid demerit points	1= Very unlikely to 7 = Very likely
<i>Perceived barriers</i>	
How much do you agree or disagree with the following statements?	
Child restraints are too expensive	1 = Strongly disagree to 7 = Strongly agree
Child restraints are only necessary on long trips (reverse coded)	1 = Strongly disagree to 7 = Strongly agree
You cannot trust the retailer is recommending an appropriate restraint for safety, rather than an expensive restraint for profit	1 = Strongly disagree to 7 = Strongly agree
You cannot fit three car seats on the back seat of your car if you needed to	1 = Strongly disagree to 7 = Strongly agree
Child restraints provide better protection in a crash than adult seatbelts for children	1 = Strongly disagree to 7 = Strongly agree
Children are just as safe in the front seat as in the back seat (reverse coded)	1 = Strongly disagree to 7 = Strongly agree
<i>Self-efficacy</i>	
How much do you agree or disagree that:	
You are confident you can borrow or purchase the correct restraint	1 = Strongly disagree to 7 = Strongly agree
You are confident you can choose the correct restraint	1 = Strongly disagree to 7 = Strongly agree
You are confident you can install the restraint for [name] in your car correctly	1 = Strongly disagree to 7 = Strongly agree
You are confident you can make sure [name] wears the restraint	1 = Strongly disagree to 7 = Strongly agree

3.1 Seating position and type of restraint

Almost all children were reported as usually seated in the rear seat at initial interview (99%, whole sample; 100% followed up sample). Parents were also asked how often (“never”, “only once”, “once a month”, “once a week”, “most of the time”, “always”) they had permitted their children to travel in the front seat during the previous six months. For this question, 3 of the followed-up children (3.1%) at initial interview, and 2 children (2.0%) at follow-up had travelled in the front seat “always” or “most of the time”. This difference was not statistically significant ($p = .07$) thus Hypothesis 1, that the proportions of children travelling in the front seats of cars would decrease, was not supported. However, the very high base levels of reported rear seating meant detection of changes was not possible.

High proportions of the children were also reported as being restrained in a dedicated child restraint at the initial interview. For the whole sample, 96.9% (189/194) of the children were restrained in dedicated restraints. However, examining the type of restraint used against the type recommended for each child's age revealed that for 11.3% (22 children) these were inappropriate. Thus a total of 14.4% of the children at initial interview were being restrained in a manner that was non-compliant under the new legislation.

For the followed up sample at initial interview, 87.5% (84/96) of the children were reported as restrained in the most appropriate restraint type and seating position for age. At follow up, this proportion had dropped to 77.1% (74/96) but this was not a statistically significant difference. Thus there was also no support for the second hypothesis, that the proportion of children restrained in age-appropriate restraints would increase with the enforcement of the legislation (that is, at follow-up).

In order to assess any relationship between the psychosocial variables and parental self-reported behaviours, a new dichotomous variable that classified parental restraint practices was formed. Parents who reported an appropriate seating position and type of restraint for all children in the target age range were classified as having 'Appropriate' restraint practices. Otherwise restraint practices were classified as 'Inappropriate'. On this basis, 80.5% (99/123) of the whole sample of parents were deemed to have 'Appropriate' practices, while this proportion was 72.6% (45/62) of the followed up parents.

The remaining analysis of responses to the items tapping the HBM constructs is for the whole parent sample at initial interview, thus $n = 123$.

3.2 Parental perceptions of susceptibility to adverse outcomes

Two items were used to gauge parental perceptions in relation to the HBM susceptibility to adverse outcomes construct in this study. Although it was originally planned to combine these into a scale, Cronbach's alpha values were too low to suggest an acceptable level of reliability for the scale, and hence responses to the two items were analysed separately. In relation to susceptibility of crashing, only 25.6% of the parents thought that they were at all likely to have a crash while their children were in the car (90 parents responded 'Very unlikely' to 'Moderately unlikely'). However, over half the parents (51%) believed that their children would be hurt if they were involved in a crash, and around 29% of these thought the injury would be serious enough to warrant medical attention. Because responses to these items were so highly skewed, to facilitate analysis it was decided to collapse the data into dichotomous categories of 'likely' / 'unlikely' or 'severe' / 'no injury/minor injury'. For perceived susceptibility, parents who gave responses at the mid-point ($n = 26$) were excluded from the analysis, while parents who gave responses of 'very likely', 'moderately likely' or 'likely' were recoded into 'likely'. Similarly, responses of 'very unlikely', 'unlikely' and 'moderately unlikely' were recoded as 'unlikely'. For perceptions of injury severity responses of 'no injury' or 'minor injury-treat at home' were recoded as 'no injury/minor injury' on the basis that these reflect a belief that any injury would be of no real consequence. All other responses (i.e. 'moderate-see a doctor', 'moderate-severe-go to hospital', 'severe-call an ambulance' or 'fatal') were regarded as reflecting a qualitatively distinct belief about the consequences of crashes and were recoded as 'severe'. The collapsed data was then used to examine the relationship with parental restraint practices.

Chi square tests of significance did not reveal any statistically significant difference between those parents with Appropriate versus Inappropriate restraint practices on the basis of their dichotomised responses to the susceptibility of crashing item. On this item, 92.3% of parents with Appropriate practices indicated that they believed themselves unlikely to have a crash while their children were in the car while 95.0% of the parents with Inappropriate practices gave this response (χ^2 df 1 = .174 ns). Similarly, the item on perceptions of the likely severity of injury in the event of a crash also did not distinguish between parents, with 70.7% of those parents having Appropriate practices perceiving serious injury as unlikely compared to 70.8% of parents with Inappropriate practices (χ^2 df 1 = .094, ns). Thus there was no support for Hypothesis 3 or Hypothesis 4 in these results.

3.3 Perceived benefits of using the most appropriate restraint for the child's age

As with the items related to susceptibility, the four items related to perceptions of the benefits of using age-appropriate child restraints were originally designed to form a scale. However, these too produced Cronbach's alpha values that were too low to be considered viable for a single scale. Moreover, there did not appear to be any improvement from excluding particular items from the scale, so items were analysed separately. As responses to each of the items were highly skewed, data were first recoded into dichotomous categories of 'Likely' or 'Unlikely' for each item before carrying out comparisons of parental restraint practices. For these variables, the frequencies of responses at the midpoint were low, and were included in the 'Unlikely' category because they were reasoned to reflect either a parental lack of knowledge about the relative advantages conferred by child restraints or a lack of conviction/trust in relation to available information. In either case, these responses were seen as being more akin to responses of 'unlikely' than to responses of 'likely'. Chi-square tests of significance were used to examine the relationship between parental restraint practices and perceptions of benefits of using age-appropriate restraints. Results are summarised in Table 2. Fisher's Exact Test was used for p values due to some small cell sizes.

Table 2: Proportions of parents indicating that the stated benefit of using an age-appropriate restraint with children was 'Likely' by parental restraint practices ('Appropriate' or 'Inappropriate').

Item	Parental restraint practices		Totals n responding (%)	Chi-Square values (df = 1), p values (Fisher's Exact Test)
	Appropriate n (%)	Inappropriate n (%)		
Protect against injury	93 (93.9)	22 (91.7)	115 (93.5)	.164, p = .487
Protect against death	90 (90.9)	22 (91.7)	112 (91.1)	.014, p = .634
Avoid a fine	98 (99.0)	21 (95.8)	119 (96.7)	8.105, p = .023*
Avoid demerit points	97 (98.0)	22 (91.7)	119 (96.7)	2.447, p = .171

*significant at p < .05

Only perceptions of the likelihood of avoiding a fine by using age-appropriate restraints distinguished between parents with Appropriate restraint practices from those with Inappropriate restraint practices (see Table 2). A greater proportion of parents with Inappropriate restraint practices (12.5%) compared to those with Appropriate practices (1.0%) indicated that they would be unlikely to avoid a fine by using appropriate restraints with children. It would seem that while most parents, regardless of their restraint practices, indicated a belief that compliance would result in avoiding penalties, the majority of those few parents who indicated a belief that compliance would not result in avoiding a fine had Inappropriate restraint practices. This provides partial support for Hypothesis 5. However, the results must be viewed with some caution as numbers of parents holding these views were very small.

3.4 Barriers to using age-appropriate restraints

As outlined above, six items assessed the extent to which parental restraint practices were related to identified barriers to using the most appropriate restraint with a child (see Table 1 for item wording). Cronbach's alpha values were too low to allow for formation of a scale with acceptable reliability and hence these items were analysed separately. Responses to these items were also highly skewed, necessitating recategorising of the data into dichotomous categories ('Disagree', 'Agree'). As with the previous items, a conservative approach was taken to responses at the midpoint. For, the responses to 'child restraints are only necessary on long trips' and 'children are just as safe in the front seat as the rear', midpoints were included in the 'Agree' category, while for 'child restraints provide better protection than an adult seatbelt' midpoint responses were included with 'Disagree' responses. In each case it was reasoned that a lack of opinion on such issues was closer to disagreement than to agreement and might lead parents to behave in less safe ways. For the non-safety related questions, midpoint responses were not included in the analysis. Results are displayed in Table 3.

Table 3: Proportions of parents (n = 123) indicating 'Agree' for each perceived barrier, by parental restraint practices (categorised as 'Appropriate' or 'Inappropriate').

Item	Parental restraint practices		Totals	Chi-Square values (df = 1), p values (Fisher's Exact Test)
	Appropriate n (%)	Inappropriate n (%)		
Child restraints are too expensive	34 (37.0)	7 (35.0)	41 (36.6)	.027, p = .542
Child restraints are only necessary on long trips	0 (0)	1 (4.2)	1 (.8)	4.159, p = .195
You cannot trust retailers	23 (27.4)	8 (36.4)	31 (29.2)	.680, p = .283
You cannot fit three restraints into the back seat of your car if needed	44 (44.9)	13 (54.2)	57 (46.7)	.665, p = .278
Child restraints provide better protection than adult seatbelts	97 (98.0)	21 (87.5)	118 (95.9)	5.440, p = .051
Children are just as safe in the front seat as the rear	5 (5.1)	1 (4.2)	6 (4.9)	.033, p = .668

As can be seen, the only item for which results approached statistical significance was "child restraints provide better protection than a seat belt for children". For this item, while most parents agreed, a greater proportion of parents with Inappropriate restraint practices (12.5%) compared to those with Appropriate practices (2.0%) indicated a belief that child restraints were no better than adult seatbelts in protecting children in a crash. Thus, although the majority of parents appeared to perceive the extra protection provided by child restraints, those parents who disagreed with this statement were more likely to have at least one child restrained inappropriately. However, the overall numbers of parents holding this belief were small, and this should be borne in mind in interpreting the result.

3.5 Parental self-efficacy in relation to child restraints

The approach to analysis of parental self-efficacy in relation to child restraints was slightly different from that for the other HBM constructs. It was reasoned that parents might be using different restraints with children in different age brackets and that self-efficacy might also differ according to the type of restraint. Hence for this set of items, parents responded for each child (and thus for each restraint) rather than only once (as for the other HBM constructs), yielding an n = 194 for this set of items. Similarly to their responses for the other constructs, parental responses to the items about their self-efficacy in relation to child restraints were highly skewed, with more than 90% of parents agreeing or strongly agreeing with each item. For analysis, responses were transformed into dichotomous categories with responses of 'Strongly Agree' transformed to 'Completely Confident' and all other responses transformed to 'Not Completely Confident'. This was done on the basis of

reasoning that if a parent gave a response other than ‘Strongly agree’ this might reflect that there are times when the parent has made decisions, or carried out behaviours in relation to a child restraint that he or she had doubts about. These in turn might have resulted in mistakes or errors in the type of restraint used or the management of these. This recategorisation thus represents the most conservative approach to level of confidence in relation to each restraint. Parental self-efficacy for choosing, obtaining, installing and ensuring the child wears the age-appropriate restraint, by appropriateness of the child's restraint for age are shown in Table 4.

Table 4: Parental ratings of own confidence (self-efficacy) in relation to obtaining, choosing, installing and ensuring the child wears an age-appropriate child restraint, by appropriateness of the child’s restraint.

Item and recategorised parental responses	Child’s restraint status		Totals	Chi-Square values (df = 1), p values (Fisher’s Exact Test)
	Appropriate n (row %)	Inappropriate n (row %)		
Borrow or purchase the correct restraint				
Completely confident	157 (88.7)	20 (11.3)	177 (100)	.003, p = .601
Not completely confident	15 (88.2)	2 (11.8)	17 (100)	
Choose the correct restraint				
Completely confident	149 (89.2)	18 (10.8)	167 (100)	.377, p = .366
Not completely confident	23 (85.2)	4 (14.8)	27 (100)	
Install the restraint in the car correctly				
Completely confident	143 (91.1)	14 (8.9)	157 (100)	3.347, p = .069
Not completely confident	29 (80.6)	7 (19.4)	36 (100)	
make sure child wears the restraint				
Completely confident	154 (90.1)	17 (9.9)	171 (100)	2.806, p = .098
Not completely confident	18 (78.3)	5 (21.7)	23 (100)	

As shown in Table 4, results suggest that parents are largely very confident about their use of child restraints, and none of the items provided distinctions between parents who did, and those who did not, restrain their children appropriately.

3.6 Parental awareness of the changes to the legislation

All parents were asked whether they thought there was a law in relation to children’s restraint in cars, and if so, what they thought the law said. Of the 123 parents, 115 (93.5%) thought there was a law. Key words within responses in relation to the content of the law were noted and later coded according to whether they contained accurate information (and also did not contain inaccurate details) about the existing (‘accurate old law’) or incoming legislation (‘accurate new law’) or not. Results suggested that parents were generally unclear about the law in place at the time they were interviewed, with none of the parents giving a complete and accurate description. However, ten parents (8.1%) gave details that were accurate or partially accurate in relation to the new legislation. Some of these thought child restraints were required until 8 years old rather than the 7 years specified in the new law, but were accurate otherwise. This suggests that these parents believed the amendments were in force at the time of the interview, possibly because of media coverage of the announcement of impending changes. The next question asked whether parents thought the law had changed in the previous 12 months, and if so, what the changes had been. A total of 79 parents (64.4%) indicated that they believed the law had changed. Of these, 7 parents cited the changes accurately, while a further 32 parents gave accurate but not complete details, making a total of 39 (31.7% of the whole sample) parents who were aware of the content of the incoming legislation, but believed these changes had already been enacted. The 44 parents who thought the law had not changed were asked if the law would change in the next 12 months. Twenty-five of these thought it would and were asked to describe the changes. Only five of the parents gave descriptions that were complete, or partially complete, and accurate. Overall, it

appears that a total of 104 (84.6%) parents believed the law had changed or was about to. However, only 44 parents (35.7%) were aware of the requirements of the new legislation, regardless of whether they believed it to already be in place or yet to be enacted.

4 Discussion and conclusions

Around 85% of the children in this sample were reported at the initial interview as restrained in a manner that complied with the legislative amendments introduced in 2010 in Queensland even though these were not in force at the time of the interview. This level of compliance is higher than that reported for recent observational studies of child restraint use and seating position in Queensland (Lennon, 2012), where around 75% of children estimated as under 7 years old were restrained appropriately. The results of the current study may thus either represent a real difference in levels of appropriate restraint for children in Toowoomba or reflect methodological differences and the influence of a social desirability bias. Another explanation for the higher levels of reported compliance in this sample may be the age distribution of the children. A large proportion were aged under 4 years. Other studies have suggested that the level of appropriate restraint use for younger children is higher than that for older children (Bilston, Finch, Hatfield & Brown, 2008) and the results reported here may reflect this. Given that a high proportion of these parents believed the legislative changes had already been enacted, it might be expected that the reported restraint use behaviours would be unlikely to change with the actual enactment. One interpretation of this is that many parents did not absorb the message intended from the original announcement of the legislation and instead believed it to be announcement of enacted changes rather than impending changes. However, only one third of the parents surveyed had an accurate perception of what the new laws require suggesting that a large proportion of these parents either do not understand what is required or have not informed themselves as to the requirements.

Perceptions of susceptibility to injury and severity of the outcome of not using the appropriate restraint for children did not provide any distinction between parents in relation to their restraint practices. This may have been partly a result of the nature of the items in this case: anecdotally, some parents reported that they found the idea of their child being severely injured or killed in a crash very confronting. In relation to the HBM construct of benefits it was surprising to find that only parental disagreement about being able to avoid a fine if using the appropriate restraint and seating position with children distinguished between those parents who were restraining all their children appropriately and those parents with at least one child in an inappropriate restraint. This result may be due to those parents who were classified as having inappropriate practices believing they actually were complying with the legislation, and thus also believing that the issue of being fined for non-compliance is irrelevant to their situation. Alternatively, they might be fully aware of using inappropriate restraints with one or more of their children, but believe that they won't be detected doing so, and thus compliance or otherwise will not protect against a fine. Lastly, this group of parents, albeit a very small proportion of the parents, may be aware of using inappropriate restraints but pessimistic about avoiding a fine by changing this behaviour. We are not sure which of these three possibilities, if any, is most accurate. However, it would seem that the legal/financial consequences would not be motivating under any of the three explanations. One point that should be borne in mind is that the general tendency of parents in this sample to indicate very strong responses to the items made such distinctions analytically difficult to detect. It would seem that on the topic of child restraints, parents hold clear views and are willing to express these in strong terms. Alternatively, social desirability influences on parental responses may be especially strong when it comes to physically protecting children.

While responses to the items assessing perceptions of the barriers to appropriate restraint use were more varied, it appears that these are largely unrelated to what parents then choose to do with their children, with the exception of perceptions about the benefits of a child restraint over a seatbelt. It appears that parents who cannot see any additional benefit from using a dedicated restraint might be more likely to place a child in a seatbelt. This has important implications for future interventions and suggests that efforts to increase the level of appropriate restraint should attempt to better inform them about the superior protection offered by child restraints compared with seat belts for children. By

doing so, it may be more likely that parents who are currently unmotivated to purchase a dedicated restraint because they can't see any advantage over using the seatbelts provided with the vehicle may be more likely to do so, while other parents who might discontinue use of a dedicated restraint too soon may be more motivated to continue to use them until the child clearly outgrows the restraint.

4.1 Limitations

As this study is based on self-reports, the results may be influenced by social desirability, and as mentioned above, there was some indication that this was the case. Moreover, this may be exacerbated by the strong social value of being seen to be a 'good' parent and the importance of protecting one's children within the definition of 'good'. The change in the legislation itself casts extra attention on the protective function of parents and thus may have increased the social desirability bias in this study. In addition, the sample of parents and of children was relatively small and so might not be indicative of the patterns of behaviours or beliefs for parents of children in the target age range.

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References

- Bilston, L. E., Finch, C., Hatfield, J., & Brown, J. (2008). Age-specific parental knowledge of restraint transitions influences appropriateness of child occupant restraint use. *Injury Prevention, 14*, 159-163.
- Downing-Matibag, T.M., & Geisinger, B. (2009). Hooking Up and Sexual Risk Taking Among College Students: A Health Belief Model Perspective. *Qualitative Health Research 19*, 1196-1209
- Durbin, D. R., Elliott, M. R., & Winston, F. K. (2003). Belt-positioning booster seats and reduction of risk of injury among children in vehicle crashes. *JAMA, 289*(21), 2835-2840
- Edwards, S. A., Anderson, R. W. G., & Hutchinson, T. P. (2006). *A survey of drivers' child restraint choice and knowledge in South Australia*. Adelaide: Centre for Automotive Safety Research (CASR).
- Koppel, S., Charlton, J., Fitzharris, M., Congiu, M., & Fildes, B. (2008). Factors associated with the premature graduation of children into seatbelts. *Accident Analysis and Prevention, 40*, 657-666
- Johns, M., Lennon, A. & Haworth, N. (in press). Child car restraints: Mandating type and seating row according to age has a positive effect in a regional city in Queensland, Australia. *Transportation Research Record*.
- Lennon, A.J. (2012) Has increasing the age for child passengers to wear child restraints improved the extent to which they are used? Results from an Australian focus group and survey study. *Vulnerable Groups & Inclusion*. DOI: 10.3402/vgi.v3i0.14975
- National Transport Commission (NTC). (2008). *Safer restraint of children. Information Bulletin*. Retrieved from http://www.ntc.gov.au/DocView.aspx?DocumentId_1634
- Office of Queensland Parliamentary Council, (2011). *Transport Operation (Road Use Management-Road Rules) Regulation 2009*, Reprint No. 1E.
- Rice, T. M., Anderson, C. L., & Lee, A. S. (2009). The association between booster seat use and risk of death among motor vehicle occupants aged 4-8: A matched cohort study. *Injury Prevention, 15*, 379-383.
- Ross, T., Ross, L., Rahman, A., & Cataldo, S. (2010). The Bicycle Helmet Attitudes Scale: using the Health Belief Model to predict helmet use among undergraduates. *Journal of American College Health, 59*(1), 29-36

Rosenstock, I.M. (1974). The health belief model and preventive health behaviour. *Health Education Monographs*, 2, 354-386

Winston, F.K., Durbin, D.R., Kallan, M.J., & Moll, E.K. (2000). The danger of premature graduation to seatbelts for young children. *Pediatrics*, 105, 1179_1183