

***The Role of the Family
in the Road Safety Behaviour
of Children***

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The role of the Family in the Road Safety Behaviour of Children

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Abstract

Survey data from 835 parents in New South Wales suggest that parents regard themselves as key providers of road safety education for their children, supported by other family and community members. Parents indicated that they see roadside learning as more effective than resources, especially resources which target either children or parents separately. They responded positively to the notion of attending training sessions and meetings. The data reveals a need for the updating of the current road safety knowledge held by parents and grand parents and a need for resources which target both adults and their children and which support practical training. Differences were found in the needs of different target groups, in particular, rural versus urban families and Aboriginal versus non- Aboriginal families

Keywords

NOTES:

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 - (2) The views expressed are those of the author(s) and do not necessarily represent those of the Commonwealth Government.
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1. EXECUTIVE SUMMARY

1.1 RATIONALE

Research suggests that theoretical classroom training in road safety increases children's knowledge but does not predict increased safety behaviour. Practical roadside training may be more effective. One of the major disadvantages of this approach however, is the cost. An alternative is to target parents/carers to more effectively teach road safety to children.

Survey responses of 835 parents are described in this report. The report includes information on parental attitudes and practices regarding road safety education in order to identify factors relating to their role in the road safety education of children and their potential role as practical roadside trainers. It also identifies effective interventions for targeting parents about the road safety education of their children, although it is acknowledged that there can be many differences within groups. For the purposes of this report, families have been grouped as Anglo-Australian, Aboriginal, Italian or LOTE (languages other than English), and by rural or urban location.

1.2 OBJECTIVES

The objectives of the project were to:

1. identify the views and practices of parents that relate in general to their role in the road safety education of young children and in particular to their potential as "practical roadside trainers";
2. examine the relationship between children's classroom training and parents' practices and awareness of road safety education;
3. identify effective interventions in targeting parents about the road safety of young children;
4. make recommendations about the development and testing of a pilot intervention program.

1.3 KEY FINDINGS, OBJECTIVES 1-3

Objective 1 was to identify the views and practices of parents that relate in general to their role in the road safety education of young children and in particular to their potential as "practical roadside trainers" of their children.

Key findings relating to the general issue of parental views and practices are summarised below. (Differences between target groups are discussed in Section 3).

1.3.1 Responsibility for Road Safety Education

Parents clearly saw themselves as the key providers of road safety education for their children. However, they also saw others - teachers, other child care staff, siblings, friends and grandparents - as having a significant role to play. This has implications for the dissemination of information and the development of strategies to help ensure that children receive consistent road safety messages from the range of people involved in their road safety education.

1.3.2 Knowledge Required by Children

The majority (over 70% for each area) of parents rated 10 areas of road safety as very important. Of particular concern were

- safe road crossing;
- where to play safely;
- wearing a helmet when cycling; and
- knowing how to cross a road with parked cars.

Almost as many parents believed that children needed to recognise road traffic signs (i.e., signs designed for drivers rather than for passengers or pedestrians) as believed that children needed to know that they had to hold an adult's hand when walking. (does this mean that road traffic signs were not a particular concern as well, or does the 'of particular concern' relate to a specific detail of the questionnaire. The way it reads is slightly confusing - it's very important but not of particular concern)

1.3.3 Age at Which Children can be Independent in the Traffic Environment

Most parents stated that children should be accompanied in the traffic environment at least until the age of eight years. A minority of parents appeared to allow children unsupervised access to make short journeys and to cross roads alone at the age of five years.

1.3.4 Parents' Potential as Practical Roadside Trainers

Key findings related to parents' potential as practical roadside trainers of their children were as follows: About half of all respondents were interested in attending parent and child training sessions and/or a meeting about pedestrian safety. Pedestrian issues were the main concern of parents. Parents indicated that they regarded roadside learning as more effective than the use of resources and saw themselves as the key providers of road safety education. The high response rate and willingness of a high proportion of parents to be contacted in the future indicates the level of their concern and interest in road safety. - no resources were provided - we were interested in finding out whether parents were using resources prior to the survey

Objective 2 was to examine the relationship between children's classroom training and parents' practices and awareness of road safety education.

Key findings relating to this objective are summarised below.

1.3.5 Parents' Awareness of Road Safety Education

There was evidence that whilst most parents are aware of the basics of safe pedestrian and passenger safety - seat belt wearing, safe crossing, and helmet wearing - they are unaware of what is currently considered "safe practice" or of current key messages as taught in road safety education programs. For example, parents typically made reference to crossing drills taught 20 years ago, and saw evidence of children's road safety practice in such behaviours as telling parents not to speed or recognising road signs designed for drivers.

Parents appeared to equate accident risk with increased traffic flow and speed, whereas, in reality, young children are at considerable risk in quiet locations and home driveways.

Many parents appeared unaware that the teaching of road safety in schools and in children's services is extremely limited due to time constraints and to teachers' views that this is an area of parental responsibility.

Objective 3 was to identify effective interventions in targeting parents about the road safety of young children.

1.3.6 Effective Interventions

Key findings relating to this objective are summarised below.

Parents usually felt that children could best be taught about road safety through real life experiences with parents or through everyday learning. An effective intervention may be to organise road safety meetings or training sessions since parents indicated that they would attend these if they were to be held at convenient locations and times.

Road safety resources may go unused unless parents are convinced that they are, in fact, effective teaching tools. This might be achieved by informing parents about how resources can be used in conjunction with real life experiences. (As noted earlier, were any examples of road safety resources used - I'm thinking particularly about the Federal Office of Road Safety brochure *Road Safety - It's not child's play*- A guide for parents) - no, as above

1.4 RECOMMENDATIONS

The following Recommendations are made:

1. **That initiatives be developed which involve families centrally in the road safety education of their children, for example, community meetings and practical roadside training sessions.** (See section 3.3.6 in which parents identify themselves as being the key providers of road safety education for their children).
2. **That strategies be devised to update the existing road safety knowledge currently held by families, in particular, by parents and grandparents.** (See Section 3.3.1 in which grandparents are identified as having an important role in road safety education, particularly in Aboriginal families).
3. **That all new road safety education initiatives provide opportunities for the development and joint practice of safe road user behaviours by children and their families.** (See Section 3.3.2 in which parents identify everyday experiences as playing a major role in children's development of road safety knowledge and behaviour).
4. **That strategies designed to address the differing needs of the target groups reported on in this study - in particular, urban versus rural families and Aboriginal versus non-Aboriginal families - be included in all new road safety education initiatives.** (See Section 3.2 and 3.3 in which these differences are described and discussed).
5. **That further investigation be undertaken into parents' perceptions of existing resources and into potential new resources.** (See Section 3.3.2 in which parents indicate that resources do not rank highly with them as a means of developing children's road safety knowledge. Also, Section 3.5 in which parents express a preference for resources aimed jointly at parents and children.)
6. **That road safety information and training programs should consider channelling funds towards children's services, health services and community organisations as effective means of targeting parents.** (See Section 2.1)
7. **That further research needs to be carried out into the role of the family in the early childhood years.** (See Section 2.1)
8. **That a pilot program which addresses the issues raised in the first seven recommendations be developed, trialed and evaluated in 1997 - 8**

2. LITERATURE REVIEW

2.1 CONTENT OVERVIEW

The review and discussion of relevant prior literature covers three main areas:

1. research surveys of family attitudes and practices towards road safety which report on road safety education within the family and the ages at which children are allowed unsupervised access to traffic environment (e.g., Sadler 1972; Rothengatter 1980; Antill 1991);
2. epidemiological and case-control studies identifying social, ecological and behavioural factors relating to traffic accidents. This may be due to a combination of factors such as increased exposure to the traffic environment, less protective behaviour of parents, less safe local traffic environments, or behavioural characteristics such as impulsivity (e.g., Bagley, 1992; Roberts, Keall & Frith 1994; Roberts & Coggan 1994; MacKellar 1995; Robertson 1995);
3. evaluations of road safety education programs which show that programs may be ineffective in part because parents are insufficiently involved or ineffectively targeted, through traditional resources such as books and parent notes (e.g., Van der Molen, van der Heric & van de Klaauw 1983; Rothengatter 1984; Gregersen & Nolen 1994)

2.1.1 Research Surveys of Family Attitudes and Practices Towards Road Safety

Several studies were carried out in the 1970's about family road safety (Sadler 1972; Bongard & Winterfeld 1977; Limbourg & Gerber 1979). Rothengatter (1980) reports on interviews with 289 parents of children aged between 3 and 6 years (average age 4 years 10 months) who attended the same school in suburban Holland. The research findings were that 98% of children were allowed to play outside alone and that 32% of children always or regularly travelled to preschool alone whilst only 52% of children were never allowed to travel alone. This exposure is even higher than that reported by Sadler (1972) who reported that in the U.K up to 76% of the 5 year old children surveyed were able to play outside unsupervised although only 6% of parents allowed children (5 years old) to travel to school alone. - yes, no doubt that would one of the influencing factors, unfortunately we don't have information to compare traffic environments on.

Two more recent studies have focused on the attitudes and practices of parents towards the road safety of young children: Rivara, Bergman & Drake (1989) report on a written survey of over 2000 parents of infant/primary school children in King County, USA; and Antill (1991) reports on face to face interviews with 200 parents of children aged 5-7 years in metropolitan Sydney.

Rivara et al (1989) found the age of the child and the density of traffic are two major factors that influence parents in their attitudes and practices towards road safety. One third of parents believed that kindergarten-aged children could cross quiet or residential streets alone and, by the time children are just one year older and in grade one, 31% of parents allowed children to walk to school alone. Parents appeared to directly link the risk of accident to the type of exposure, i.e., to traffic speed and density. In grade four only 15% of children were seen as able to cross busy, arterial streets alone, compared to 69% capable of crossing quiet streets.

Research findings on the influence of traffic speed and density on accident risk have produced different results, research indicating a higher risk of accidents on local streets (Maisey 1985) and others showing a link between accident rate, density of traffic, and characteristics of the street environment that restrict children's vision (Stevenson 1994). Roberts, Norton, Dunn, Hassall & Lee-Joe (1994) identified the majority of child pedestrian injuries as occurring on public roads with "high traffic flow where a large proportion of vehicles are travelling in excess of the posted speed limit" (Roberts et al 1994:45). 24% occurred in residential driveways.

In Antill's Australian-based study (1991), parents appeared to have more protective practices. Whilst older children were seen as more capable of travelling to school alone, only 14% of parents in grade K-2 allowed children to travel to school alone (or with a child of the same age). Even by the time children were 10 or 11 years old only 35% travelled to school alone or with another child. Almost three quarters of the children

usually travelled to school by car, over a third often walked with a parent and 19% often walked with an older child or sibling (more than one usual method of transport could be nominated). (Australia has a general urban speed limit of 60km/h which is high by world standards - this may be a factor in parental protectiveness? - I think that is true, but even if the speed limit was lower - say, 50km, then I don't think it would translate into increased perceptions of safety on the parent's part - at least I hope not.)

The Rivara et al study (1989) showed that most parents perceived pedestrian injury to be a serious threat to children - more so than the risk of drowning (82% of parents), or of burning in a house fire (76% of parents), which the researchers indicate as correct perceptions at the time of the research. Parents who had reached a higher level of education were very significantly more likely to have these perceptions ($p < .0001$). Passenger and bicycle injury was perceived to be a greater risk to children than pedestrian injury, with no significant difference in perception by level of education. This was an incorrect perception of risk at the time of the research. More than three quarters of all parents believed that pedestrian crossings were about fifty per-cent effective in protecting against injury.

The parents in Antill's study (1991) viewed traffic-related accidents as the biggest threat to their children's safety (36% of parents). Traffic-related accidents were perceived as a slightly higher risk than the risk of being kidnapped or of sexual abuse (30%). When different areas of road safety were considered, more parents (26%) viewed pedestrian injury as the greatest risk to children. 10% of parents saw passenger injury as the highest risk and 12% of parents chose bicycle injury. (It would be good to know how these perceptions compare with the actual risks involved) More children are, in fact, injured as passengers than as pedestrians, which reflects the extent to which young children travel by car. In New South Wales in 1995 about one quarter of all traffic accident casualties for children aged 0-8 happened when they were pedestrians, about 70% when they were passengers in cars or other motor vehicles and only about 5% when they were pedal cyclists.

The findings reported in these studies may in fact be a conservative reflection of parental practices and of children's unsupervised access to the road environment. Whilst Rothengatter's study (1980) achieved a very high response rate (93%), the low response rate of 42.9% for the Rivara et al study (1989) even after follow up of non-respondents, and the difficulty in recruiting interviewees reported by Antill (1991) may indicate sample bias if more safety conscious parents tended to participate. As the surveys are based on self-reported practices and behaviours of parents, validity of the data is also of concern. On the other hand, Rivara et al (1989) point to the research of Thackray and Dueker (1983) as consistent with their findings, and Rothengatter (1984) suggests a trend for parents to increasingly allow young children to travel and play unsupervised in the traffic environment - in that study 69% of 5-6 year olds were reported by their parents to do so.

Rothengatter (1980) and Rivara et al (1989) both report that 98% of parents had taught their children about road safety, and 88% of the parents interviewed in the Antill study (1991) discussed road safety "a lot" with their children, and significantly more than they discussed other areas of child safety. Only 61% of the parents in the Rivara et al study were aware of pedestrian safety being taught at school. Antill found parents tended to believe that schools could do more.

Antill (1991:24) reports that "mothers taught more than fathers ($p < .05$), and, surprisingly, that the most educated parents taught less than the least educated group". He suggests that this probably reflects the longer working hours of the more educated participants who may then have less time for road safety education.

These studies have tended to view the amount of road safety education and unsupervised exposure as being a fairly straightforward reflection of parental beliefs and attitudes about road safety. Other factors related to social and lifestyle changes may have a considerable impact on decision making about children's access to the traffic environment and may partially explain apparently contradictory findings, for example:

- why parents consider road safety to be important, yet many parents had inappropriate expectations of their children as safe road users (Rivara et al 1989);

- that whilst most children are still very restricted in their access to the traffic environment, there was clear evidence that many children had few restrictions placed upon them Antill (1991); and
- that 78% of parents were reported by child care centre directors to leave children unattended in cars whilst parents collected other children from the centre (ECRSEP, 1996a).

2.1.2 Epidemiological and Case-control Studies Identifying Social, Ecological and Behavioural Factors Relating to Traffic Accidents

Whilst disease and childhood illness has tended to receive most attention in the past, traffic accidents are increasingly identified, along with other accidental injury, as a major health issue for children in all countries that report mortality rates (MacKellar 1995). In Australia, accidents are the leading cause of death and injury of young children. Traffic-related accidents form a high proportion of these accidents and are the leading cause of injury deaths (National Injury Surveillance Unit 1996).

In New South Wales, road accident statistics have fallen significantly, although this is not the case for most other States. Even in New South Wales, however, in 1995 there were 1149 casualties amongst children aged 0-8 years (including killed, seriously injured and other injured), 57% of which occurred to children as car passengers and 26% as pedestrians. Amongst children aged 0-5 years, 415 children were involved in accidents as car passengers and 156 as pedestrians. 65% of these pedestrian accidents happened to boys.

In Western Australia a study of mortality rates for children aged 0-14 years between 1983 and 1992 showed that motor vehicle accidents were the leading cause of death from injury and that almost two thirds of children killed were boys (MacKellar 1995). Mortality rates from motor vehicle accidents were 5.1 per 100,000. For all injuries, the mortality rate for Aboriginal children was nearly four times that of non-Aboriginal children. Other evidence of the over-representation of Aboriginal children in traffic accidents is presented by Cercarelli (1994) in a study of hospitalisation following a traffic accident. Hospitalisation of Aboriginal boys aged 0-9 years in 1988 was more than 500 per 100,000 population, compared to more than 200 per 100,000 population for non-Aboriginal boys.

Whilst all young children are vulnerable to traffic accidents because they are still developing the skills needed to handle the traffic environment safely, some groups of children are particularly vulnerable (Roberts 1994; Montreal, Dougherty, Pless & Wilkins 1990). A study which examines the association between sole parent status and risk of child pedestrian injury showed that "children of sole parents were at a significant risk of injury, with a risk of 1.5 times that for children without sole parents" (Roberts 1994:531). In a case-control study, Roberts used hospital accident records to identify young children who had been killed or injured in pedestrian accidents in Auckland, New Zealand, and interviewed parents of cases and control children to collect demographic and socio-economic data. Roberts' findings support research indicating that children from the lowest socio-economic groups are three times more likely to be involved in a traffic accident than children from the highest economic groups.

However, a major finding in this study is that whilst results confirm that children of single parent families are one of the highest risk groups, these children are not at equal risk of injury. Despite their inclusion amongst the lowest socio-economic groups, children of single parent Pacific Island families are not more likely to be at high risk of a pedestrian injury. In fact single parent status appears to have a protective effect within this group. Roberts' findings are that single parent status appears to offer a protective effect, unlike children from European families where single parents status is linked with a greatly increased risk of injury. He (1994:532) attributes this to the strong family and social networks which are found amongst Pacific Island families, and which offer protection to children not available to European families.

Other indicators of accident risk are reported for children living in neighbourhoods with high traffic volumes (a risk of injury 13 times that of children living in the least busy areas); in areas with a high density of parked vehicles (Roberts et al 1995); and for children in no-car families (Roberts & Coggan 1995).

In a recent study, Bagley (1992) maps social and demographic indicators of risk of individual children who were identified from hospital records as having been involved in a traffic-related accident in the urban area

of Brighton, U.K.. Family data was gathered from interviews with the children and their teachers, although parents were not interviewed. Results showed that vulnerable children are likely to live in areas where the traffic environment is more dangerous, where there is less play space at home, and where more distant travel must be made to school, shops or to play areas. Children at risk are more likely to be those in sole parent families, and families without a car.

In Bagley's study, post accident ratings from psychological testing of individual children and ratings by teachers showed a likelihood for children who had been involved in an accident to achieve a significantly lower score on the Schonell test of reading and verbal reasoning and to score significantly higher on the Rutter scale of overactivity and aggression, than did the control children. Overactivity was apparently not a result of accident trauma, and had usually been observed before the accident took place (Bagley 1992:287).

2.1.3 Evaluations of Road Safety Education Programs

Road safety educational programs and much of the associated research frequently assume that parents teach their children safe pedestrian behaviour or encourage them to do so by including road safety material for parents. Evidence suggests that many parents do not model appropriate road safety behaviour, frequently overestimate the understanding and abilities of young children in traffic and scarcely utilise road safety education material (Rivara, Bergman & Drake 1989). An evaluation of the Australian program "Out and About" (Federal Office of Road Safety 1985) found that most had not read the parent guide and no change in road safety training was apparent (Castor & Rush 1989).

There is evidence in the research that parents have been willing to take part in road safety training and that this has had a positive result on road safety behaviour of the children involved. Rothengatter (1984) and Rivara et al (1989) argue for the need to better include parents in road safety education as an attempt to reduce the incidence of child pedestrian injury. Rothengatter (1984) found that, under experimental conditions, the road crossing behaviour of 4-6 year old children improved significantly when trained by parents following a program of road crossing training and audio visual demonstration in three traffic environments - a quiet street, a street with parked cars, and a junction. Lehman & Geller (1990) found that, whilst seat-belt wearing was already widespread, compliance increased after parents and children watched a video about seat belts.

Family based road safety educational programs, aimed at teaching children road safety skills, operate in several countries via traffic clubs or in conjunction with a school based program, or the mass media. In its 1996-2000 Program Direction, the Early Childhood Road Safety Education Program (RTA 1996) will include a focus on family education and "establish mechanisms for direct provision of education and information to families with children 0-6 years" (RTA 1996:9).

The overriding aim of all these initiatives is to reduce the incidence of traffic-related injury to children. This has generally been seen as achievable through the theoretical teaching of road safety to children and the availability of road safety materials to children, teachers and parents.

Whilst research has long indicated that an increase in children's knowledge of road safety may not correspond to an improvement in traffic behaviour, particularly for young children (Ampofo Boateng et al 1993) family and school based educational programs continue to be designed to increase knowledge of key road safety messages. The use of video or model road/model village set ups, and one to one practical roadside training, which allows for variations in the road crossing skills and knowledge of children, has been shown to be more effective in reducing accident risk under experimental conditions (Ampofo Boateng et al 1993).

Whilst research also indicates that children from lower income groups are over-represented in the accident statistics, there have been few initiatives to specifically target those families that the research has indicated are at increased risk. For example, traffic club membership is more common amongst middle and high income families; and many road safety materials are only produced in one language and in written form, and are therefore of little use to families who do not speak that language or who are illiterate.

Most evaluative research has relied on survey through questionnaire or interview to obtain a comparison of pre/post tests of children's knowledge or member versus control group differences. The main disadvantage with the use of survey is that it may indicate an increase in road safety knowledge but this cannot be equated to improved safety behaviour (the actual aim of the program). Some studies have involved one month (or more) follow up studies to detect if changes are enduring. A number of studies have been conducted which involve the observation of children in traffic situations and this data is generally accepted as more reliable. The measurement of decrease in the number of traffic accidents has been used to test the effectiveness of road safety education programs, however, this is very difficult to attribute to the impact of a road safety program and not to other factors. Some evaluative studies have been of limited value when findings indicate that a program is not achieving its aims, but fail to identify why the program is not successful.

A study by West, Sammons and West (1993) interviewed parents and children (aged between 3.5-4 years) to evaluate whether the self-reported attitudes and practices of parents and children in the experimental traffic club regions improved more than those in control regions. Interviews were carried out with over 1000 families, one interview before and one after the introduction of a traffic club scheme, to which half of the families participated.

The program responded to research findings which may have contributed to traffic clubs being ineffective. Therefore, membership was free and the program involved parents and children with materials designed to appeal to both. Parents were encouraged to train children when out walking with them in the traffic environment and the materials "provided specific guidance on what kinds of training would be most appropriate at each stage of development" (West, Sammons & West 1993:611).

The main findings were that membership of the Traffic Club appeared to increase the amount of road safety training children received, and children were reported to run ahead less. However, no effect of the Traffic Club was found on children cycling unsupervised, or on children permitted to cross the road alone, or run into the road (boys were significantly more likely to run into the road than girls). Whilst the researchers found no effect of the Traffic Club, children from lower income groups were significantly more likely than those from higher income groups to ride cycles unsupervised in the traffic environment - either on roads or on pavements; to cross roads by themselves and to play in the streets unsupervised.

Gregersen & Nolen (1994) evaluated the effects of a voluntary, home-based, children's traffic club in Sweden. Twenty per cent of Swedish children are members of the Children's Traffic Club which is aimed at children aged 3-7 years. The aims of the club are to inform parents of children's limited ability as pedestrians, prepare children for different traffic situations, and, more generally, to reduce accident risk for members.

The club sends out printed material (usually thematic - eg winter roads), puzzles, gifts etc. twice yearly to members aged between 3 and 7 years. Cycling instructions are not included because children in this age group are considered to be too young to cycle in traffic. Although the club has been operating for at least 20 years no evaluation had been carried out prior to the Gregersen and Nolen (1994) study. However, the club operates in a similar way to a Norwegian club which when evaluated showed an overall accident risk that was 20% lower for members.

The evaluation involved 3 surveys of members and non-members of the Traffic Club over an 8 month period. Parents were required to complete the questionnaires which asked about traffic accident and exposure as well as other, non-traffic, accidents in which their children were involved. Findings indicated a considerable increase in risk for members compared to non-members for accidents involving cycling. This area is not covered in club material as children are considered to be too young to cycle on the streets. The researchers raise the question of whether membership of the club might increase the risk of accident because members overestimate the safety effect of traffic education or over-report accidents due to increased awareness of member families (the study found no significant difference in the reporting of other types of accidents by member and non member families).

The study found that member children spend less time exposed to traffic without an adult, both as pedestrians and when cycling - this may indicate safer traffic behaviour due to an increase in parents' knowledge of children's abilities in traffic and data on traffic exposure can be fairly accurately collected through survey.

2.1.4 Interventions in Targeting Parents about the Road Safety of Young Children

A review of the literature on interventions which target parents about road safety shows that the only substantial evaluations of interventions that have taken place relate to seat belt advertising amongst LOTE. Other interventions for which there has been some evaluation are roadside training programs, road safety materials for parents of young children and an Aboriginal community road safety initiative.

Community Road Safety Committees

Aboriginal children have been identified as very vulnerable to injury (MacKellar 1995). Discussion at a conference workshop (D.H.S.H. 1995:105) concluded that "Injury prevention is especially hard to deal with when basic health-care needs are unmet. Communities cannot be expected to provide good prevention strategies when they do not have adequate treatment facilities".

A road safety intervention was piloted by two remote Aboriginal communities. Based on a Swedish community participation approach, Aboriginal community road safety committees were established within the two communities. The intervention was found to be suitable to Aboriginal needs (notwithstanding the diversity that exists among Aboriginal communities) with its focus on community, rather than family. Evaluation of the pilot found that it had resulted in some responsibility and ownership of road safety problems, however, the Committees felt that there was a need for increased police and other government authorities involvement in addressing the problems which were identified as including the following: dangers to pedestrian; use of child restraints; use of bicycle helmets and speeding motorists on roads which were poorly maintained and lit. An attitudinal change, particularly amongst children, was identified with increased helmet usage and riding away from the main highway. The cost of bicycle helmets was a major factors in their non-use.

Advertising Media

Extensive research has been carried out in New South Wales into the use of seat belts and child restraints among drivers of non-English speaking backgrounds. The most recent evaluations have been carried out to determine the effects of seat belt and child restraint advertising in the print media, television and radio (Yann, Campbell, Hoare, Walker 1994). An intensive campaign, sponsored by the RTA, NSW was aimed at three LOTE communities. This resulted from research (Walker 1991) which indicated significantly lower seat belt and child restraint usage amongst the Italian, Lebanese and Vietnamese communities.

The evaluation of the impact of ethnic radio, newspaper and a community focused campaign found that some shift in attitudes had been achieved:

- in the usage rates of child restraints amongst Vietnamese families;
- in the increased usage of restraint fitting stations;
- in increased awareness (particularly among Italian and Lebanese adults) of risks associated with unrestrained rear seat travel.

Whilst the multi media approach was considered to be effective, the evaluation found that the ethnic media was ineffective for migrants who had been in Australia for many years, for example for Italian families, that responses were partly influenced by other advertising campaigns, and that the effects of a specific advertising campaign could not always be determined.

Discussion group research into the attitudes and knowledge of seat belts and child restraints (Derewlany 1991), amongst six LOTE communities identified the most effective and ineffective means to target each community. In general the following was common to each community:

- a lack of interest and desire to read brochures or pamphlets in English or in translation because these were usually perceived as too long or the messages too complicated;
- information should be brief and easily understood;
- television as a medium for messages that were "short and striking (1991:11), were preferred by younger participants;
- older participants preferred information in translation on television, but English was acceptable if accompanied by clearly focused images;
- most impact could be achieved through road safety messages highlighting tragic family outcomes of non-restraint usage;
- community language videos and radio were preferred media and community language newspapers for Chinese, Vietnamese and Korean participants.

Parent Resources

A qualitative research study (MRA 1995) was undertaken to evaluate parents' concerns about road safety issues for pre-school aged children, their requirements for road safety information and the effectiveness of an RTA publication aimed at parents and playgroup carers "Our Children, Our Responsibility", (RTA 1994). The evaluation found that the main road safety concern of parents was road crossing and, to a lesser extent, children running onto the road and the use of child restraints.

The booklet was very well received by parents, particularly in regard to its high quality, readability, size and content. There were three main areas of improvement suggested by parents evaluating the booklet:

- mothers perceived that they were already aware of the road safety messages contained in the booklet and suggested that by also targeting the child, and by including suggestions for parent/child interactions, the book would be used more often;
- precise teaching messages should be included;
- illustrations should be in colour and should very clearly focus on a specific message - this was particularly important if the book was to be used by children and parents.

Elliott's study (1985) also found that mothers of young children stated a clear preference for one edition in a series of "Spike's Bike Books" because it "allowed interaction between parents and child" (1985:158) and that the main concerns of parents were pedestrian and bicycle safety, and not passenger safety .

2.2 RECOMMENDATIONS ARISING FROM THE LITERATURE REVIEW

1. That road safety information and training programs should consider channelling funds towards children's services, health services and community organisations as effective means of targeting parents.

Parents are the key providers of road safety education for young children. They are responsible for teaching them road safety skills and knowledge. However, they frequently overestimate the abilities of young children, and model unsafe behaviour in the traffic environment. The importance of the family is further highlighted by the fact that road accident risk is related to factors such as socioeconomic grouping, cultural background, gender, sex and the protective behaviour of parents regarding supervision and exposure to the traffic environment.

However, whilst parents and family members are most likely to have primary responsibility for teaching and modeling road safety behaviour, most resources that target young children are channelled through child-oriented programs and resources for schools, early childhood services, health services and community organisations. Direct targeting of families has been a very limited strategy.

Most educational programs already include a family education component which targets the family directly or indirectly through parent meetings, or by providing information leaflets for parents to pick up or by sending educational materials home. However, this component is often minor and not followed through, the main focus being the children in the service.

2. That further research needs to be carried out into the role of the family in the early childhood years.

Considerable research has been carried out into epidemiological and ecological research to identify characteristics of child pedestrian injury, into experimental research on the testing and training of children's road safety knowledge and behaviour, and the evaluation of existing early childhood service or school-based road safety education programs and of media campaigns. However, very little research has targeted family practices in the early childhood years when the foundations of safe behaviour are being established. The current study has made a start in this area.

3. CORE REPORT

3.1 METHODOLOGICAL OVERVIEW

3.1.1 The Sample - Procedures and Targets

A strategy was developed with the aim of surveying families from Anglo-Australian, Aboriginal and language other than English (LOTE) backgrounds. The sample includes approximately half living in urban and half living in rural locations. Australian Bureau of Statistics (ABS) Census data were used to identify local government areas with a high population of families from non-English speaking backgrounds. The Census data indicated that apart from a large number of Italian families in the Riverina area, there were no other concentrations of LOTE families living in rural areas of NSW. It was therefore decided to put a greater focus on surveying Aboriginal families, which was seen as appropriate, with research indicating that Aboriginal children are the most over-represented group in traffic-related accident statistics (MacKellar 1995; Cercarelli 1994).

Following the granting of Ethics Approval from Macquarie University, contact was made with Aboriginal liaison personnel in urban Sydney and in rural areas of NSW in order to obtain Aboriginal families for inclusion in the survey. The Catholic Education Office and the Diocesan Commission were contacted to identify schools with a high attendance by children of Italian-speaking backgrounds and the NSW Department of School Education gave permission to contact government primary schools. As only parents with at least one child within the 0-8 year age range were to be included both primary schools and early childhood services were approached regarding the distribution of the survey. These were selected from a range of urban locations, aimed at ensuring that Anglo-Australian families from low, middle and high income groups were targeted.

Centre directors and school principals were contacted initially by telephone to inform them about the project and to obtain information about the characteristics of families using the service or school. Those who were willing to participate were sent details of the project and a copy of the draft questionnaire. They were recontacted by telephone two weeks later to confirm participation and were asked to forward family names and to identify Aboriginal and LOTE families. Table 1 shows the number and characteristics of institutions through which the distribution of surveys for self-completion took place. In addition 170, Aboriginal families in rural and urban locations were surveyed by face to face interview.

Table 1
Institutions Through which the Family Road Safety Surveys were Distributed

	Urban	Rural	Total
Early Childhood Services	3	2	5
Schools :			
• Government	2	1	3
• Non-government	2	3	5
Total	7	6	13

3.1.2 Description of the sample

It was intended that at least 1200 families would be surveyed, with approximately half from rural and half from urban locations in NSW. In the event, surveys were distributed to 1246 families, Table 2 shows the characteristics and geographic location of the sample. 64% of families were Anglo-Australian. The next largest groups were Aboriginal and then Italian families.

Table 2
The Sample of Families Surveyed

Family Characteristics	Urban		Rural		Total	
	No.	%	No.	%	No.	%
Anglo-Australian	401	32	399	32	800	64
Aboriginal	116	9	132	10	248	19
Italian	47	4	54	4	101	8
Other LOTE	53	4	44	4	97	8
Total	617	49	629	51	1246	100

3.1.3 The Survey Instrument - Procedures

The survey had previously been trialed with 60 families from an urban child care centre. To obtain a rural perspective, the survey was distributed to members of an early childhood Resource Advisory Group which advises on rural road safety. Two focus group discussions were held - one with parents of pre-school aged children and one with parents of children attending primary school. The information obtained from these discussions, and from a trial of the final draft questionnaire was used to finalise the questionnaire design.

There were several procedures aimed at maximising the response rate. Firstly, the final questionnaire included a covering letter which offered respondents the choice of completing the survey in writing, and returning it in the envelope provided, or of providing telephone contact details and completing the survey over the telephone when contacted by one of the researchers (this was also seen as a measure that would assist parents with a lower level of literacy). Secondly, all surveys were distributed with the family name on the envelope. Thirdly, Aboriginal families, who were anticipated as being particularly difficult to reach through a written survey instrument, were for the most part interviewed face to face by Aboriginal liaison personnel known to the local community. Finally, a sheet of stickers was provided for every family surveyed and schools and early childhood services were asked to distribute them to children or families when completed surveys were returned.

Whilst it was intended to have the survey translated into main language groups, school principals advised that translation into Italian would be of little benefit as most Italian families were bilingual. For families with other language backgrounds, principals and directors for the most part advised that the families coped well with information written in English and that even if they were not themselves literate in English, that there were support networks within the school or in the local community which could assist in survey completion. For this reason, and because LOTE families from rural areas were not included, the questionnaire was not translated.

All schools and all but two children's services provided lists of family names which were used to personalise each survey. Names were matched to a unique survey identification number to allow for follow up on non-respondents. Surveys were delivered in person to each school and early childhood service, including those located in rural areas, so that a final discussion about the project could take place with principals and service directors. Families were asked to return the survey within seven days, and 2-3 weeks after the initial distribution there were collected. A follow up of non-respondents then took place for all schools and services which had provided family names, but no follow-up could take place for services in which the survey had been distributed anonymously.

A copy of the survey is attached as Appendix 7.1. There were five main areas of questioning, as follows:

Section A

Who is involved in teaching road safety to young children, what is taught and how can this best be done.

Section B

Ages at which children can cope with a variety of traffic situations, include unsupervised road crossing, do boys and girls differ in the way they deal with road safety.

Section C

How children respond to a range of experiences related to road safety, what road safety rules do children practice.

Section D

Types of road safety resources used by families, areas in which more information is needed.

Section E

Age and gender of siblings, method of transport used, language background, work status and level of education completed.

3.1.4 Data Analysis

On receipt, responses for questions that had not been pre-coded were coded, entered and analysed using SPSS (Statistical Package for the Social Sciences). Analysis included cross-tabulation and multivariate analysis. Qualitative data from the questionnaire was coded, collated and analysed either through SPSS or manually.

3.2 FINAL SAMPLE

From the initial and follow-up survey distributions to 1246 families in rural and urban locations, 835 parents completed the survey to give a response rate of 67%. 54% of respondents live in rural areas of New South Wales. 84% of the respondents were female, most of whom were aged between 30-39 years. Table 3 shows the characteristics of families in the sample.

3.2.1 Occupation and Educational Qualifications

Table 3 indicates that 34% of respondents did not work outside of the home and that their main occupation was typically that of mother and homemaker. The largest category of those in paid employment (22%) worked in mid-level white collar occupations, such as administrators and teachers and 18% were in occupations such as receptionists, secretaries, shop assistants. Approximately 2% of respondents were unemployed, though it is likely that some of the 4% of respondents who did not complete the question "*What job do you do?*" were also unemployed, as well as some of those who described their main occupation as home maker. About one third of respondents worked outside of the home full time, one third part time and one third did not work outside of the home at all.

The highest level of completed education ranged from those who had no educational qualifications (10%), having left school prior to or without obtaining the school certificate, to those with postgraduate qualifications (3%). The largest group (37%) had obtained the school certificate and the remaining respondents were fairly evenly divided amongst those whose highest qualification was the higher school certificate, a college diploma or a university degree.

Family size ranged from 1 to 9 children. 41% of respondents had 2 children, 27% had 3 children and 16% had one child. The age of the oldest child ranged from less than 1 year to 30 years. Data was collected on the gender and age of siblings as this may be an influence on the amount and type of road safety education and on the amount of exposure to the traffic environment which children experience.

Table 3
Characteristics of Final Sample (n=835)

Variable	Category	Percentage	Number
Gender of parent respondent	Female	84	691
	Male	16	136
Location	Rural	54	453
	Urban	46	382
Occupation	High professional	3	22
	Mid professional	23	183
	Trade	8	63
	Clerical	18	146
	Semi skilled	4	34
	Unskilled	7	59
	Unemployed	2	16
	Home duties	34	271
	Other	1	5
Highest educational qualification	Post graduate	3	24
	University degree	16	123
	College diploma or certificate	17	133
	Higher School Certificate	18	145
	School Certificate	37	291
	No qualifications	10	77

3.2.2 Cultural Background

Table 4 shows the language and/or cultural background of respondents. Of the respondents, 19% were themselves Aboriginal or Torres Strait Islander or had an Aboriginal or Torres Strait Islander partner, and identified as members of the Aboriginal community. 16% of respondents regularly spoke a language other than English (LOTE). The largest single group were Italian families who made up 5% of the final sample. It was of primary importance to include Aboriginal families in the survey as research has indicated that when compared to the general population, Aboriginal children are at greatly increased risk of involvement in accidents, including traffic-related accidents (MacKellar 1995). Research has also indicated that, at least with respect to seat belt usage, there are significant lower usage rates among LOTE families (Walker 1991; Yann, Campbell, Hoare & Wheeler 1994).

Table 4
Number and Percentage of Respondent Families Who Regularly Speak a Language Other Than English at Home, by Language Group

Languages regularly spoken at home...	Number of total sample	Percentage of total sample
Italian	39	5%
European languages (other than Italian)	29	4%
South Pacific Island languages	25	3%
Asian languages	20	2%
Indian languages	11	1%
Middle Eastern languages	3	<1%
Total LOTE (includes 5 respondents who did not specify languages)	133	16%

3.3 FINDINGS RELATING TO OBJECTIVE 1

Objective 1 was to identify the views and practices of parents that relate in general to their role in the road safety education of young children and in particular to their potential as "practical roadside trainers" of their children.

3.3.1 The Role of Parents

The role of parents was assessed through a series of questions which asked: who was involved in teaching road safety; how was road safety best taught; how important were key road safety issues; their opinions as to the age at which children could have unsupervised access to the traffic environment; and did parents perceive that a child's gender influenced his or her ability to deal with traffic situations.

Parents were asked to rate the involvement of themselves and others in the road safety education of young children (Table 5). It is clear that whilst parents saw themselves as the key providers of road safety education for their children, with 85% of parents stating that they had a great deal of involvement in their children's road safety, they also saw others having a significant role to play.

For the sample as a whole, the involvement of other family members, such as grandparents and siblings, varied from some involvement to a great deal of involvement, evidence that there are many influences on young children's road safety education. This has implications for the dissemination of information, and for strategies to help ensure that children receive consistent road safety messages. No research appears to have been carried out on the practices and attitudes of grandparents. However, with evidence that their role in the

care of young children is increasing and with one quarter of families reporting that grandparents have a great deal of involvement, this may be an area of increasing importance.

Whilst parents identified teachers and child care staff as having a great deal (39%) or quite a lot of involvement (34%) in road safety, it is clear from the teacher survey conducted as part of this research, and from existing research (Ball, Braithwaite & Low 1994) that the amount of road safety education that takes place in schools and children's services is minimal. Those parents who rated themselves as having less than a great deal of involvement were more likely to nominate teachers or child care staff (20%) or road safety officers and police (14%) as having a great deal of involvement than other family members - typically, these were mothers whose highest level of education was the School Certificate and who either did not work outside the home or worked in part time clerical occupations.

Road safety officers and police were seen to have more involvement than other government or council representatives, but over half of the parents who responded indicated that both these groups had minimal or no involvement in road safety. The small number of parents who indicated that other people were involved in road safety usually mentioned informal carers or other family relatives.

There were some significant differences in the involvement of family members, teachers and other community workers, for the key groups targeted in the survey. When rural and urban responses were compared, urban parents reported significantly more involvement than those in rural areas $\chi^2(4)=17.7$, $p<.01$.

Aboriginal families reported significantly less involvement for parents than non-Aboriginal families, $\chi^2(8)=81.7$, $p<.001$. Only 65% of Aboriginal parents reported that parents had a great deal of involvement, compared to 89% of non-Aboriginal families. However, Aboriginal families reported significantly more involvement of grandparents $\chi^2(8)=16.03$, $p<.05$, teachers $\chi^2(8)=21.38$, $p<.01$, road safety officers (RSO's) and police $\chi^2(8)=16.39$, $p<.05$ and other government and council staff $\chi^2(8)=17.67$, $p<.05$ than non-Aboriginal families.

Families who regularly spoke a language other than English (LOTE) at home rated the involvement of RSO's, and police $\chi^2(8)=19.04$, $p<.05$, and other government and council workers $\chi^2(8)=21.08$, $p<.01$ as significantly higher than the English speaking background (ESB) group.

Table 5
Percentages (rounded) of Parents Responding on a Four Point Scale to Their Opinion on the Involvement of Family Members, Teachers, and Other Community Representatives in Young Children's Road Safety.

	No involvement	Some involvement	Quite a lot of involvement	A great deal of involvement
Parents (n=825)	1	5	9	85
School teacher/ child care staff (n=781)	3	24	34	39
Brothers, sisters or friends (n=776)	6	32	33	29
Grandparents (n=786)	10	36	27	27
Others (n=115)	36	27	12	25
Road safety officers/police (n=756)	15	43	19	23
Government/ Council (n=744)	37	37	13	11

3.3.2 Parent Ranking of the Best Ways to Teach Road Safety

Parents were asked to rank their opinions as to how children can best be taught about road safety. Although they were asked to rank seven teaching methods from the first best way to the seventh best way, many parents gave the same ranking to more than one method, indicating that they saw them of equal benefit. Most parents felt that they themselves were the main providers of road safety education. Over half of respondents (51%) felt that real life experiences with parents, road safety as part of everyday learning (38%) and discussion at home (29%) were the best ways children learnt about road safety.

The use of resources at home ranked much lower, and whilst 9% of parents ranked this as the first best way, 30% gave it the lowest ranking. This has implications for the development and distribution of resources, which may well go unused even if available to parents if they are not believed to be effective. Parents' perception of resources could be an important area of research.

The low ranking of resources as an effective way to teach road safety was an unexpected finding given that most road safety initiatives rely very heavily upon high quality resources. One issue may be that these are aimed either at children or at parents, and parents have stated a very clear preference for resources that parents and children can use together (86% of respondents, see Table 17). This was also a main finding of the evaluation of *Our Children Our Responsibility* (MRA 1995).

As a whole, substantially fewer parents saw teaching methods that are likely to be available through school as the best way to educate children about road safety, and ranked discussions with teachers (19%) higher than children's real life experiences with teachers (15%), or the use of resources at school (also 15% of respondents). This may be because of perceptions about the constraints of learning in a classroom rather than in the road environment. However, of those who ranked teachers as having a great deal of involvement in children's road safety education (39% of parents), 23% saw discussion with teachers as the first best way to teach road safety, and 18% saw using resources at school as the first best way.

Aboriginal families ranked discussion with teachers significantly higher than non-Aboriginal families $\chi^2(14)=36.59$, $p<001$ and 44% of Aboriginal families rated it as the first or second best way compared to 30% of non-Aboriginal families. The use of resources at school also ranked higher (36% ranked it as the first or second best way compared to 27% of non-Aboriginal families). However, Aboriginal families were much less likely $\chi^2(14)=50.29$, $p<.001$, to rank real life experiences at home as highly (57% ranked it the first or second best way compared to 76% for non-Aboriginal families).

LOTE families ranked teaching available through school more highly than ESB families, although family teaching methods still rated more highly than experiences with teachers (teachers were not seen as having significantly greater involvement in children's road safety for the LOTE group than for the ESB group). For LOTE families, real life experiences with teachers rated particularly highly (46% of LOTE families saw this as the first or second best way to teach road safety compared to 33% of ESB families). Resources at school were also ranked highly (36% rated it as first or second best way), somewhat higher than resources at home (29%).

There were no significant differences in the responses of Italian rural and urban families, and most fitted fairly closely to the responses of the group of parents as a whole. However, only 79% of respondents perceived that parents had a great deal of involvement. 47% of (Tongan respondents) reported a great deal of involvement for siblings and friends and 44% for RSO's and police. Tongan parents were also much more likely to rank discussion at home as the best way to teach road safety (28% ranked discussion with teachers and 48% ranked discussion at home as the first best way to teach road safety. Real life experiences with parents was ranked first by 44% of parents, but road safety as part of everyday learning by only 20% of parents, and resources at home as the best way by 4% of parents).

Table 6
Percentages (rounded) of Parents Ranking of their Opinions about the Best Ways to Teach Young Children about Road Safety. (Parents often ranked teaching methods equally)

	First best way	Second best way	Third best way	Fourth best way	Fifth best way	Sixth best way	Seventh best way
Real life experiences with parent (n=804)	51	22	10	7	3	5	3
As part of everyday learning (n=808)	38	18	20	5	12	2	5
Discussion at home (n=805)	29	21	21	13	7	7	2
Discussion with teachers (n=803)	19	14	13	18	20	8	9
Real life experiences with teachers (n=794)	15	21	17	14	15	8	10
Using books/pictures/videos at school (n=795)	15	15	9	9	9	28	16
Using books/pictures/videos at home (n=786)	9	14	12	9	9	18	30

- yes this would be an interesting area to follow up.

3.3.3 Parent Ratings of the Importance of Key Road Safety Issues

In order to identify how important it was for children to know about the key areas of road safety, and whether some areas were viewed as more important than others, parents were asked to rate 10 given areas of road safety according to how much young children needed to know about them. Seventy per cent or more of parents ranked all given areas as very important. However, Table 5 indicates that knowing how to cross a road safely was regarded as very important by the highest proportion of parents (98%) followed by where to play safely (90%), to wear a helmet when cycling and knowing how to cross a road with parked cars (both 89%). Whilst parental concern is highest for pedestrian safety, most traffic-related accidents for young children occur when they are car passengers. Other research (Antill 1991) has also indicated that pedestrian and, in particular, road crossing issues were of most concern to parents.

71% of parents felt that young children needed to hold an adult's hand whilst walking, but as this is a key pedestrian safety message for young children, a higher percentage would be desirable. Almost as many parents (70%) felt children needed to recognise road traffic signs. This was one of the most common areas of road safety that parents reported children practiced. Whilst, for parents as a whole, one-fifth thought that is was less than very important for young children to know how to use a child restraint, rural parents rated how to use a child restraint $\chi^2(4)=12.29$, $p<.05$ and to walk facing oncoming traffic if there is no footpath $\chi^2(4)=11.07$, $p<.05$ as significantly more important than urban parents.

Comparisons between Aboriginal and non-Aboriginal families indicated that Aboriginal families rated the importance of hand holding $\chi^2(8)=17.20$, $p<.05$, using the kerbside door $\chi^2(8)=18.20$, $p<.05$ and recognising traffic signs $\chi^2(8) 22.43$, $p<.01$ as significantly more important, though non-Aboriginal families rated wearing a bicycle helmet as more important $\chi^2(8)=17.14$, $p<.05$.

LOTE parents, when compared to the ESB group, were less likely to rate knowing how to use a child restraint (21% of LOTE parents rated this only as quite important), holding hands, helmet wearing and crossing with parked cars. 70% of Italian families rated knowing how to use a child restraint as very important, and 67% rated hand holding as very important.

Table 7
Percentages (rounded) of Parents Responding on a Four Point Scale to Their Opinion as to What Children Need to Know About Road Safety.

	Not at all important	Of some importance	Quite important	Very important
How to cross a road safely (n=830)	<1	<1	2	98
Where to play safely (n=822)	<1	1	9	90
How to cross a road with parked cars (n=815)	<1	2	9	89
To wear a bicycle helmet when cycling (n=821)	<1	2	9	89
To get in and out of a car using the kerbside door (n=814)	<1	3	16	81
How to use a child restraint in the car (n=812)	2	7	13	78
To walk facing oncoming traffic if there is no footpath (n=814)	1	4	19	76
To stay out of the traffic environment (n=809)	2	6	20	73
To hold an adult's hand when walking (n=817)	1	7	21	71
Recognising road and traffic signs (n=815)	1	5	24	70

3.3.4 Children's Age and Unsupervised Access to the Road Environment

Most parents believed that road safety education should begin when children are 2 or 3 years old, but a substantial number believed it should begin in the first year of life. 17% of parents thought that it could wait until their child was 5, or older, although by this age many children are likely to be experiencing considerable independence. One fifth of parents believed that children became aware of the dangers from traffic by the age of 3, however, a substantial proportion believed this did not occur until children were at school, and about 5% of parents until children were at high school.

As it is assumed that parents are the most likely decision makers about when and how often children have access to the traffic environment, they were asked the ages at which they felt children could deal with a range of traffic situations (Table 8). The results show that whilst many parents felt that children could cross quiet streets unsupervised at the age of eight, most do not believe that children can handle other traffic situations until they are 10 years old, by which time they are able to make short journeys alone, play outside of the home, cross busy streets and cycle in the street unsupervised. Parents' protective behaviour for the most part appears consistent with the abilities of young children, however, a significant minority indicate that they would allow children unsupervised exposure at a much younger age - by the age of five, 7% of parents felt children could make short journeys alone, 10% that they could cross quiet streets alone, and 3% that they could cycle in the street unsupervised.

Whilst current road safety education advice of the leading NSW Road Safety Education Program is that children should not be unsupervised under the age of 10 (ECRSEP, 1996b), 24% of parents believed children could cross busy streets before this age, 64% believed that children could cross quiet streets alone and 48% believed they could make short journeys before children were 10 years old. A small number of parents felt that it was not until children were in high school that they were able to deal with more complex traffic situations, particularly crossing busy streets, which were seen to pose much more danger to children than quiet streets. 93% of parents felt that children, by 11 years of age, could cross quiet streets alone, compared to only 65% of parents for busy streets.

The lower age ranges at which some Australian children are allowed unsupervised access are probably similar to those of the American children in the Rivara et al study (1989), however, this type of exposure appears to occur less frequently in Australia. 34% of American parents report that 5 year old children could cross quiet streets alone, compared to 10% of Australian parents. There is conflicting evidence as to the type of traffic environment that puts young children most at risk of accidents. High traffic density and visual obstruction were indicators in a case control study carried out in Western Australia (Stevenson 1995), other studies have pointed to risk factors such as on-street parking (Roberts et al, 1995), and low traffic density roads (Maisey 1985) where children may have greater unsupervised exposure if they are considered by parents to be low risk environments.

Table 8**Parents' Opinion of Ages at which Children can Deal with Traffic Situations (Mean Age, Minimum and Maximum and Mode in Years)**

At what age can children...	Mean age (in years)	Mode (in years)	Minimum/ maximum age (in years)
Make short journeys unsupervised by an adult (n=806)	8.8	10.0	2-18
Cross quiet streets unsupervised by an adult (n=807)	8.1	8.0	3-18
Cross busy streets unsupervised by an adult (n=801)	10.5	10.0	3-20
Play outside of the home unsupervised by an adult (n=792)	8.4	10.0	1-18
Cycle in the street unsupervised by an adult (n=795)	10.1	10.0	4-18
Become aware of dangers from traffic (n=797)	5.8	5.0	1-18
Begin to be taught about road safety (n=804)	3.0	2.0	0-17

3.3.4.1 Urban Versus Rural Responses

The most significant area of difference between urban and rural road safety attitudes and practices appears to be the age at which parents perceive children can deal with traffic situations alone, or with a child of the same age (Table 9). Families in rural locations apparently allow children access to the road environment at a younger age. Conversely, children in urban areas were more likely to begin to be taught about road safety at a younger age, $t(802)=-3.0$, $p<.01$, but there was no significant difference in the age at which parents perceived that children became aware of danger from traffic, $t(795)=-.28$, n.s. The data indicates that children in rural areas may be exposed to a range of traffic situations without supervision at a younger age, yet their road safety education may not begin until a later age. Whilst analysis of data for traffic-related casualties in New South Wales indicates that children in rural areas are at a considerably higher risk of casualty than the State average, this increased risk is whilst they are vehicle passengers; the majority of child pedestrian casualties occurs in urban areas (RTA, pers.comm.).

Table 9
Urban Versus Rural Responses

Traffic situation child can deal with unsupervised	Mean age rural respondents	Mean age urban respondents	t	df	p
Make short journey	9.0	8.6	2.55	804	.01
Cross quiet streets	7.7	8.5	5.50	805	.001
Cross busy streets	10.3	10.8	3.44	799	.001
Play outside of the home	435	357	5.11	790	.001
Cycle in the street	9.7	10.5	4.28	793	.001
Age child is aware of traffic danger	2.8	2.8	-.28	795	n.s.
Age begin to teach child about road safety	3.2	2.8	-3.00	802	.01

3.3.4.2 Aboriginal Versus Non-Aboriginal Responses

Aboriginal children are more likely to deal with traffic situations at a significantly earlier age than non-Aboriginal children, and more likely to begin to be taught about road safety at an older age $t(797) = 3.54$, $p < .001$ (Table 10). There is, however, no significant difference in perceptions about the age at which children begin to become aware of dangers from traffic $t(790) = .29$, n.s. There were no significant differences between responses from Aboriginal families living in urban and rural locations as to the ages at which children could have unsupervised access to the road environment, however, the difference as to the age at when children should begin to be taught was significant, with urban Aboriginal families at 2.78 years and rural Aboriginal families at 3.78 years.

Table 10
Aboriginal Versus Non-Aboriginal Responses

Traffic situation child can deal with unsupervised	Mean age Aboriginal respondents	Mean age non-Aboriginal respondents	t	df	p
Make short journey	7.9	9.0	-5.14	799	.001
Cross quiet streets	7.4	8.2	-4.56	800	.001
Cross busy streets	9.7	10.7	-5.13	794	.001
Play outside of the home	7.2	8.7	-5.76	785	.001
Cycle in the street	9.3	10.3	-4.4	788	.001
Age child is aware of traffic danger	5.9	5.8	.29	790	n.s.
Age begin to teach child about road safety	3.4	2.9	3.54	797	.001

3.3.4.3 LOTE Versus ESB Responses

Data analysis indicated that LOTE families allow children unsupervised access to a range of traffic situations at an older age than ESB families (Table 11). For example the mean age for LOTE children to make short journeys alone was 9.4 years compared to 8.6 years for ESB families $t(799) =$, $p < .001$ and for cycling in street 10.8 compared to 9.9 years $t(788) = 3.72$, $p < .001$. LOTE children were also older than ESB children when they were perceived to be aware of danger and when they began to learn about road safety. For Italian and Tongan children the mean age for journeying alone was 9.7 years, and for crossing quiet streets 9.0 years; however for other sorts of access the mean age for Italian children was higher than for Tongan children e.g., crossing busy streets 10.9 compared to 10.5 and cycling in the street 11.3 years compared to 10.6 years.

Table 11
Mean Ages and Two Tailed Tests of Significance for LOTE Versus ESB Respondents

Traffic situation child can deal with unsupervised	Mean age LOTE respondents	Mean age ESB respondents	t	df	p
Make short journey	9.4	8.6	3.67	799	.001
Cross quiet streets	8.7	8.0	3.49	800	.001
Cross busy streets	10.8	10.4	1.52	794	n.s.
Play outside of the home	9.0	8.3	2.83	785	.01
Cycle in the street	10.8	9.9	3.72	788	.001
Age child is aware of traffic danger	6.5	5.7	3.14	790	.01
Age begin to teach child about road safety	4.2	2.8	8.59	797	.001

3.3.5 Parent Attitudes Towards the Influence of Gender on Road Safety

Because young boys are about three times more likely to be involved in pedestrian accidents than young girls, and this might reflect practices in road safety education and unsupervised access, parents were asked if they perceived any differences in the ways that boys and girls deal with traffic situations. More than three-quarters of parents did not believe that there were differences and chi-squared tests indicated that there was no significant difference between the perceptions of mothers and fathers about the way that boys and girls dealt with traffic situations $\chi^2(1) = .98$ n.s.. Almost 100 respondents expressed no opinion or said that they did not know whether there were differences. Comments made by the parents who did perceive differences indicated that they saw boys as more likely to take risks and for girls to be more cautious and more attentive.

The data indicates that the role of parents in road safety education is not uniform. There is sufficient variation in their opinions and practices for strategies to be adopted for parents in different geographic locations and from varying cultural backgrounds. This might include the involvement of other family members, such as grandparents, or the increasing intervention by teachers and other community workers. If school based programs are not strengthened, and their methods expanded to include experiences in the real road environment, then parents should be made aware that road safety educational programs are likely to provide the bare minimum in terms of road safety education for young children.

Parents were presented with a range of road safety situations and asked to rate how often these situations occurred, thinking about a particular child, (where age and gender were to be specified). The aim of these questions was to determine whether there were behavioural differences attributable to age or gender, and

whether there were any particular difficulties experienced. Table 12 shows that for the collective data, about one third of children often or always fight or play noisily in the car (35% of children) and often or always do not want to hold an adult's hand (30%). Parents appeared to experience less difficulty with children's willingness to wear seat belts (64% stated that this never occurred). Other less problematic areas were wanting to cycle without a helmet (52% stated this never occurred), or walking alone to a friend's house (61% stated this never occurred). Nevertheless, these were situations regularly faced by over 10% of parents. Chi-squared tests revealed that there was a very significant difference in the willingness of boys and girls to hold hands, with boys more likely to resist hand holding $\chi^2(6)=31.04$, $p < .001$. No other areas showed a significant difference by gender of child.

Table 12
Percentages (rounded) of Parents Responding on a Four Point Scale to How Often They Experience Various Passenger and Pedestrian Situations with their Child.

How often does your child ...	Never	Sometimes	Often	Always
Fight or play noisily in the car (n=831)	11	53	27	9
Not want to hold an adult's hand (n=830)	15	55	23	7
Want to cycle without a helmet (n=808)	52	31	12	5
Not want to wear a seat belt (n=832)	64	23	9	4
Remind parent's to follow road safety rules (n=830)	22	58	16	4
Want to walk to a friend's house alone (n=824)	61	28	8	3
Open car doors without permission (n=830)	45	46	7	2

3.3.6 Parents as Practical Roadside Trainers

There is considerable evidence in the data that supports the potential of parents as practical roadside trainers - that is, as teachers of safe behaviour in the road environment. Firstly about half of all respondents stated an interest in attending parent and child training sessions and/or a meeting about pedestrian safety. Pedestrian safety was the main concern of parents, though there was a high level of concern about road safety. For Aboriginal and LOTE families, the interest in pedestrian safety is particularly strong. Secondly, parents indicated that they regarded roadside learning as more effective than the use of resources and saw themselves as the key providers of road safety education. Whilst most parents did not consider that they needed further information, responses to questions about their children's current road safety practices indicate that parents do lack considerable current knowledge about best practice and current road safety messages. Whilst age can only be used as a guide to the road safety abilities of children, many are exposed to traffic when it is unlikely that they would have developed the skills required for safe pedestrian behaviour and where impulsive behaviour is still likely to occur frequently. For parents who indicated a high expectation of the input of teachers, child care staff, and other community workers in the road safety education of young, it would also provide a means to inform them and encourage them to increase their role. Finally there was a high response rate (68%) and a high proportion of parents who have contact numbers and expressed a willingness to be contacted for follow up information (38%).

3.4 FINDINGS RELATING TO OBJECTIVE 2

Objective 2 was to examine the relationship between children's classroom training and parents' practices and awareness of road safety education.

A major focus of this study was to compare what children learn at school or in a child care setting (long day care or family day care) with what they learn at home, given that road safety education at home is likely to be more frequently reinforced and actually carried out in the road environment, but that road safety education programs are implemented through schools and children's services. To identify what takes place in the classroom/child care setting, the key messages of the *Kids and Traffic* Early Childhood Road Safety Education Program and the *Street Sense* Infant/Primary School Road Safety Education Program are summarised and the results of the teacher and child care/family day care staff survey are presented. Parents were asked, with respect to one specific child, to describe the road safety rules that this child practised, and how often examples of unsafe behaviour occurred.

All classroom teachers (kindergarten to year 2) and child care staff with direct responsibility for the children of families surveyed were asked to complete a one page survey to identify if and how road safety education was included in the school curriculum or child care program, and whether parents asked about issues related to road safety.

3.4.1 Long Day Care Staff Survey

Eight surveys were received from centre staff. All staff stated that road safety was included in some way in the curriculum, though examples as to how it was implemented were bike safety days, on excursions, or spontaneously as situations arose. One teacher commented "every day we play with bikes, where to ride, to look (out) for others". One teacher stated that they had the Kids and Traffic Kit, but not how it was used. "We had a bike safety day last year which proved very successful". One respondent had been asked about child restraints by a parent, but the other respondents had not been asked about road safety issues by parents.

3.4.2 Family Day Care Staff Survey

Five surveys were received from Family Day Care staff. Family Day Care staff reported that they had plenty of opportunities to include road safety education. Several respondents reported that it was part of their daily routine, as children in family day care have frequent opportunities to be in the traffic environment, certainly more so than children in a school or centre setting. Examples of how road safety was included in the program were: the use of zebra crossings and the need for children to "hang on crossing streets". Parents had not asked about road safety issues, though one reported that she did discuss issues with parents when the need arose.

3.4.3 Teachers' Survey

Eighteen responses were received from K-2 teachers. All but one urban school teacher reported that road safety education was included in the class curriculum, usually as part of the transport or safety unit within Personal Development Health and Physical Education (PDHPE). Typical comments were: "it is included once per year" or "it is a unit in PDHPE so it is covered at some time throughout the year". Two teachers discussed road safety when the need arose - after complaints from parents and bus drivers, or if the subject came up in books or through the Street Sense Road Safety Calendar. All but one teacher reported that parents did not ask about road safety related issues and one reported that they had clearly defined procedures for dismissing children across roads and that parents were not allowed to park their cars in the school grounds. Teachers from one rural location reported that road safety had only been implemented via Bike Week.

Whilst teachers and child staff regard road safety as part of their teaching, in those schools and child care centre settings surveyed, it is not included regularly or as part of everyday teaching. Given that 39% of parents regarded teachers and child care staff as having a great deal of involvement in children's road safety, and that about one-quarter of parents ranked teaching methods available through school or child care as one of the first or second best ways of teaching children about road safety, parents appear to be unaware of the very limited amount of road safety education that takes place in schools and child care centres. Antill (1991) noted that many parents believed that

teachers of 5 to 7 year old children did less than they should regarding road safety education. When asked to comment on the role of families in children's road safety, most teachers and child care staff indicated that families did rather less than might be expected and that this was in reality the responsibility of the parent, "Road safety education should begin at home and not be left to the class teacher to introduce and reinforce. It is a parent's responsibility to educate their child in this matter before the child comes to school"; "Children learn by example and many adults do not set a good example in road safety"; "Families should reinforce appropriate behaviours at home and provide good role models". There was little evidence that families and teachers/child care staff work in co-operation to achieve safer road use behaviour for young children, though this is the goal of road safety education programs.

3.4.4 The Early Childhood Road Safety Education Program

The Early Childhood Road Safety Education Program promotes the achievement of safer road user behaviour in the areas of pedestrian safety, passenger safety and safe play. There is ongoing review and evaluation of existing strategies and resources to guide future Program directions with a main focus this year on seminar inservicing of child care staff. *Working with Families* is one of four inservices that have been developed as part of the Program's strategy to implement family education. Road safety education kits (Kids and Traffic Kits) and a range of resources including storybooks, audio tapes, jigsaws, posters and stickers are distributed to all children's services. It is intended that road safety is part of the daily program.

Key messages of the program are:

- Every child up to 8 years should hold an adult's hand in the road traffic environment. If an adult's hand is not available, ensure the child holds onto a pram, bag or adult's clothing.
- Every child up to 10 years should be accompanied and actively supervised by an adult in the road traffic environment.
- Children should use a recommended car seat for as long as is physically possible, then use a full size booster seat with full back and sides.
- Always check your child's seatbelt is buckled up.
- Children should always enter and exit the car using the rear kerbside safety door.
- Adults are responsible for assessing the safety of children's play areas. Adults need to monitor and actively supervise children at all times.
- Adults are responsible for ensuring children always wear a correctly fitted helmet when riding wheeled toys and bikes.

Slogans include "stop, look, listen and think" and "click clack front 'n back".

(Source: Early Childhood Road Safety Education Program, Family Information Sheet)

3.4.5 Street Sense - the Infant /Primary School Road Safety Education Program

In lower primary (K-2), road safety is included in a mandatory unit on Safety. There is an extensive range of resources available to schools including a calendar for use in the kindergarten classroom, and available via the school to all kindergarten parents, storybooks, tapes, posters and stickers. Whilst the program does not have a key message component, the road safety issues the program addresses are bike safety, pedestrian safety, bus safety passenger safety and safe play:

- ride in a safe place
- wear a bicycle helmet
- wear light colours when out after dark
- wear a seat belt
- stop and wait when you get off the bus.

Safety slogans include "wait, watch, walk", "stop, look, listen, think" and "click clack, front 'n back".

3.4.6 Road Safety Rules Practised by Specific Children

Parents were asked to think about one particular child (giving the child's age and gender), and to describe the road safety rules that he or she practised. Results appear to indicate that either children are practising very little in the way of road safety, or that parents are unaware of what rules their children practice. The most commonly practised rule was to use a crossing drill (44%). Whilst parents most frequently nominated looking left, right and left again

(i.e., reversing the drill) or, (as was once taught at school), looking right, left, right, only 5% of parents nominated the current road safety messages of wait, watch, walk or stop, look, listen, (2 parents added the need to think). The next most commonly mentioned rule was wearing seat belts (26% of parents), holding a hand or stroller (17%); wearing a bike helmet, or another bike safety rule (14%); and knowing how to use a crossing aid correctly (13%). More parents (8%) stated that their child recognised road signs (designed for drivers) than reported that their child practised road safety rules such as the need to stop at the kerb or driveway (5%), use the kerbside door (4%), or to never cross alone (5%). As an example of safe behaviour, several parents stated that their child always waited for the parent to catch up when they got to the kerb.

3.4.7 Road Safety Experiences with One Specific Child

Parents were presented with a range of road safety situations and asked to rate how often these situations occurred (again, still thinking about a specific child). The aim of these questions was to determine whether there were behavioural differences attributable to age or gender, and whether there were any particular areas of difficulty.

The results are contained in Table 13: about one third of children often or always fight or play noisily in the car (35% of children) and often or always do not want to hold an adult's hand (30%). Parents appeared to experience less difficulty with children's willingness to wear seat belts (64% stated that this **never** occurred), wanting to cycle without a helmet (52% stated this **never** occurred), or walking alone to a friend's house (61% stated this **never** occurred). However, these were situations regularly faced by over 10% of parents. Chi-squared tests revealed that there was a very significant difference in the willingness of boys and girls to hold hands, with boys more likely to resist hand holding ($\chi^2(6)=31.04$, $p<.001$), but no that other areas showed a significant difference by gender of child.

57% of parents reported that children reminded them to follow road safety rules - particularly with regard to speeding and seat belt usage, an indication of the importance of role modeling, through no parents reported that children reminded them of pedestrian safety rules.

Parents in rural areas were significantly more likely to find that children wanted to cycle without a helmet ($\chi^2(4)=10.44$, $p<.05$) or to want to walk to a friend's house alone ($\chi^2(4)=10.93$, $p<.05$).

For Aboriginal families there were significant differences in all ratings of parent's experiences with one specific child. It may be that Aboriginal parents are more likely to report unsafe behaviour, or that Aboriginal children comply with safe behaviour rules less often. For example, 18% of Aboriginal families reported a child never wanted to hold hands compared to 5% of non Aboriginal families; 12% never wanted to wear a restraint (compared to 2%); 12% never wanted to wear a helmet (compared to 3%); 11% always wanted to walk alone (compared to 1%).

LOTE parents reported significantly less compliance with road safety rules only in the areas of passenger safety. Only 31% of LOTE families reported that children sometimes did not want to wear a seat belt, 20% that children often or always opened a car door and 12% that they always did not want to wear seat belt (compared to 22%, 7% and 3% respectively for the ESB group).

Table 13
Frequencies of Road Safety Rules that Parents Report Child Practices

	Total rules practiced (n)
Using a crossing drill (incl. left, right, left & right, left, right)	369
Wearing seat belts	217
Holding hand or stroller	144
Wearing a bicycle helmet/bike safety	116
Using a crossing aid correctly	106
Recognising road signs	70
Doesn't cross alone/waits at kerb to cross with adult	42
Stopping at kerb/driveway	38
Walk (don't run)	36
Using the kerbside door, other passenger safety rules	31
Wait, watch, walk	23
Reminds parent of speed rules/road rules	22
Looks	21
Staying on the footpath when walking	19
Safe play rules	16
Stop, look, listen (think)	14
Bus safety	14
Face traffic when walking	9
Aware of safety danger/is cautious	9
Click, clack, front and back	8
Car park safety	5

3.5 FINDINGS RELATING TO OBJECTIVE 3

Objective 3 was to identify effective interventions in targeting parents about the road safety of young children.

Section 2 contains details of the principal road safety interventions that have been evaluated. Of most relevance to Rothengatter's parent training program (1984). To determine the effectiveness of various interventions, parents were asked, via the family survey, about the use of road safety resources; who the resources should target; about the availability and requirements of road safety information; and their interest in attending road safety meetings or training.

3.5.1 Existing use of Resources

Parents were asked about both the type of road safety resources that they had used with their children and whether they required more road safety information (Table 14). The most commonly used resources were road safety story books, used by over one half of parents (57%) even though resources used at home ranked as the least best way to teach children about road safety. The next most frequently used resources were pictures and stickers (46% each) and information pamphlets (37%). Whilst 20% of parents reported having used videotape, only 9% had used audio tape, perhaps an unexpected finding as there are a considerable range of audio tapes available and these are a common resource in road safety education programs, and when considering that most families report that the car is their main form of transport. It may be that future tapes need to be designed to appeal to both parents and children.

Different promotional strategies may be needed for different target groups.

Table 14

Frequencies and percentages (rounded) of parents reporting having used various road safety resources with their children.

Type of resource	Number of respondents	Percentage of respondents
Storybooks	473	57%
Pictures	384	46%
Stickers*	381	46%
Pamphlets	311	37%
Videos	167	20%
Audio tapes	76	9%

*Roads and Traffic Authority Road Safety Stickers were given out to children either when surveys were distributed or on their return.

3.5.2 Factors impacting on parents' ability to teach road safety

In order to identify some of the constraints on families that influence their ability to teach, parents were asked whether there was an impact from a range of factors including behavioural characteristics of children, lifestyle, and the availability of information or resources (Table 15). The most frequently reported factors that impacted on parents' teaching of road safety were the dependence on the car (31% of parents) and a lack of resources to use with children (29%). The reliance on the car as a form of transport may be a major factor in the development of children's road safety knowledge. 88% of parents stated that it was their first main form of transport. Whilst this has contributed to the fall in the number of pedestrian accidents - simply because children do not have as much access to the traffic environment as they once did, it also means that children are less likely to have the opportunity of walking in a wide variety of traffic environments, and road safety and familiarity with the traffic environment is gained from the inside of a car.

Whilst 27% of parents indicated that they would like more information about road safety to teach to their children, only 19% of parents felt that a lack of information actually had an impact on their teaching of road safety. Similarly a survey of preschool aged children found that parents did not indicate much need for more information, but felt that they had "enough basic knowledge to teach without additional assistance", (MRA, 1995:7). Whilst one fifth of parents (20%) reported that their children would not concentrate on road safety issues when they were being taught, only 6% reported that their child did not show any interest in learning about road safety. 15% of parents felt that they lacked time to teach their children about road safety, and 12% that they sought to avoid the traffic environment when they were with their children.

Table 15
Number and Percentage of Parents who Report having Experienced the Following when Teaching Their Children about Road Safety.

Have you experienced the following ...	Number of respondents	Percentage of respondents
Always travel by car	258	31%
Lack of road safety resources to use	240	29%
Child lacks concentration regarding road safety	170	20%
Lack of information about what to teach	161	19%
No time to go for walks with child	129	15%
Avoid traffic environment with children	97	12%
Child shows no interest in road safety	52	6%

When asked if road safety resources are of most use when directed to parents, or to children or to parents and children to use together, 86% of parents indicated that road safety resources would be of most use if directed to parents and children to use together (Table 16). This clear preference was reported by all targeted groups. It appears, therefore, that parents felt that they did not particularly need resources, but if they were available, then resources that could be used together by parents and children would be of most use.

Table 16
Targeting of Road Safety Resources.

Direct road safety resources to...	Number of respondents	Percentage of respondents
Parents and children to use together	684	86%
Children	88	11%
Parents	27	3%

There was considerable interest in road safety meetings. For parents as a whole, 51% said that they would be interested in attending a parent road safety meeting that deals with parents and child training session in road safety. The second highest level of interest was for a road safety meeting for teaching children to be safe pedestrians (48%), 44% for safe play and 39% for passenger safety. This also supports the earlier finding that parents' main concern in road safety is pedestrian safety.

Given these findings, road safety meetings would seem an appropriate intervention. There is a need for a focus on pedestrians and appropriate resources that target both parents and children together.

Table 17
Parent Interest in Road Safety Meetings.

Interested in a parent road safety meeting regarding ...	Number of respondents	Percentage of respondents
Parent and child training sessions in road safety	422	51%
Teaching children to be safe pedestrians	397	48%
Teaching children about safe play spaces	371	44%
Teaching children to be safe passengers	323	39%

A higher proportion of parents in rural areas found that the reliance on car travel had an impact on the teaching of road safety (36% compared to 25% of urban parents). There was a significant difference in the use of the car as the main form of transport with a higher proportion of parents using the car in rural areas $\chi^2(5)=21.77$, $p<.001$. For 92% of rural families, the car was their main form of transport, compared to 85% of urban families. (what are the relevant proportions?). 55% of parents in rural areas stated that they would be interested in attending parent and child training sessions in road safety, compared to 46% of urban parents.

The only areas in which Aboriginal families reported a significantly higher use of resources was in road safety videos (31% of parents) $\chi^2(2)=19.18$, $p<.001$, and audio tapes (16% of parents) $\chi^2(2)=11.82$, $p<.01$.

The level of demand for information amongst Aboriginal families was similar to that of all families. The most frequently selected choice of meetings was for pedestrian safety, and over one half of Aboriginal respondents stated that they would be interested in at least one of the road safety meetings.

A significantly higher percentage of LOTE families had used pictures, videos and storybooks but fewer had used audio tapes. LOTE families more likely to report that lack of time, and always travelling by car (45% of parents) impacted on their teaching of road safety, but were twice as likely to report that their child lacked interest in road safety matters. A higher proportion of LOTE families reported a lack of information and resources, which may, in part, be due to a lack of availability of translated material. 23% of LOTE parents said that they lacked information about what to teach and 38% that they lacked resources to use with children (compared to 19% and 27% respectively for the ESB group).

The highest level of interest was in teaching children to be safe pedestrians (54% of respondents), lowest for passenger safety (41% of respondents).

Table 18
Frequencies of Parents Who Wanted More Information about Road Safety, and the Areas of Information Required. (n=221, 27% of respondents)

	Number of respondents	Percentage of respondents
Bike safety	31	14
Farm transport safety	4	2
Safety in car parks	7	3
Children's age and ability in traffic	18	8
All areas	28	13
Pedestrian safety	54	24
Effects of unsafe behaviour in traffic	7	3
Passenger safety	14	6
Safe play	6	3
Bus safety	12	5
Crossing outside school	2	1

1 each of rural trains, bike training centre, car games, crossing with a crossing supervisor.

4. RECOMMENDATIONS

Pedestrian injury is a major public health issue for young children. There is strong evidence that traditional forms of road safety education, such as theoretical classroom teaching, should be supplemented with practical roadside training (ie teaching children safe behaviour in the traffic environment) in order to achieve improved safety behaviour and reduce the number of pedestrian accidents (Rothengatter 1984; Thomson & Ampofo-Boateng 1992). Road safety educational programs either assume that parents teach their children safe pedestrian behaviour or encourage them to do so by including road safety material for parents. Evidence suggests that many parents do not model appropriate road safety behaviour, frequently overestimate the understanding and abilities of young children in traffic and scarcely utilise road safety education material (Rivara, Bergman & Drake 1989).

This project aimed to investigate what parents do in the road safety behaviour and education of children and how this relates to road safety educational programs and their potential role as practical roadside trainers.

The data collected has the following potential benefits to road safety:

- It can be used as input to help ensure road safety educational campaigns better address the needs and orientations of parents;
- The research design and method provides a pilot study that can be duplicated in other states/territories to obtain national data on the views and practices of parents from a wide range of ethnic backgrounds and geographic locations that relate to the road safety education of children.

The following Recommendations are made:

1. **That initiatives be developed which involve families centrally in the road safety education of their children, for example, community meetings and practical roadside training sessions.** (See section 3.3.6 in which parents identify themselves as being the key providers of road safety education for their children).
2. **That strategies be devised to update the existing road safety knowledge currently held by families, in particular, by parents and grandparents.** (See Section 3.3.1 in which grandparents are identified as having an important role in road safety education, particularly in Aboriginal families).
3. **That all new road safety education initiatives provide opportunities for the development and joint practice of safe road user behaviours by children and their families.** (See Section 3.3.2 in which parents identify everyday experiences as playing a major role in children's development of road safety knowledge and behaviour).
4. **That strategies designed to address the differing needs of the target groups reported on in this study - in particular, urban versus rural families and Aboriginal versus non-Aboriginal families - be included in all new road safety education initiatives.** (See Section 3.2 and 3.3 in which these differences are described and discussed).
5. **That further investigation be undertaken into parents' perceptions of existing resources and into potential new resources.** (See Section 3.3.2 in which parents indicate that resources do not rank highly with them as a means of developing children's road safety knowledge. Also, Section 3.5 in which parents express a preference for resources aimed jointly at parents and children.)
6. **That road safety information and training programs should consider channelling funds towards children's services, health services and community organisations as effective means of targeting parents.** (See Section 2.1)

- 7. That further research needs to be carried out into the role of the family in the early childhood years.**
(See Section 2.1)
- 8. That a pilot program which addresses the issues raised in the first seven recommendations be developed, trialed and evaluated in 1997 - 8**

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6. GLOSSARY

Family Day Care

Family Day Care is a home-based child care service that is sponsored and co-ordinated through a local government council or community organisation. Up to five pre-school aged children are cared for in a registered carer's home. These licensed family day carers belong to a family day care scheme, and may offer care on a part-time or full-time basis. The family day care scheme locates children, sets fees and provides support to ensure good quality care.

Long Day Care

Long day care is a centre-based, licensed child care service. Long day care centres offer care for children from 0 - 5 years. Care is provided for 8 or more hours per day, 5 days per week for no less than 48 weeks per year, and children may attend on a part-time or full-time basis. They provide an education component as well as care for children.

Playgroup

Playgroup is an informal gathering of people with young children, aged 0 - 6 years. It is held at a local venue such as a house, hall or park, usually once or twice a week for about two hours.

7. APPENDICES

7.1 Parent Survey

7.2 Teacher Survey