BRIEF REPORT

An investigation of child restraint/seatbelt usage in motor vehicles by Maori in Northland New Zealand

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Objective: To investigate child restraint/seatbelt use by the indigenous (Maori) population in Northland New Zealand.

Method: Observational surveys were conducted at the two main car parks (McDonald's and the largest supermarket) to determine the number of passengers restrained, the type of restraints, and correct use. Observations were restricted to those who were obviously Maori, based upon the local knowledge of the observer. In addition, face to face questionnaires were administered to Maori whanau/caregivers involved in the care of two or more children for more than three days a week.

Results: A total of 788 participants were observed. Babies were those most likely to have all occupants restrained correctly (97%), followed by toddlers (66%), adults (56%), and school age children (48%); 138 interviews were conducted. Females (86%) were significantly more likely to ensure that all passengers were restrained on short journeys compared to males (67%; $p < 0.05$). Respondents under 45 (80%) were significantly less likely to restrain child passengers compared to people aged 45 or older (91%; $p < 0.05$).

Discussion: This study highlights the problem that larger families in this study had in providing correct child restraints for all their children.

Internationally and in New Zealand, motor vehicle injuries are the leading causes of death for children between the ages 1–14 years.^{1,2} For adults it is the second highest cause of injury deaths.² Thirty eight percent of all injury deaths are due to motor vehicle injuries.² Within New Zealand, the rate of motor vehicle occupant deaths³ and injuries⁴ is higher for Maori (indigenous people of New Zealand) than for non-Maori children aged 1–14 years. Despite 1995 legislation that requires all children 5 years and under to use restraints and all other children to wear seatbelts,⁵ levels of use in New Zealand are less than optimal.^{6,7} Anecdotal evidence suggests that the level of use by Maori is lower than the general population. Recent statistics released by the Land Transport Safety Authority indicate that the Northland region of New Zealand had one of the lowest child restraint wearing rates—69% in comparison with 79% in the general population.⁸ This study was based in the Northland region where Maori represented 31% of the population in 1996.⁹ Many towns have established child car seat rental schemes including three in the Northland town of Kaitiaki.

The aims of the study were to: (1) describe the level of car restraint use among children and adults in this community and (2) describe attitudes to child restraint/seatbelt usage by Maori, whanau (family).

METHODS

Two methods were used. First, observational surveys were used to gain information on the number of passengers in the vehicles, the number of passengers restrained, the type of restraints, and correct use of restraints, as well as the make and age of the vehicle. The passengers were categorised into babies; toddlers, school age children, and adults and the use of age appropriate restraints noted. Observations took place in nominated car parks (one attached to the only McDonalds outlet, the other attached to the main supermarket in Kaitiaki) over two weekends. These observations were restricted to people who were obviously Maori, based upon the knowledge of the observer.

Second, a questionnaire was developed to obtain information on child restraint/seatbelt use by Maori whanau as well as key lifestyle and attitudinal factors. The criteria for whanau to take part in the questionnaire involved caring for two or more children for more than three days per week. The interviews were administered by whanau members from local Te Kohanga Reo (Maori language preschools), Kura Kaupapa (Maori language primary schools), and mainstream schools (English language primary schools) in the community. Approximately half the participants were from the rural hinterland and half from the township of Kaitiaki. In terms of Maori tikanga (custom) face to face is traditionally preferred to telephone interviews. Analysis for both phases was undertaken using SAS version 8.02. Qualitative findings were analysed thematically.

RESULTS

Observational survey

The observational survey included 788 participants. As shown in fig 1, vehicles carrying babies were most likely to have all occupants restrained correctly (97%), followed by vehicles carrying toddlers (66%), adults (56%), and school age children (48%). In some age groups, restraint use appeared to be related to the number of people in the vehicle. Vehicles with two or more toddlers aboard had a significantly higher percentage of all toddlers unrestrained (57%) compared with those with only one toddler (24%, $p < 0.01$). Similarly, vehicles with two or more school age children had 49% of all children unrestrained compared with 42% for those with only one child. Of vehicles with four or more adult occupants, 50% had all occupants unrestrained, compared with 40% for vehicles with only one adult.

Of vehicles where all school age children were restrained correctly, 7.3% were in booster seats, 91.2% were wearing seatbelts, and 1.5% used a mixture of both restraints. For toddlers, 49% were in child seats and 47% were in booster seats (4% did not specify).

Figure 1 Restraint usage by occupant type.

Interview data

Of the 138 interviews 69% were with females and the average age of the respondents was 46 years. Of those who specified their gross household income ($n=81$), 56% earned \$20 000 (NZ) or less per annum.

The most common vehicle was a car (61%), followed by station wagons (15%), four wheel drives (15%), and vans (5%). All of the respondents said that their vehicles had one or more seatbelts, with the majority (89%) having four or five seatbelts. More than a third of the vehicles (38%) were more than 10 years old.

Most people (86%) said that they had enough restraints or seatbelts to protect the number of children traveling in their vehicle. Only 1% had one or more rocker seats (rear facing baby seats), 23% had one or more child seats, and 12% had one or more booster seats. Eighty four percent said that they always made sure their children were properly restrained on short journeys, with this figure increasing to 91% when making long distance journeys. The percentages of respondents who wore seatbelts were very similar to those for children, with 85% always wearing seatbelts on short journeys, and 91% always wearing a seatbelt on longer journeys.

Sixty nine percent said that they never carried child passengers if there weren't enough seatbelts/restraints while on short journeys. When on long journeys this figure increased to 76%; 51% made sure their children were always seated in the back on short trips. On longer journeys, 54% had children seated in the back seat.

Ninety five percent said they kept their car in a safe condition, and 92% said that their vehicle had a current warrant of fitness. Only 7% thought it was acceptable to drive with unrestrained child passengers in the vehicle, and 76% said that they would tell other people to put their children in restraints if they saw they were unrestrained; 56% felt that legislation made people wear restraints. Eighty one percent said that their children would ask to use a seatbelt/restraint if they had not already been restrained.

Females were significantly more likely to use restraints on short journeys than males (89% v 77%; $p<0.05$). A similar result was found for restraint use on long journeys. Females (86%) were also significantly more likely to make sure that all passengers were restrained on short journeys compared with males (67%; $p<0.05$).

Respondents under the age of 45 (80%) were significantly less likely to restrain their child passengers on short journeys, compared with people aged 45 or older (91%; $p<0.05$). This tied in with the finding that a smaller proportion (65%) of this age group reported they would never carry more children in the car than the number of restraints when on short journeys (see fig 2 for self reported restraint usage).

When asked why they thought many Maori did not always use correct child restraints, many commented on the number of children that had to be accommodated and the cost

Figure 2 Respondents' self reported restraint usage.

involved. "... we mostly have too many people to fit in our cars and not enough money for petrol to make two trips".

DISCUSSION

Findings from this study only portray part of the picture regarding the use of child restraints/seatbelts by Maori. A limitation is under-reporting, due to the non-inclusion of Maori who resemble the skin toning of Pakeha/European New Zealanders. Although it is encouraging that nearly all babies were correctly restrained, it is of concern that half of school age children were unrestrained. Stronger enforcement of the legislation and education programmes may be required.

Information provided in the interviews conflicted with the observations, with two thirds of those interviewed claiming never to carrying child passengers without adequate restraints whereas nearly half of school age children and one third of toddlers were unrestrained. This has been previously recorded.¹⁰⁻¹² Unsurprisingly, families with more children were less likely to have all children restrained. Thus, one of the challenges for injury prevention practitioners and policy makers is how to improve child restraint use for large families from lower socioeconomic groups.

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