

UNDERSTANDING AUSTRALIAN PARENTS' ATTITUDES ABOUT THEIR CHILDREN'S TRAVEL BEHAVIOUR: RESULTS FROM THE CATCH & iMATCH PROJECTS

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Abstract

Parents are important decision makers about children's activities. It is critical to identify their attitudes and how they differ across neighbourhoods, and for what reasons parents grant 'licences' to their children for independent mobility and active travel. Past research on parental attitudes has produced a range of findings, possibly relating to the different approaches used, but highlighting the role of social environments in influencing parental attitudes and decisions. There have been few comprehensive studies on parental attitudes and perceptions about children's independent mobility, though work has advanced more so in Australia than many countries. There remain research gaps about the relative importance of key factors (e.g. 'stranger' danger and road traffic danger) in parental decisions. The paper explores on data from 232 questionnaire surveys completed by parents and guardians of 10-13 year olds who were recruited from primary schools in six neighbourhoods in Perth, Melbourne and Brisbane/Ipswich. Three of the schools had been part of recent travel behaviour change programs, three had not. Analysis of key elements of parents' decision making about their children's independent and active travel is provided, highlighting differences between the two groups. The paper concludes with recommendations for policy initiatives to increase parental support for children's active travel.

Introduction

There has been a significant documented decline in active travel (AT) among Australian children (van der Ploeg et al. 2008) and in many cities around the world (Lubans et al. 2011). This decline in children's independent mobility (CIM) and AT over the past two generations has placed children at greater risk for physical and mental health problems. These problems range from overweight and obesity to reduced development of cognitive skills. CIM, defined as travel without adult accompaniment, is now recognised as an important issue in the context of health, community well-being and sustainable transport (Carver, Timperio and Crawford 2012; Whitzman et al. 2009). Reduced levels of AT and CIM, as well as lower levels of physical activity overall, increase the risk of several modifiable diseases in children and reduce their overall well-being (Carver, Timperio and Crawford 2008). Traveling to/from school has been the focus of most research about children's AT. Walking and cycling to and from school is an important contributor to the total physical activity of children (Cooper et al. 2003; Faulkner et al. 2009).

Parental attitudes and perceptions have been identified as key factors influencing CIM and AT, especially in terms of travel to school (Kerr et al. 2006; Pont et al. 2011). There have been few comprehensive studies on parental attitudes and perceptions about children's independent mobility, though work has advanced in Australia on these issues. Whilst some of the most important issues for parents for them to feel comfortable offering 'licences' for CIM and AT to their children have been identified, including 'stranger' danger and road traffic danger. But their relative influence remains in dispute.

This paper primarily reports on a parental questionnaire survey that formed part of the independent Mobility, Active Travel and Children's Health (iMATCH) project, which seeks to explain how policy environments interact with built and social environments to positively influence CIM, AT and physical activity (PA) to improve health outcomes. This paper explores the attitudes and perceptions of Australian parents, and the role this plays in school travel behaviour. A review of recent research on

parental attitudes is provided, summarising recent key findings. The questionnaire survey is then introduced, and the summary results presented. The parent questionnaire included measures such as attitudes towards CIM, road safety and 'stranger' danger. Understanding the strength of key parental attitudes and perceptions of children's independent mobility across different urban contexts in urban Australia may help target policy interventions, few of which meaningfully engage parents beyond simple social marketing. The results open the possibility of exploring how parental attitudes are moderated by factors such as the built and social environment. The paper concludes with a discussion of the implications of the findings for policy and planning in Australian cities, and suggestions for future research.

Background

Children's Independent Mobility (CIM)

When children reach an appropriate age and level of experience, which differs for boys and girls, they are given various 'licenses' to travel independently (Hillman, Adams and Whitelegg 1990; Tranter 1993). CIM is often conceptualised as an evolving set of graduated 'licences', provided by parents and guardians to children as they age, from staying within sight, to playing in the front yard, to venturing into the street, to travelling short distances, to eventually roaming freely (Whitzman et al. 2009). Children without licenses for independent travel, to destinations such as their school, must rely on parents either to accompany or drive them (Pont et al. 2011:139). The licences provided to children are multi-dimensional, covering a set of different permissions to cross roads or to ride a bicycle, to travel with other children, or to travel alone (Kyttä 2004).

Though there are limited data, what is available suggests precipitous declines in CIM have occurred in recent decades in many nations, including Australia (Buliung, Mitra and Faulkner 2009; McDonald 2007). There are indications that the reduction in CIM may have far-reaching and substantial impacts on numerous aspects of children's health and development (Russell 2010). Children develop their social skills through exploring public spaces by themselves, developing relationships with others and developing a relationship with the place of their physical environment (Hillman et al. 1990). There are today significant differences in inter-generational independent mobility during childhood, meaning a loss of freedom for children today compared with their parents. This decline can have serious impacts on children's relationships with their social and built environment and researchers have argued that it should be a cause for concern (Kyttä 2004). We can summarise the importance of CIM in that it is:

- i) Linked to levels of physical activity in children;
- ii) Central to children's rights to freedom of movement and access to play opportunities within urban environments, and thus is an important indicator of a child friendly city (Whitzman et al. 2009);
- iii) Communities with increased CIM enable higher levels of social interaction, building social capital for children and their families, and contributing to children's mental health (Garrard 2009); and,
- iv) Higher levels of CIM are associated with lower environmental impacts from urban transport (Freeman and Tranter 2011).

The main three sets of reasons identified for decreasing CIM over the past 30 years have been hypothesized as: planning and design considerations such as lower densities, less land use mix, bigger roads and increased car traffic; social considerations such as increased concerns around traffic and stranger danger (Carver et al. 2012); and, the growing pressure to be a "good" parent (protecting children from all potential risks according to social interactions between parents about children's trips to school) (Whitzman et al. 2010).

Factors influencing parental attitudes about CIM and AT are also related to the particular community and to the culture of the broader society. In countries such as Germany and Japan large numbers of people of all ages use outdoor public space. In more individualistic societies, such as the USA, UK, Australia and New Zealand, lower levels of CIM have been observed (Whitzman et al. 2010).

Recent Australian Research on Parental Attitudes towards CIM

Parents make decisions about children's travel behaviours and also establish a family environment that can encourage or discourage CIM (Pont et al. 2011). Research exploring parental attitudes towards CIM in Australia has proliferated in recent years, as shown in Table 1. The table incorporates studies with different methods and objectives; some used questionnaires, some used interviews to capture more detailed and specific factors. Most focused on parental perceptions and attitudes towards AT and CIM and affective elements.

Table 1: Previous research on parental attitudes toward CIM in Australia

Study	Location	Key Findings on Parental Attitudes
Rudner 2012	Victoria	<ul style="list-style-type: none"> - Children are mostly absent in public space - Physical environment is not a major issue for parents; social environment has a larger influence; traffic environment is more likely to influence parent's decision-making - Parent's beliefs about a child's ability to distinguish harmful situations matters; many parents may be open to receiving expert advice
Carver 2011	Victoria	<ul style="list-style-type: none"> - Boys were granted greater 'licenses' than girls - Little difference between urban or rural children's CIM
Russell 2010	NSW	<ul style="list-style-type: none"> - Social trends important; i.e. level of sense of community in the neighbourhood, which can affect parents' fear of strangers and assault - Family characteristics (such as family size-in smaller families parents are inclined to be more protective, self-confidence and level of parent's anxiety and fear about the dangers may happen to their child when they are alone) - Neighbourhood characteristics (Social connectivity- social environment has greater effect on parent's decision about CIM)
Zubrick et al. 2010	Victoria	<ul style="list-style-type: none"> - Child's security specially stranger's danger as a major item affect parent's decision about CIM
Veitch et al. 2006	Victoria	<ul style="list-style-type: none"> - Child's safety concerns key factors (i.e. fears of strangers, teenagers/gangs, and road traffic) - The child's level of independence relates to child's general capability of being independent in public spaces and to negotiate environment safely - Social aspects and attitudes toward CIM are important
Carver et al. 2006	Victoria	Parent's concerns reported included: <ul style="list-style-type: none"> - Main roads as barriers to walking/cycling - Road safety key concern (i.e. speed of cars and pedestrian crossings) - 'Stranger' danger - Risk of their child being assaulted while out alone
Timperio et al. 2004b	Victoria	<ul style="list-style-type: none"> - Lesser likelihood of walking or cycling among girls - Safety of built environment(such as safe pedestrian path and crossings, cycling path's conditions)
Carlin et al. 1997	Victoria	<ul style="list-style-type: none"> - Demographic status of households an important factor (i.e. school type, car ownership, non-English-speaking background, parent's occupational category, education) - Little difference in overall walking levels between boys and girls, though boys were significantly more likely to cross streets unaccompanied
Joshi and MacLean 1995	Victoria and NSW	<ul style="list-style-type: none"> - Child's age influence CIM; 7-9 year olds more likely to be accompanied than the older children - 'Stranger' danger was most frequently cited reason for accompanying children to school given by parents.
Tranter 1993	ACT	<ul style="list-style-type: none"> - Main reasons for parents not giving licences varied significantly across suburbs - Traffic and stranger danger both important factors in limiting CIM

Table 1 shows a breadth of research and highlights the gender differences in CIM amongst Australian children (more boys than girls are granted freedoms by their parents), the problems of road and 'stranger' danger, and the role of social influences on parents in influencing levels of CIM. There are, however, some key gaps and limitations in this literature. Much of this research has focused more on parental attitudes and perceptions of AT and outdoor play and given less attention to CIM. Not all studies focused on both the physical and social environment. Some focused on parent's perceptions

of their children's AT throughout the neighbourhood, but not for the journey-to-school. Questionnaire studies tended to use only a limited number of attitudinal variables (i.e. crime/'stranger' danger, weather, volume of traffic, speed of traffic, and distance to school), or provided limited space for parents to express their broader concerns and attitudes. And much of the research was limited to only parts of one Australian city. Further, few have tested the link between parental expectations and beliefs, and parent's decisions about the licences that they give for CIM (Zubrick et al. 2010). Zuniga (2012) suggests that parents' decisions about children's travel mode to and from school not only depends on environmental conditions that allow active travel, but also depend heavily on their inclination, relating to their perceived behavioural control; which is less well understood in the Australian context.

Children's Travel Behaviour Change Initiatives in Australia

Several initiatives have been implemented in Australia that seek to influence the built, social and policy environments, in order to reduce barriers to children's walking and cycling, and increase children's AT. These programs often use educational strategies aimed at the child, infrastructure changes, activities with parents, and broader attempts to reduce motorized vehicle usage (Tranter and Malone 2008). Policy interventions in Australia include walk-to-school initiatives; bicycle programs; neighbourhood travel behaviour programs; road safety initiatives; and more holistic programs such as Travelsmart Schools or Active School Travel programs. There are a number of problems for our understandings of how policy interventions are promoting active travel and how they treat CIM in particular. It is also possible that a specific sub-set of programs may be counterproductive regarding CIM, including key national programs (Moghtaderi, Burke and Dodson 2012).

These initiatives are generally underpinned (whether explicitly or not) on a social-ecological model of behaviour change. Though there are many such models, most assume there are mutually interactive associations between physical environment factors, social environment factors, policy and regulatory environment factors, and individual factors (Garrard 2009). Previous reviews on effects that these interventions had on levels of CIM and AT have produced mixed results (see Moghtaderi, Burke and Dodson 2012).

It is especially important to understand parent's inclinations for their children to travel independently during the planning and design of children's travel behaviour change interventions. As noted by Zuniga (2012) policy interventions may be better 'tailored' to the different levels of inclination that different types of parents have, to improve the efficacy of these programs. It is these research gaps that this broader research effort seeks to explore.

The iMATCH project

The independent Mobility, Active travel and Children's Health (iMATCH) project is an Australian Research Council (ARC) project involving five universities around Australia. The iMATCH project seeks to explore the interaction of policy environments with built and social environments in order to increase CIM, AT and physical activity to improve health outcomes. The focus of iMATCH is on policy interventions such as Australia's *Travelsmart Schools* and *Safe Routes to School* initiatives in influencing CIT, AT and health. iMATCH attempts to provide a holistic and inter-disciplinary evaluation of policy interventions. iMATCH draws on researchers from transport, urban planning, social geography and health fields, including industry collaborators. The project is being conducted in conjunction with another ARC project with the same research team named CATCH (Children's Active travel, Connectedness and Health). The CATCH project is also a multi-environment study of children that, in contrast to iMATCH, focuses more on influences of the built and social environment rather than on policy interventions. The research sites focused on primary schools in carefully selected neighbourhoods. Both studies captured data from 10-13 year old children and their parents at nine schools in Perth, Brisbane, Melbourne and Rockhampton. This age range was selected because it represents the transitory stage from lesser to greater independent mobility (Tranter and Pawson 2001). The two studies used GIS audits of the built environments of the neighbourhoods surrounding the school sites, travel diaries, global positioning systems (GPS), measures of physical activity, height and weight, qualitative surveys of parents and guardians, children's surveys and photo elicitation methods.

Methods

In this paper we draw on data from the parents' surveys to provide findings on parental perceptions of CIM and AT. In an introductory letter to the parents, handed-out by the teachers, the purpose of the project was described as a study of children's travel and it was explained that participation was voluntary. The researchers personally visited the schools to introduce the research to the children and to distribute the questionnaire to be taken home to the parent. Of the research sites in the broader studies, three urban sites had significant policy interventions delivered recently in the schools; three did not, allowing for some measure of comparison. We report on these as 'intervention' and 'non-intervention' sites in this paper (see Table 2). The national study included data from over 309 parents, from which only 232 surveys are used for this paper. The data from Rockhampton, a regional centre, is not reported here. There were comparatively less parents who completed surveys in the Melbourne – inner suburban site (intervention) and the Melbourne middle suburban site (non-intervention) than at the other sites in this sample. Sites are de-identified and school names are not used in this paper, as per the studies' ethics approvals.

Table 2: Matched-Pair Selection of School Sites Based on Neighbourhood and Intervention Type

	Inner Suburb	Middle Suburb	Outer Suburb
Intervention	Melbourne (n=19)	Brisbane (n=49)	Brisbane (n=69)
Non-intervention	Perth(n=49)	Melbourne (n=17)	Ipswich (n=44)

The parent surveys elicited information on attitudinal items known to influence CIM. The parental surveys provided key demographic data, travel data (household car ownership, license holding, summary travel behaviours) as well as data on 'licenses' given to children, and attitudinal/perception data from parents on CIM and the neighbourhood environment. Future analysis will match this data with the GIS audits, travel diary data, children's surveys and physical activity data, to try to isolate the effects of different aspects of the built, social and policy environments. Focus groups and interviews with parents will expand significantly the understandings provided by the parents' surveys. But in this paper we provide only the summary findings from the parents' survey.

Table 3 provides the sample characteristics for the urban intervention and non-intervention sites. Approximately 18% of respondents were male. Just 4% of parents reported no car ownership.

Table 3: Participant's characteristics

Variable	Total participants (n=232)
Child age (years)	10-13
Child sex (male), n (%)	99(42.6%)
CIM licence to travel to or/and from school (yes)	140(60.3)
Gender of survey responder (male)	41(17.6%)
Parent's mode of transport (drive)	170(73.2%)
Car ownership (no)	4(1.7%)

The parental surveys were examined to identify the main parental perceptions, limits placed on children's freedom to travel independently throughout the neighbourhood, items that can affect parent's decisions about CIM, and the similarities and differences among parent's attitudes in different urban contexts.

Results

The majority (60.3%) of parents reported that they offered licenses to their children to travel to or from school without adult supervision (see Table 4) albeit slightly less so at the intervention sites than at

the non-intervention sites. Parents reported giving greater licence to travel to or from school independently to boys (66%) as compared to girls (56%).

Table 4: CIM licence granted to children to travel to or from school

		CIM Licence for school travel: 'No'			CIM Licence for school travel: 'Yes'			TOTAL
		Non-Intervention	Intervention	Sub-total 'No'	Non-Intervention	Intervention	Sub-total 'Yes'	
Child's Gender	Boy	13	21	34(34.3%)	32	33	65(65.7%)	99
	Girl	22	36	58(43.6%)	42	33	75(56.4%)	133
TOTAL		35(32.1%)	57(46.3%)	92(39.7%)	74(67.9%)	66(53.7%)	140(60.3%)	232

Table 5 shows the proportion of parents and guardians who reported that their child's school encourages students to walk or ride a bike to school. Unsurprisingly at the intervention school over 95% of parents reported that their child's school encourages AT, whereas only 57% of parents the non-intervention schools reported the same.

Table 5: Does your child's school encourage students to walk or ride a bike to school?

School encourage students...	Non-intervention Schools	intervention Schools	Total
YES	102(57.3%)	117(95.1%)	219(72.8%)
NO	17(9.6%)	2(1.6%)	19(6.3%)
Don't Know	59(33.1%)	4(3.3%)	63(20.9%)
Total	178(100%)	123(100%)	301(100%)

To examine parental attitudes toward children's mobility without adult accompaniment, parents were asked to respond to a series of five-point Likert scales ranging from strongly disagree to strongly agree. We report the proportion of parents whom agree or strongly agree with the statements, for the intervention and non-intervention schools in Tables 5-7. Though the differences in the proportions of parents who agreed with the statements across the intervention/non-intervention sites appear large, very few are significant at the 95% confidence level, including in terms of their attitudes towards CIM (Table 6). Some results were contrary to what one might expect were behaviour change interventions strongly affecting parental attitudes. For instance, 6.4% of parents in the non-intervention sites reported agreement was the statement "It is irresponsible for parents to allow their children to walk or cycle in our neighbourhood without an adult"; compared to 12.4% in intervention sites. Of the results that were statistically significant, more parents in the non-intervention sites (77%) than the intervention sites (64%) agreed with the statement "I am confident that my child has the ability to walk or cycle in the neighbourhood without an adult" (Z-test = 2.1; p=0.0177) (see Table 7).

Table 6: Parents who ‘agree’ or ‘strongly agree’ with attitudinal statements regarding CIM

Attitudes toward CIM	Non-Intervention	Intervention
It is irresponsible for parents to allow their children to walk or cycle in our neighbourhood without an adult	7 (6.4%)	15 (12.4%)
I know other parents at my child’s school well	65 (60.2%)	83 (67.5%)
I think it is irresponsible for other parents to drive their children to school	6 (5.6%)	2 (1.6%)
I think it is important that my child develop skills to travel alone	93 (86.1%)	105 (85.4%)
I think it is important that my child meet and/or play with other children on the way to school and other places	51 (47.2%)	49 (39.8%)
I am confident that my child has the ability to walk or cycle in the neighbourhood without an adult	83 (76.9%)*	79(64.2%)*

* p<0.05

With regard to parent's perceptions of key aspects of the built and social environments in their neighbourhoods, there was also little difference between the intervention and non-intervention sites, as shown in Table 7. A high proportion of parents (77.8% in non-intervention and 71.5% in intervention sites) reported agreement with the statement “Our neighbourhood is friendly”. 90% of both groups agreed (or strongly agreed) their “neighbourhood is a good place to live”. Despite this, there were low levels of trust with neighbours reported. 11% of parents in the non-intervention sites and only 2.4% in the intervention sites reported agreement with the statement “People in this neighbourhood can be trusted”, a difference that was statistically significant ($Z=2.7$; $p=0.0073$).

Table 7: Parents who ‘agree’ or ‘strongly agree’ with attitudinal statements toward the built and social environment

Attitudes toward built and social environment	Non-Intervention	Intervention
Our neighbourhood is friendly	84(77.8%)	88(71.5%)
I know my neighbours well	47(43.5%)	58(47.2%)
My child/ children often play with other children in the street	43(39.8%)	44(35.8%)
Most people can be trusted	19(17.6%)	18(14.6%)
Most of the time people try to be helpful	9(8.3%)	4(3.3%)
People in this neighbourhood can be trusted	12(11.1%)*	3(2.4%)*
People around here are willing to help their neighbours	9(8.3%)	4(3.3%)
Assaults by strangers is a concern in my neighbourhood	23(21.3%)	23(18.7%)
Our neighbourhood is a nice place to walk around	98(90.7%)	105(85.4%)
I am actively involved in my child’s school	50(46.3%)	60(49.2%)
I am actively involved in neighbourhood – based organizations	22(20.4%)	29(24.0%)
This is a close-knit neighbourhood	22(20.4%)	27(22.1%)
People in this neighbourhood generally don’t get along with each other	69(63.9%)	85(69.1%)
Road traffic safety is a concern in my neighbourhood	59(55.1%)	74(60.2%)
We have several friends in the neighbourhood	73(67.6%)	79(64.2%)
The neighbourhood is a good place to live	98(90.7%)	111(90.2%)

* p<0.05

In regards parental perceptions of social norms, parents generally reported low levels of likely peer concern if they allowed their children independent mobility. Some 19.3% of parents in the non-intervention sites and 13.9% in the intervention sites agreed (or strongly agreed) with the statement “I think other parents would be concerned if I allowed my child to walk and cycle by themselves in my child’s neighbourhood”, a difference that was not statistically significant (see Table 8). A relatively high percentage of parents in both groups of schools reported they ‘... often see adults’ and ‘...often see children’ walking in their neighbourhood, but again, differences in the proportions across the two groups were not statistically significant.

Table 8: Parents who ‘agree’ or ‘strongly agree’ with attitudinal statements about social norms

Social Norms	Non-Intervention	Intervention
I think other parents would be concerned if I allowed my child to walk and cycle by themselves in my child’s neighbourhood	21(19.3%)	17(13.9%)
I often see adults walking in my neighbourhood	93(86.9%)	114(92.7%)
I often see children walking in my neighbourhood	73(67.6%)	76(61.8%)

Discussion

This exploration of parental attitudes undertaken with Australian parents and guardians reveals the wide array of parental attitudes about CIM. The findings open up a number of avenues for future research and may help inform future transport policy in order to encourage more healthy and sustainable children’s travel behaviour.

The parental survey results differ in key ways from previous Australian studies. The high level (60.3%) of parents reporting that they offered licenses to their children to travel to or/and from school without adult supervision was much higher than that reported in previous research in Australian schools: about 28% for selected neighbourhoods in Victoria (Whitzman et al. 2010); 35% among school children in VIC (Rudner 2012) and 43.9% among schools in Victoria (Carver et al. 2012). Although we used similar questions, differences in study methods, age groups and school and neighbourhood types may explain these differences. But the wide range suggests caution should be used when reporting levels of CIM in Australian neighbourhoods.

That said, many other results were as expected. For instance, boys were granted greater levels of freedom in terms of licences for travel to and from school, as compared to girls, concordant with the findings of Carver et al. (2012) and Timperio et al. (2004a). Nearly all of the parents in the intervention schools reported their child’s school promoted walking and cycling to school, whereas 43% of the parents in the non-intervention schools reported either their child’s school did not promote this behaviour or they did not know if they were doing so.

Interestingly, there is less divergence between the CIM levels reported in the intervention and non-intervention schools than we had initially expected. Few of the differences observed were statistically significant. The lack of significant differences could be due to the skewed nature of the dataset, with more inner-suburban children in the ‘non-intervention’ sample. It could also be due to ineffectiveness of the interventions in affecting parental attitudes (as opposed to child attitudes or behaviours); or due to encouragement of AT even at schools that have not experienced formal travel behaviour change intervention programs. That almost over half the parents in the non-intervention sites reported their children’s schools as encouraging AT suggests many schools are positively promoting children’s walking and cycling in some meaningful way even if not part of formal travel behaviour change interventions.

These results may still assist policy makers to design interventions to increase CIM among Australian children. Although parents mentioned particular concerns about the social and built environments in their neighbourhoods, they reported generally positive attitudes towards CIM, including that independent mobility is amongst the skills that their child should attain. This suggests parents will be receptive to messages about CIM. Very promisingly, in regards social norms, only a small proportion in the intervention and non-intervention groups reported likely parental peer concern if they allowed their children independent mobility. Disappointingly though, over a third of parents and guardians failed to report that they knew other parents at their children’s school well. And around two-thirds in both the intervention and non-intervention schools reported that people in their neighbourhood “generally don’t get along with each other”. These and other results suggest social connections were not especially strong and trust levels were modest across these sites. How neighbourhoods can resolve these problems remains a pressing concern for Australian cities. Our findings suggest travel behaviour change interventions that seek to create social connections between parents and move

well beyond conventional social marketing (as is occurring in the recent roll-out of selected Healthy Active School Travel (HAST) programs in Queensland) may have greater efficacy.

The broader research project of which these questionnaires were a part is continuing. The questionnaire format of the surveys did not allow respondents to further explain their attitudes and perceptions. However, at the time of writing, a series of focus groups and interviews with parents at the Brisbane research sites were undertaken. These interrogate the preliminary results provided here further; helping to identify what may underlie and influence these attitudes and perceptions. In addition, the parent survey data will shortly be cross-matched with other built environment, travel behaviour and physical activity datasets from the iMATCH database, to control for the built environment and explore the role of parental attitudes in influencing revealed CIM, AT and physical activity.

Acknowledgements

This research was funded in part by an Australian Research Council - Linkage Project (LP 100100344) supported by the Queensland Department of Transport and Main Roads, Queensland Health, Moreland City Council, Merri Community Health and Rockhampton City Council. The views expressed are solely those of the authors and do not represent the views of any institution. The authors take full responsibility for all errors and omissions.

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