

Towards active and independently mobile children

Survey review

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Garrard, J 2009, *Active Transport: children and young people. An overview of recent evidence*, Victorian Health Promotion Foundation (VicHealth), Melbourne.

Thomson, L 2009, *“How times have changed”: Active transport literature review*, Victorian Health Promotion Foundation (VicHealth), Melbourne.

Zubrick, SR, Wood, L, Villanueva, K, Wood, G, Giles-Corti, B & Christian, H 2010, *Nothing but fear itself: parental fear as a determinant of child physical activity and independent mobility*, Victorian Health Promotion Foundation (VicHealth), Melbourne.

In addition, two independent surveys were undertaken in 2009:

The Australian Council of Education Research (ACER) was funded to collect data on Victorian primary school children’s rates of active travel and from residents living in close proximity to primary schools.

The VicHealth Community Attitude Survey (CAS) was administered by the Social Research Centre to a random sample of 1500 Victorian adults to determine community sentiment on children’s active transport and independent mobility.

Background

Overall, the world's population is becoming less active. Unhealthy environments and increasingly sedentary lifestyles are contributing to rising rates of physical inactivity. Physical inactivity is now the fourth leading risk factor for global mortality (WHO 2010).

There is clear evidence of the fundamental health benefits to children who undertake regular physical activity (WHO 2010). These include improved fitness, reduced body fat, better cardiovascular and metabolic health, enhanced bone health and reduced symptoms of depression. The Australian Department of Health and Ageing (DOHA 2004) recommends children accumulate at least 60 minutes (and up to several hours) of moderate to vigorous physical activity (MVPA) every day. The recommended physical activity levels can be achieved through various combinations of play, recreation, physical education, and sport, as well as walking or cycling between destinations; the latter two activities are often referred to as *active travel*.

Garrard (2009), in her review of active travel, states that 'active travel has the potential to make a substantial contribution to children's daily physical activity' (Garrard 2009). In countries with high rates of walking and cycling, active travel tends to be a part of daily life across the population, including population groups less likely to participate in organised sport and exercise programs (Garrard 2009). In contrast to sport and play, the amount of active travel increases with age, with similar participation rates for girls and boys at most age levels. Not surprisingly, children who actively commute to and from school have higher levels of physical activity and improved cardiovascular fitness compared with children who do not do so (Davison et al. 2008). Moreover, Garrard (2009) argues that increased active travel – and therefore reduced motor vehicle use – confers additional benefits including community strengthening through increased social interactions on neighbourhood streets, and reduced congestion, noise, air and visual pollution.

Walking to and from school is both an essential component of active travel and an indicator of levels of active travel. Seminal research conducted in the UK by Hillman et al. (1990) found a dramatic decline in children walking to school on their own from a rate of 80 per cent of seven to eight year olds in 1971, to nine per cent in 1990. Similarly, Garrard (2009), drawing on Australian Bureau of Statistics data, describes a similar decline in Melbourne. In 1970, '55.3 per cent of young people walked to school or higher education, falling to 22.2 per cent in 1994' (Garrard 2009). As Garrard notes, 'although the trip to school is a relatively short one for the majority of Australian children, most of these trips are by car' (Garrard 2009).

There has also been a reduction in the overall numbers of children walking or cycling to school, independent of adults. In 2005, 10 per cent of Australian primary school children walked or rode to school by themselves or with other children compared with 55 per cent in 1974 (Peddie & Somerville 2005).

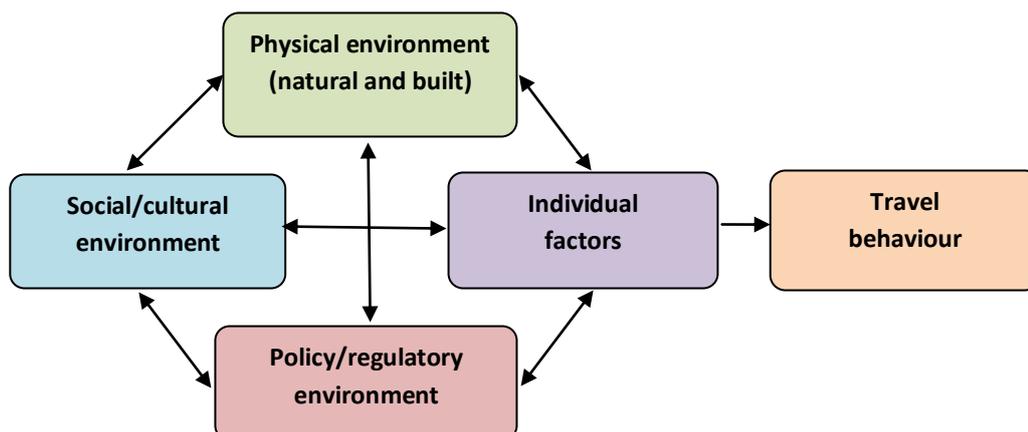
Independent mobility refers to children's freedom to move about unaccompanied by an adult in public spaces (Hillman et al. 1991). Zubrick et al. (2010) outline the importance of independent mobility for children: it helps develop motor, spatial and practical coping skills, builds local environmental knowledge and self-esteem, and helps acquire a sense of identity. Moreover:

"Children have a greater opportunity to interact with other children when they are not under adult supervision. This fosters independence and responsibility, which in turn builds children's confidence and social skills" (Zubrick et al. 2010).

Correlates of active travel: An ecological model

Why do parents drive their children? Garrard (2009) has developed a social-ecological model through which the multiple and interactive influences on children's active travel can be examined (Figure 1). The model highlights the interplay between the social, physical and policy environments, and individual factors in influencing travel behaviour. Importantly, Garrard understands these correlates to be both real and perceived, and applying equally to parents and children.

Figure 1: Social-ecological influences on children's active travel behaviour (in Garrard 2009, adapted from Gebel et al. 2005)



This social-ecological model is used to interpret the results of two independent surveys reporting on the attitudes and behaviours of Victorian parents, children and their neighbours regarding children's active travel and independent mobility: the Australian Council for Educational Research (ACER) surveys and the VicHealth Community Attitudes Survey (CAS), both undertaken in the second half of 2009 (see Table 1).

The surveys

In early 2009, ACER collected data in 19 Victorian primary schools from children (C) and parents (P), and from neighbours (NH) in geographically-bounded sections of six local government areas: Bendigo, Brimbank, Cardinia, Darebin, Geelong and Wodonga. Consent to conduct the surveys in schools was obtained from Department of Education and Early Childhood Development. Data were collected through separate surveys of children, parents or carers, and local residents.

The VicHealth Community Attitudes Survey (CAS) was a Computer Assisted Telephone Interview (CATI) conducted on a stratified sample of 1,000 Melbourne residents and 500 residents from across the rest of Victoria in late 2009. Ethics approval was gained through Monash University Human Ethics Research Committee.

ACER

Self-report surveys for children and parents were sent directly to the participating schools following approval from each school principal. Classroom teachers were provided with written instructions on how to administer the survey to a random sample of students. Only data from Years 3 to 6 students are presented here. Thirty-four percent of Years 3 to 6 students (n=1,044) completed a survey (C). The survey contained items on methods of travel to and from school, active travel in the neighbourhood, and road safety.

Surveys for parents were distributed through students at the 19 schools with a ‘reply-paid’ envelope attached. Seven hundred and fifty five (755) parents or carers over 18 years of age completed a survey (P). Parent surveys collected information on their child’s movement around the neighbourhood including school travel, and parents’ attitudes to their neighbourhood.

Neighbourhood surveys sought to examine the perception of children’s travel activity in the local environment, community attitudes to safety, and accessibility of facilities, with 1,606 surveys included in this analysis (NH). The distribution and administration of the neighbourhood survey differed across the target areas. Cardinia and Darebin were distributed through a letter-box drop, Bendigo, Brimbank and Wodonga were completed as face-to-face surveys, and Geelong was a mix of both. Respondents in Cardinia were offered an incentive to complete a survey.

VicHealth Community Attitudes Survey

VicHealth commissioned the Social Research Centre to conduct telephone interviews to determine community sentiment on children’s active travel and independent mobility. The Community Attitudes Survey (CAS) assessed 1,500 weighted respondents using a questionnaire designed by VicHealth based on published surveys as well as new questions developed specifically for this study.

Table 1: Summary of data sources

Sample	N	Method	Conducted by
Primary school child (C)	1044	Pen and paper questionnaire, self-completed, classroom setting	ACER
Parent of primary school child (P)	755	Pen and paper questionnaire, self-completed	ACER
Resident in neighbourhood (NH)	1606	Mixed – pen and paper questionnaire received at home/interview in street	ACER
Adults (CAS)	1500	Computer Assisted Telephone Interview (CATI)	Social Research Centre

The respondents

Age

Adult participants for all surveys were over 18 years of age. The majority of adult participants with primary school children were aged between 30 and 39 years old or under (70 per cent), while only 42 per cent of those without primary school children were 30 to 39 years old or under. Half the CAS participants were aged between 18 and 44 years old. There were no differences between participants in any variable based on age, except where noted.

Sex

For adult data, male and female ratios are similar between NH and CAS data; of those completing the survey, approximately 45 per cent were male and 55 per cent were female. The sex of parent respondents (P) in the ACER survey is unknown. Of the children who participated, there were 524 boys and 515 girls (and five with sex unknown). Analysis of the data showed no differences between participants in any variable based on sex except where noted.

Urban/rural location

Respondents to the ACER surveys came from six local government areas across Victoria. For the purposes of this report, Bendigo, Cardinia and Wodonga are considered rural and Darebin, Geelong and Brimbank urban. The CAS data were collected at a state level. Thirty percent of the ACER and CAS sample are rural with the remainder from metropolitan Melbourne. Except where noted there were no differences between participants in any variable based on location.

Years in neighbourhood

Participants in the NH sample were asked how long they had lived in the neighbourhood. Approximately half (54 per cent) had lived there for 10 years or less while two per cent had lived there for less than one year. There was no correlation between years in neighbourhood and other variables within NH data.

Results

The social-ecological model of active travel behaviour permits consideration of the contribution of multiple and intersecting factors to travel behaviour. These factors exist within a range of settings and across environments of differing scale and complexity (Gebel et al. 2005; Garrard 2009). Garrard has identified four correlates of active travel that shape the travel choices of families: the social/cultural environment, the physical environment, intra-individual factors and the policy/regulatory environment. Using this framework, the results of two independent surveys are examined to ascertain how such factors may contribute to parents' and children's decision regarding walking or cycling.

While both surveys had a similar focus, their design and administration differed. Where appropriate, the results of the surveys are compared. However, where the wording of questions suggested potentially different interpretations of concepts under study, results are presented sequentially commencing with ACER data.

Social/cultural environment

The social/cultural environment includes social, economic, cultural and political factors that may affect travel behaviour. Garrard (2009) has identified a number of factors influencing children's active travel, such as economic inequality, levels of societal trust and cohesion, community safety, and norms of being a 'good parent'.

In survey results presented here, three components of the social/cultural environment were examined: the importance of independent mobility which may be considered a social norm, perceptions of the character of the local neighbourhood, and safety.

Importance of independent mobility

Approximately 80 per cent of neighbourhood residents (NH) said it was important for children to be walking and riding about the local area without needing an adult to look out for them, with an age difference noted. Of neighbourhood residents who said it was 'not at all important', 38 per cent were 50 to 59 years old, 21 per cent were 40 to 49 years old and 19 per cent were 20 to 29 years old. Of those aged 30 to 39 years old and 40 to 49 years old, 40 per cent (NH) indicated independent mobility was 'very important' or 'important'. The results were similar between urban and rural respondents (NH); however, more rural participants (19.7 per cent) indicated independent mobility was fairly important than metro participants (13.0 per cent).

Perceptions of the neighbourhood

When asked about their neighbourhood, 82 per cent of NH respondents described their neighbourhoods as friendly, with people looking out for each other (67 per cent) and mostly safe for walking around during the day (91 per cent). Almost 80 per cent (NH) indicated that families talked to their neighbours and felt easy speaking to others while out walking. While the majority of NH participants (80 per cent) perceived their neighbourhood as popular with young families, fewer older participants (age groups above 40 years old) agreed with the sentiment than younger participants (age group 20 to 39 years old).

Only 55 per cent of NH respondents reported noticing primary school students walking or cycling to school each day, with or without an adult. Importantly, 40 per cent of respondents (NH) rarely or never saw a child walking, riding or playing on the street. Age group differences revealed that half of those who reported not noticing children at all were over 50 years old.

Many parents (74 per cent P) reported often seeing families out walking in their neighbourhood, with 41 per cent (P) often hearing children playing in the street. Only 60 per cent (P) indicated their family knew many people in their local area. Interestingly, 30 per cent (C) of children indicated there were no children for them to play with near their house.

In the CAS, only 64 per cent of participants agreed the community looks out for children travelling independently (without adult supervision). Notably, more men than women, and 76 per cent of CAS respondents from rural Victoria, were more certain that the community does look out for children travelling without adult supervision.

Safety

While 91 per cent (NH) of neighbours perceived their streets as mostly safe for walking around during the day, 35 per cent of CAS participants reported that the amount of crime in the area meant streets were unsafe and unsuitable for children to travel without adult supervision. This finding is reflected in parent data with approximately 60 per cent of parents (P) stating they do not believe it is safe for children to play in the street. Parents in rural locales (80 per cent P) were more likely to feel safe in their neighbourhood than urban parents (70 per cent P). Interestingly, when asked about local parks the majority of participants stated that it was safe to walk and ride to the park (68 per cent NH, 63 per cent of parents in NH data), but not safe to play there (64 per cent P).

Fear of strangers is a significant factor in children's independent mobility. More than half (54 per cent) of neighbourhood participants (NH) believed that strangers present a danger for children, with 73 per cent of parents (P) seeing 'stranger danger' as a barrier to children's physical activity in the community.

In the CAS, 48 per cent of parents with primary school aged children agreed there was a high risk a child would be abducted by a stranger if they were moving about the neighbourhood without adult supervision. This finding was supported by 38 per cent of all participants in the CAS survey who also agreed there was a high risk of child abduction.

When questions were asked about time of day rather than the amount of crime, 60 per cent of primary school parents (P) perceived it was safe for children to walk, cycle or scoot alone during the day and not safe for their child to go out after dark (95 per cent P). The majority of parents (72 per cent P) reported that availability of public transport was not a significant barrier to their child's physical activity within the community. However, 89 per cent (P) believed it was not safe for children to take public transport.

Slightly more than half the children (52 per cent C) reported being worried about strangers, with more girls (63 per cent) worried than boys (42 per cent). Seventy-three per cent of children (C) reported being allowed to go outside to play with other children.

Social/cultural environment: summary

In summary, while neighbours value independent mobility and neighbourhoods are generally perceived to be family-friendly, there is a community-wide, strong, persistent fear of children being at risk of abduction by strangers, a fear particularly felt by parents of school age children. This fear limits children travelling independently in their neighbourhood, and may also be a significant barrier to active travel more generally.

Physical environment

The social-ecological framework enables consideration of how the natural and built environment influences travel behaviour (Garrard 2009). Garrard identified walking and cycling infrastructure, road environment travel distance and the differences between urban and suburban locales as key factors in the physical environment that shape children's active travel. The ACER surveys and the CAS provide evidence for the first three of these factors.

Walking and cycling infrastructure

In the survey of neighbourhood residents, 70 per cent of participants (NH) said there were bicycle paths or footpaths in or near their neighbourhood. Of note, neighbourhood respondents aged over 50 years were more likely to disagree with this statement. In contrast, only 54 per cent of primary school parents (P) indicated that footpaths or bike paths were easy to get to.

Respondents to the CAS were asked about the suitability and availability of footpaths and bike paths for children to travel. Sixty-six per cent agreed that footpaths are suitable for children to walk or cycle safely without supervision, while 63 per cent agree there are enough bike paths. Importantly, respondents with younger children were more likely to say there were not enough bike paths and those present are too narrow for their children to navigate safely alone.

Road environment

The majority of primary school parents (73 per cent P) saw road safety as a barrier to their children's physical activity in the community. Indeed, only two out of ten parents (P) thought it was safe for their child to cross main roads. More than half of the parents (60 per cent P) perceived street crossings to be safe for their child to use. In the NH survey, half of the respondents indicated that there were pedestrian crossing and signals to help walkers and cyclists to cross streets safely. When children were asked to report on crossing the street, 68 per cent (C) said they had to cross one or more roads to play.

Respondents to both the parent survey and the neighbourhood survey were asked about traffic. Forty per cent of neighbourhood residents (NH) did not feel safe due to the traffic on the streets and described the amount of traffic as making it difficult or unpleasant to walk or cycle. This percentage increased to almost 50 per cent for primary school parents (P) regarding the same issue. When asked specifically about the presence of too much traffic on the roads, 56 per cent of Victorian respondents (CAS) agreed traffic lead to unsafe conditions for children to move around neighbourhood without adult supervision

Forty-one per cent of children (C) agreed with the statement 'yes, there are a lot of cars on the road near my house'.

Travel distances

Sixty per cent of neighbourhood residents (NH) suggested children could easily walk or ride their bike to their local school while 90 per cent indicated that public transport was within easy walking distance of their home.

When asked about the proximity of school to home, 60 per cent of parents (P) reported that it was easy to walk or cycle between home and school. Approximately one third of parents (30 per cent P) lived less than one kilometre from their school.

Neighbourhood residents were aware of local parks or recreational areas (64 per cent NH) and open spaces (75 per cent NH) nearby, with most rating parks and shops within easy walking distance of their home (84 per cent and 75 per cent respectively, NH). Older participants (NH) were more likely to disagree with these statements. Fewer parents (68 per cent P) reported that parks were within easy walking distance.

Physical environment: summary

In summary, road safety was seen by parents as a barrier to children's physical activity in their neighbourhood with the amount of traffic seeming to be a significant contributor inhibiting children's ability to negotiate road crossings. However, distance between school and home was not a barrier.

Policy/regulatory environment

Garrard (2009) highlights a link between policy and/or regulations associated with traffic safety measures and rates of walking and cycling. Policies regarding 'compulsory road safety education for children aged 6-9 years, conducting national road safety campaigns once a year or more, speed reduction measures, ... [and] legislation that assumes driver responsibility in an accident involving a child pedestrian' (Garrard 2009) are among those identified as supportive of active travel behaviour. Policy factors addressed were school policy (ACER only) and speed restrictions (CAS only).

School policy

Parents (P) reported that their child's school encouraged students to walk or cycle to school under supervision (75 per cent with supervision, 68 per cent with siblings or friends). A high percentage of children (74 per cent C) reported their school encourages them to walk, cycle or scoot to school and their school had a safe place to leave their bikes or scooters (77 per cent C).

Speed restrictions

While 80 per cent of neighbourhood respondents (NH) stated that drivers exceed the speed limit, there appears to be little support for reducing the speed limit in neighbourhood streets from the general community (CAS). Only 29 per cent of CAS participants thought the speed limit should be reduced to 30km per hour to make it safer for children to move around their local community while slightly more respondents (41 per cent) agreed to a 40km/h zone.

Policy/regulatory environment: summary

In summary, school practice appears to be supportive of children being active in their travel to and from school, while Victorians are not supportive of speed reduction measures.

Individual factors

Individual factors have been the focus of research into the prevalence and correlates of active travel (Gebel et al. 2005; Garrard 2009). Such factors include cognitive aspects of knowledge, attitudes and beliefs, biological factors, 'psychological responsiveness and genetic makeup' (Gebel et al.). Two individual factors were examined in the surveys: knowledge, in particular children's knowledge the road environment (ACER), and children's age (CAS).

Knowledge

In the ACER survey for children (C), there were a number of items on road safety. Almost all children (93 per cent) knew the road safety rules; 81 per cent reported they could read street signs to help them get home; 86 per cent knew the way to walk or cycle to their school; 82 per cent knew the way to walk or cycle to the local park, playground or the local shops; and 74 per cent knew how to walk or cycle to their best friend's house. When asked if they knew how to use public transport, 57 per cent of children said yes, while 21 per cent did not know.

Most children (C) have a bike or scooter (94 per cent bicycle, 77 per cent scooter). Just over 50 per cent have rollerblades or a skateboard, with girls significantly more likely than boys to have rollerblades and boys significantly more likely than girls to have a skateboard. Boys were also significantly more likely than girls to ride their bikes.

Age

In the CAS, Victorians were asked about the age at which children should be allowed to walk or cycle alone to school, local facilities or parks, or a friend's home without adult supervision. Parents with children aged under 18 living at home stated that, on average, children should be over 12 years old to walk or cycle alone to the local park or playground. This age range is at the very upper end of primary school children ages. When considering just parents of primary school age children (CAS), the age for independent mobility reduced to 11.6 years old for travel to school (without adult supervision). Older participants (aged 55+ years) indicated that children should be able to walk or cycle to school without adult supervision by 10.7 years old, while younger participants suggested 12.0 years old.

Parents of children aged 18 or under (CAS) felt that children should be 13.8 years to catch public transport alone without adult supervision, although not the school bus. This is significantly older than parents without children aged 18 or under, who reported children could be 13.0 years and catching public transport (CAS).

Individual factors: summary

In summary, Victorians generally hold the belief that primary school age children should not be travelling independently in the community, despite children's knowledge of road safety.

Travel behaviour

The social-ecological model (Garrard 2009) posits a range of factors that influence active travel behaviour. In the surveys presented here, parents completing an ACER survey were asked how their child travelled to school in the week prior to the survey.

More than two thirds of parents (77 per cent P) drove their child to school. Their reasons for doing so were: their child is too young to go to school alone (25 per cent); the distance is too far for the child to walk, ride or scoot (24 per cent); there are too many busy roads for the child to cross (18 per cent); they drop their child off at school on the way to work (18 per cent); their child has insufficient road safety skills (9 per cent); they were running late 7 per cent; and the school bag was too heavy (3 per cent).

Of the children who walked to or from school, slightly more walked home every day (18 per cent) than walked to school every day (16 per cent). Fewer children reported walking to school every day (13 per cent C).¹ Approximately two per cent or less of the sample reported taking public transport or riding their bike every day (P, C). For families who lived less than one kilometre from the school, only about 40 per cent were walking to or from school every day.

Summary

Parents largely drive their children to school while they are at primary school, even quite short distances. Fear of children being abducted by strangers is a significant limitation on children walking to school and around their community, as is the perception of too much traffic. There is also a widely held view that children at primary school are too young to travel independently in their neighbourhood. These factors exist even though neighbourhoods are considered safe, family-friendly places with adequate walking and cycling infrastructure.

Limitations

This report is based on data collected by two different organisations using different methods at different times for different purposes. While the research designs of both surveys were not conducted with this report in mind, they provide an opportunity to consider children's active transport. Therefore, the report has been prepared with a focus on the movement of primary school children in their neighbourhoods reflecting the data available and VicHealth's interest in the area.

¹ It is not possible to link the parent and child data.

Discussion

The social-ecological model developed by Garrard (2009) provides a useful framework for examining the complex, multi-faceted and interconnecting factors shaping travel behaviour. Through the model, Garrard has highlighted the influences of economic equality, gender, age, population density, geographic location and social cohesion in shaping the encouragement of children to walk or cycle in their local neighbourhood. Importantly, the norms of being a 'good parent', the transport habits of parents, and their perceptions of the developmental capability of children to negotiate public spaces are also important correlates of children's active transport, some of which are also explored in this report.

Recent data available to VicHealth reflects the multifaceted factors identified by Garrard (2009). Despite children having sound road safety knowledge and the support of their schools, children report not seeing other children playing on their street, being worried about the presence of strangers and cognisant of high traffic volumes around them. Similarly, while parents enjoy the safety and amenities of their neighbourhood, their concerns about traffic, fear of strangers and a belief that their primary school age children are not old enough to walk or cycle even short distances to school shape their decision to drive their children to school. Figure 2 illustrates this model and the variables considered through the two surveys influencing children's independent movements in their neighbourhoods and particularly walking to school.

Garrard (2009) presents research highlighting the 'gatekeeper' role of parents in limiting children's active transport through multiple dimensions: the convenience of car travel, parents' own preferred method of travel and road and personal safety concerns. However, she also reports the inconsistent findings between and within research studies, advising that 'about 70 per cent of the variance in active travel rates remains unexplained' (Krizek et al. 2009, cited in Garrard 2009).

Thomson (2009) suggests parents are exhibiting an aversion to exposing their children to risk, influenced in part by social and cultural pressures 'to constantly supervise and micromanage their children' (Thomson 2009). Zubrick et al. (2010) also describe heightened levels of parental caution and increasing vigilance (if not actual fear and anxiety) associated with children's independent mobility. There are 'clear restrictions on where children can be left unsupervised, who can supervise them, the rules for transferring duty of care, and general tolerance for children having a 'freer range' of independent mobility' (Zubrick et al. 2010). They suggest factors such as the substantial changes in Australian family life linked to work, employment, the extension of the lifespan, the lowering of the age range for early childhood education and the need for care outside of the home as influencing these decisions.

Conclusion

These survey results provide evidence of Victorian community attitudes to active travel for children, particularly with regard to children walking or cycling to their local school. Parents of primary school age children mostly drive their children to school, even when the distances are short. A combination of fear of strangers, a perception of high level of traffic and children's immaturity combine to influence parental decision-making on children's travel to school. Unfortunately, the low engagement with active transport for children in their neighbourhoods is a contributor to the reduction in their physical activity levels, with negative impacts on physical health. It is hoped this report raises a number of areas for consideration to increase children's active transport.

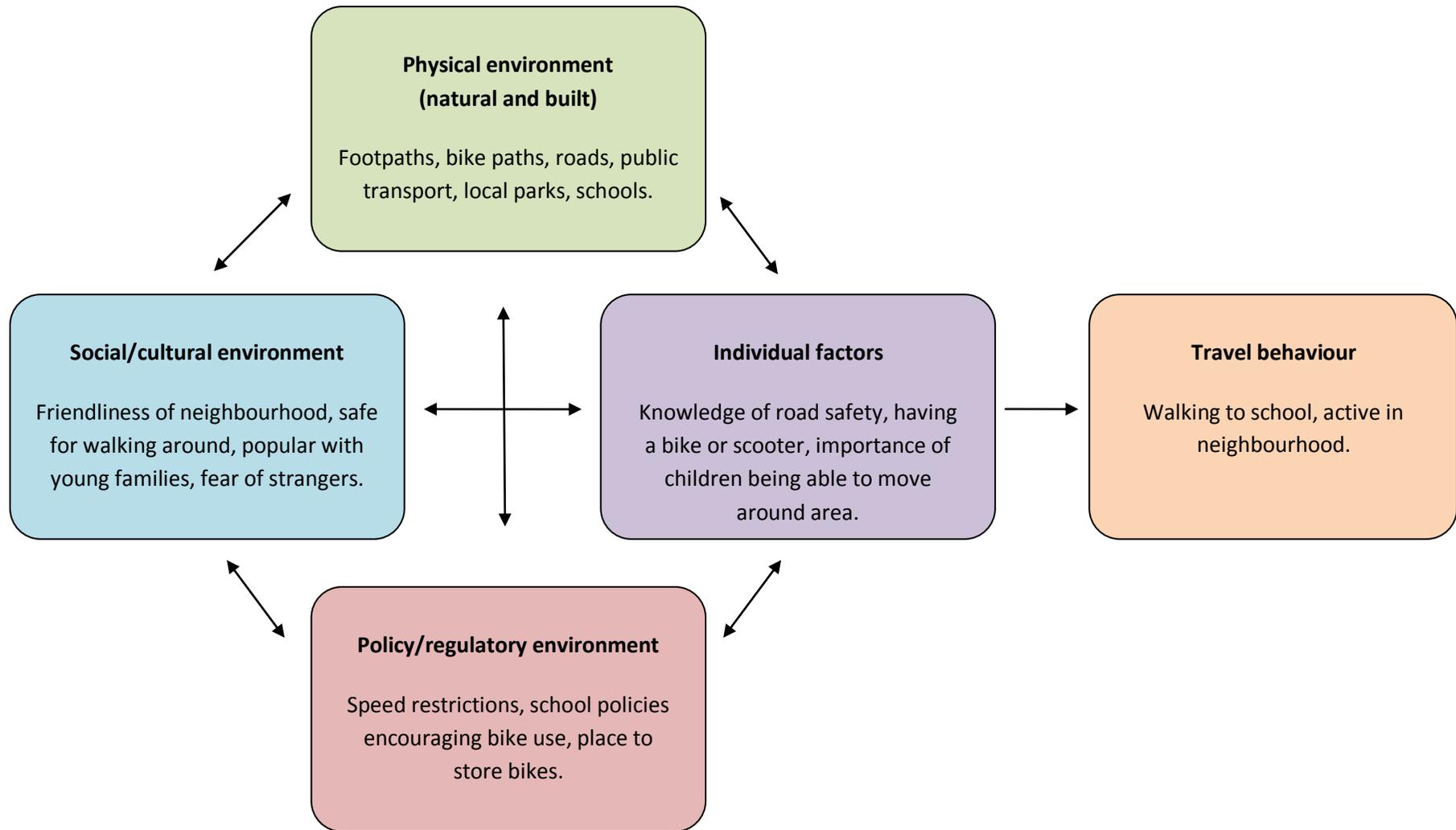


Figure 2: Environmental influences considered herein impacting on children’s walking to school and active in their neighbourhood (based on figure in Garrard 2009, adapted from Gebel et al. 2005)

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