Urban Synergies group

UNIVERSITY OF CANBERRA

HEALTH RESEARCH INSTITUTE

RESEARCH FINDINGS REPORT

Active Travel to School and Road Safety Education for ACT Primary Schools: A preliminary scoping study of three school neighbourhoods.

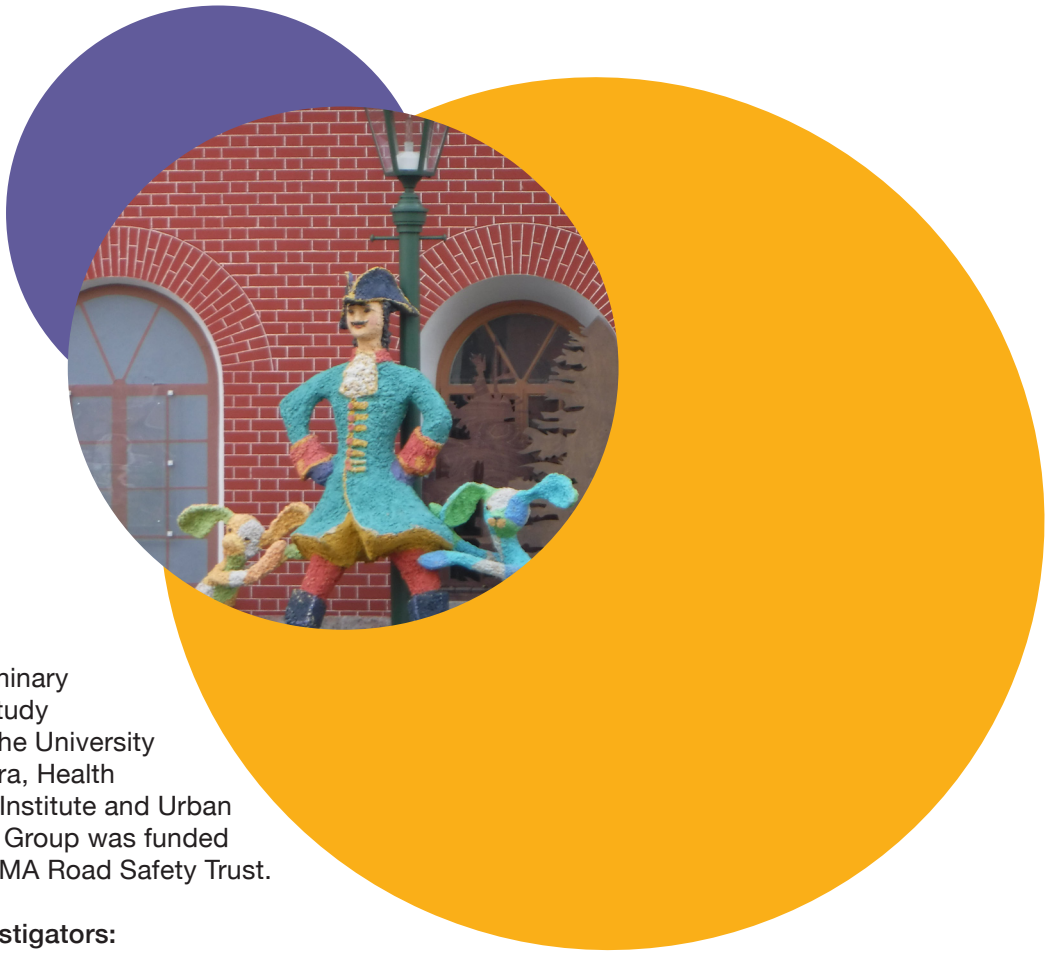

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table of contents

summary

Growing up in cities in the early part of the 21st century has not all been good for Australian children. In the Canberra context, only 19 percent of school children reported that they achieved the recommended 60 minutes of moderate to vigorous physical activity per day and only 30 percent of children reported using regular active travel to and from school (ACT Health, 2016). Evidence suggests that many of these unwelcome facets of modern lifestyles for children could be eradicated through relatively small adjustments of the opportunities available to children, such as those that might be gained through active play and active travel to and from school.

This report sheds light on the issue in the Canberra context and is a preliminary scoping study forming part of a larger research collaboration associated with active travel to school in the ACT, building on the ACT Road Safety strategy and other current active transport initiatives. The ACT government provides the necessary infrastructure for active travel to school including physical maps outlining several 'safe' routes to school as well as 'safe' drop off points within the catchment of schools. The greatest potential for increasing rates of active travel to school lies in encouraging more children to walk up to one kilometre and to cycle up to about five kilometres, but real and perceived safety around schools remains a primary concern.

The results in this report are based on a mixed- method research approach in which the researchers undertook a place audit of near-school environments, carried out behaviour mapping of the journey to school and counts of children's mode of transport to and from school. Our findings suggest solutions that could enhance participation rates and include the following:

Short term: Reposition drop zones and modify them to become suitable for younger children i.e. located nearer to school and enhance way finding that works from a user perspective (children) whilst repositioning others slightly away from school entrances to reduce entry/exit congestion and associated traffic/injury hazards. Further research is required to identify best ways to engage and support children, families and schools (behaviour change)

Medium term: Improve active travel street maps (end user focus) and ensure ground-truthing. Address connectivity inconsistencies in path network around schools.

Long term: Consider provision of separate bike path around schools (radius of 500 m) as conflicts arise between vehicles, pedestrians and cyclist during peak drop off and pick up times. Address lighting issues in targeted areas to overcome dark path hot spots for pedestrians in winter months, ensure shady areas generated by tree coverage and bins along the routes.

introduction

The following is a report of the research findings on safe active routes to school based on systematic direct observation of three school and neighbourhood environments. The research methods included a place audit and systematic behaviour mapping over three days during an average school week. The overall aim is to help validate walk or ride to school maps, to gain working estimates of relative proportions of children using active transport to and from schools and the range of environments encountered as well as to scope resource requirements for a comprehensive investigation to collect data on how many children actively take advantage of walking and cycling to school and to gain a better understanding of the needs in the local context.

background

Increasing the number of children using active travel modes to school is perceived as an effective and relatively inexpensive way to increase the total amount of physical activity of children by walking or cycling to school. Furthermore it sets an important behavioural norm that is known to be good for children's health and development. This can reduce related risk factors and contribute to prevention of non-communicable diseases such as heart disease, diabetes, hypertension, overweight and obesity (Pang, Kubacki, Rundle- Thiele, 2017). Further co-benefits of active travel to and from school include: improved concentration at the beginning of each school day, reduction of traffic congestion around school environments, improved social cohesion among the school community and perceived 'time' saving (Active Streets, 2018).

Overall active school travel programs in Australia have been successful in increasing walking rather than cycling to school. This trend indicates that cycling to school will require additional attention if Australia is to move towards the high rates of active travel for short to medium distance trips that occur in several affluent European and Asian countries (Garrard, 2011).

The greatest potential for increasing rates of active travel to school lies in encouraging more children to walk (e.g. 1-2 km) and to cycle (e.g. up to about 5 km), but perceived safety around schools remains a primary concern.

This project is based on the initial concept idea of providing safe access within a radius of about one kilometre around schools through well designed routes with daily active transport. Three school environments were used in this scoping audit.

methodology

The ACT government provides a range of infrastructure and resources for active travel to school including maps outlining several 'safe' routes to school as well as 'safe' drop off points within the catchment of schools . The aim of drop-off points is to enable parents, who live too far from the school, to drop their children off at one of these points and encourage children to walk the rest of the journey.

All mapped routes and other major streets along these routes which can be used by children to safely access the school were audited. A mixed -method approach was taken including the numbers of children walking, cycling and scootering during morning and afternoons over three weekdays. This was carried out from an outsider perspective by positioning researchers outside of schools with clear sight near the main entrances and drop off/pick up points. With a 'place audit' researchers documented the environmental conditions (trees, shades, sounds, smells, unusual features (barking dogs, neglected houses), space and narrated perceivable impressions of social dynamics in drop off zones, traffic conditions. Photographs and mapping were also used to enable comprehensive documentation of the physical environment (not included in this report).

findings

The following sections present a concise summary of all four researchers. Three observers focused on walking and cycling while one paid particular attention to cycling in all three school environments.

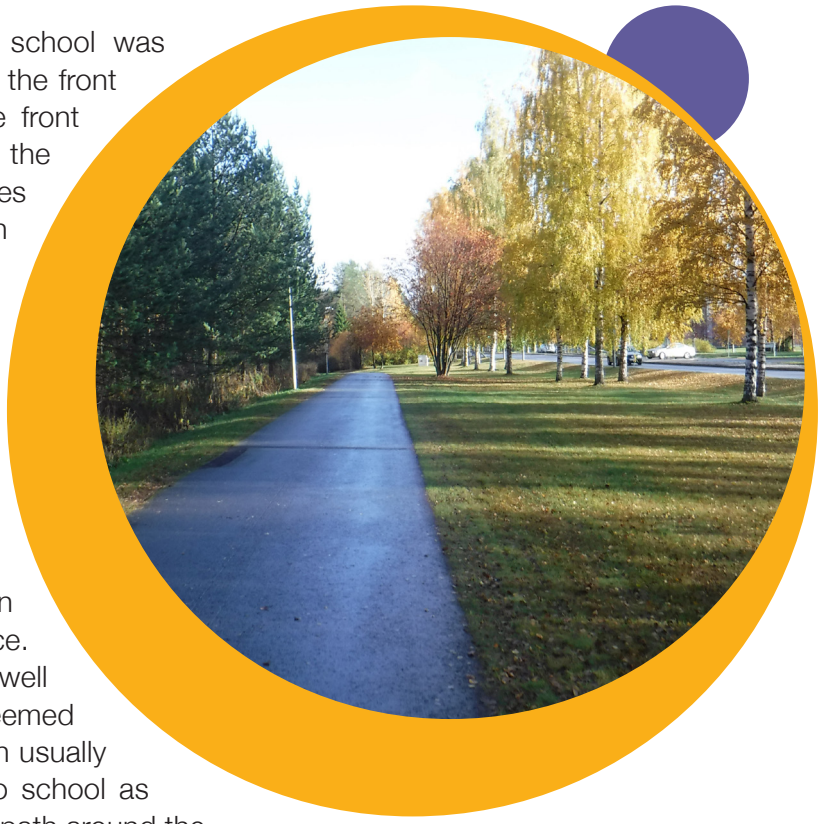
Table 1: MODES OF TRANSPORT TO SCHOOL ESTIMATES

	Ride/Walk*		Car/Bus		
	am	pm	am	pm	% Observed
School 1	20.6 (0.8)	27.6 (0.9)	79.4 (5.2)	72.4 (0.9)	~50%
School 2	19.1 (1.3)	21.8 (1.1)	80.9 (1.3)	78.1 (1.1)	~30%
School 3	34.1 (1.6)	38.3 (2.3)	65.9 (1.1)	61.7 (2.4)	~50%

*Values shown are averages over three separate days of observation and are given as percentages (standard deviation) of children observed using that mode of transport; am – morning, pm – afternoon; % Observed – percentage of children attending school observed at observer position.

Approximate percentages of children using active transport to school were 28%, 22% and 38% for Schools 1, 2 and 3 respectively. Slightly more children used active transport in the afternoon. All schools had multiple access routes and entry points. Accurate assessment of the numbers of children using each mode of transport will require one observer stationed at each school access point.

school and neighbourhood one



The main area to access the school was from the main entrance through the front gate. The drop off zone at the front was well organised and allowed the traffic to flow in relation to vehicles and pedestrians. The pedestrian crossing was well sign-posted and mostly used in the mornings. Traffic congestion was higher in the afternoons.

The overall environmental condition around the school had good tree cover providing shade in hotter months of the year and impacting positively on the overall walking experience. Most adjacent properties were well maintained, and most routes seemed to be in good condition. Children usually used the footpath for cycling to school as there is a lack of dedicated bike path around the school.

Many children arrived from directions that were not dedicated ‘active travel routes’ on the map. On some routes, pathways finished and continued from the opposite side of the road with a lack of safe crossing (e.g. pedestrian crossing or speed humps) to enhance safe connectivity between footpaths. Most of the paths were in good condition. However, design faults were noted including lack of lighting, clear signage, benches and bins. Some areas particularly across park land were subject to flooding.

school and neighbourhood two

The movement related dynamics in the drop off zones in the front of the school were very busy immediately before and after school times. Many cars park across the road of the main entrance of the school creating a potentially hazardous situation for those children who need to cross the road in order to get to school. There was only one pedestrian crossing which was not that often used, especially in the afternoons. Some of the nearby dwellings were in unkempt condition and at one property there was always a dog barking and scaring children.

Many children access the school from the well-maintained oval where many parents walk with their children to and from school. The oval was very-quiet with little public walking around the area, which could impact the safety perception at times. In addition, the area around the oval was poorly lit and this may impact walking or cycling to or from school in shorter daytime hours during winter. There were no bins or benches and some footpaths require attention as trip hazards were evident, particularly around the oval.

Usually children used the footpath to cycle as there was a lack of dedicated bike paths around the school. Many of the shared paths were perceived as unsafe for children who cycle during busy drop-off times. Along some routes children had no choice but to ride on the roads as there was no path. In some instances, paths finished and continued on the opposite side of the road. When this happened there was usually no pedestrian crossing available or speed humps in place enabling a safer connection between two sections of footpaths.

The main drop off zone near the school was very quiet and suitable for drop offs but did not have sufficient space for vehicles, explaining why most people chose the front of the school as a drop-off area. Only a few children rode or walked to and from school towards the west. Many of those caught a bus on the corner of a nearby street, which was easily accessible without crossing a road. The routes outlined in the network maps varied in suitability for safe cycling. Some of them did not follow logical routes despite the program stating that the routes attempt to cross the least number of roads. Further observation confirmed that some of the main directions children came from were not routes indicated in the active travel maps.

school and neighbourhood three

The routes outlined in the maps provided varied in their appropriateness. Some did not follow logical routes with regards to walking. Despite the maps stating that routes attempt to cross the least number of roads, several roads had to be crossed on some routes. Overall, most walking paths were in good condition. However, some routes had design faults. Some sections required children to walk or cycle on the road because no footpaths were available, leaving very little alternatives for walkers (e.g. walking on grass near the road reserve).

In particular, children who chose to ride their bike to school needed to use roads that have higher speeds than 40 km/h, which can be perceived as 'unsafe'. Some drop off points were perceived as 'unsuitable' for vehicles to stop. For example, when several vehicles arrive at the same time at one of the designated drop off points the road would quickly become congested. Alternative more suitable spots for drop off points were available in the area and would support a further reduction in the need for crossing roads. This was also reflected in user behaviour as many people chose to drop children off in spots that were not included in the active street maps. Surface gradients did not seem to play a role when active travel routes were identified as some routes were steep and difficult to ride a bike on, especially for younger children or less confident road users. Usually children used the path around the school. Often children had to use the road surface as there was no footpath, verge or bike path.

Paths near bike racks (cages) that were mostly used by children on bicycles were not logically routed and had no pavement. There was only one pedestrian crossing with a flag sign which wasn't used much. Road markings (dragon teeth) did not seem to work properly to enhance the perceived safety around the school. Many of the drop zones were difficult and inconvenient to access as they were too far from the main commuter thoroughfare. The maps were not identical with the drop off zones and routes were not clearly way-marked. Furthermore, these maps were hard to follow and required constant checking to ensure the correct path was taken.

limitations

Several limitations should be noted. Children who walk, cycle or scooter to school can be easily counted unlike those who get dropped off as it is not easy to identify the number of passengers in each vehicle. This can result in a natural bias towards active travel. Due to the limited number of observers, not all drop off areas were able to be covered. The counts near the front entrances were covered well, but not all of the entrances were visible to the observers. Children who left or entered via back entrances were not accounted for. Only three days of observation were available for this scoping study. A fuller evaluation would need to consider variations according to season and different weather conditions. Full traffic counts in peak periods were not feasible in this study but would be a valuable addition as the reduction of traffic in schools zones is an important school community outcome.

recommendations

Short term

- Reposition some drop zones and modify them to become suitable for younger children i.e. located nearer to school and enhance way finding that works from a user perspective (children) whilst repositioning others slightly away from school entrances to reduce entry/exit congestion and associated traffic/injury hazards.
- Further research is required to identify best ways to engage and support children, families and schools (behaviour change) in localised settings catering for individual family context-based needs.

Medium term

- Improve active travel street maps (end user focus) and ensure ground-truthing and consistency in infrastructure provision. For example, regular update and enhancement of active street maps could be based on psycho-geographic mapping for children (interactive) that are easier to interpret. A possibility is the deployment of end user technology e.g. CrowdSpot (http://crowdspot.com.au/).
- Address connectivity inconsistencies for active travel network around schools.

Long term

- Consider provision of separate bike path around schools (radius of 500 m) as conflicts arise between vehicles, pedestrians and cyclists during peak drop off and pick up times.
- Address lighting issues in targeted areas to overcome dark path for pedestrians in winter months, ensure shady areas generated by tree coverage and bins along the routes. This includes dog litter or may involve general household education on littering in public spaces.

conclusions

This report forms part of a larger ongoing study aiming to improve children's health and wellbeing through supporting active travel to and from school. Holistic research and actions at the neighbourhood level provide valuable learnings related to local community re-design and data collection procedures. Continuous collaboration and genuine leadership are required to address a pressing need for effective solutions that should ensure better road safety outcomes and other benefits for the next generation of Australians.

Providing adequate spaces for independent mobility is fundamental not optional for a healthy childhood. Happy children in public spaces is the strongest indicator for a liveable and loveable city for all.
Gregor H. Mews

references

ACT Health. (2016). Healthy Canberra, Australian Capital Territory, Chief Health Officer's Report 2016. Canberra Australia: ACT Government.

Garrard, J. (2011). Active travel to school: literature review ACT Government Active Travel to School Program. Canberra.

Pang, B., Kubacki, K., Rundle- Thiele, S. (2017). Promoting active travel to school: a systematic review (2010-2016). BMC Public Health, 17(1). https://doi.org/10.1186/s12889-017-4648-2

“The part can never be well unless the whole is well .”
Plato

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