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Evidence Brief: Impact of adopting school-based active transportation policy

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Issue and Research Question

Active transportation (AT) refers to any form of human-powered transportation made to a particular destination, such as work or school.[1] While walking and cycling are the most popular forms of AT, there are other variations, (e.g., skateboarding, cross-country skiing, and even kayaking) which are often combined with public transit.[1]

Key benefits of AT in comparison to the use of the private automobile include [1]:

- health benefits (i.e., increased physical activity levels)
- environmental and sustainability benefits (e.g., better air quality,efficient land use)
- economic benefits (e.g., reduced infrastructure costs)
- quality of life benefits (e.g., increased social capital and social interactions)

AT plans and policies are being promoted to decision makers to encourage communities to be healthy and sustainable and to increase physical activity (e.g., walking, cycling). AT has become a growing trend in Canada with increased public support, awareness, and public health research focusing on AT.[1]

Evidence Briefs are a series of evidence summaries on key public health topics informed by rapid knowledge synthesis methods. Visit our website for more from this series.

As municipal decision makers invest in transportation networks and infrastructure, the effectiveness of adopting AT plans and policies is not yet clear.

This Evidence Brief aims to investigate the effectiveness of active transportation planning by asking: *What are the benefits of adopting AT plans and policies?*

There is a wide range of topics associated with AT; for example, the use of active transport to school has declined in many countries including Canada and USA.[2,3] This Evidence Brief focuses on the effectiveness of adopting school-based policies that promote active school travel.

Methods

Published literature was searched via seven electronic databases (MEDLINE, Embase, CINAHL, Health Business Elite, SocINDEX, TRID, Scopus) on September 17, 2014 by PHO Library Services. Both review and primary study articles were included, to comprehensively capture all relevant papers. The search strategy included keyword terms “Active Transport”, “Community Health Planning”, “Environmental Policy”, “Government Regulation” and “Health Plan Implementation”.

English-language articles retrieved by the searches were assessed for eligibility by PHO staff. Articles primarily focused on school-based policies were included. Titles and abstracts were screened by one reviewer with 20% screened by a second reviewer. Any discrepancies were resolved by consensus. Full text articles were retrieved and reviewed by two reviewers. Relevant information was extracted from each article by one reviewer. The full search strategy can be obtained from PHO.

Main Findings

The search result generated 608 abstracts, of which four articles conducted in the US were included: two cross-sectional analyses examined the relationship between active transport to school and related laws and policies[4,5], one cross-sectional[6] and one quasi-experimental[7] analysis evaluated the effectivess of adopting Safe Routes to School (SRTS) legislation.

Goverments have increased their focus on increasing both active travel to school and physical activity level due to the decline in such trends. Many US states have policies that may impact active travel in school in addition to the SRTS program.[4]

Six categories of state statutory (legislative) and administrative (regulatory) laws related to AT were examined by two articles: minimum bussing distance, hazardous route exemptions to the distance requirement (e.g., bussing may be provided for shorter than minimal distance requirement when walking conditions are constituted as hazardous due to traffic or unsafe crossing), sidewalk requirement, crossing guards, traffic control measures (e.g., speed bumps), and speed zones around school.[4,5]

The evaluation of Safe Routes to School (SRTS) legislation adoption in the US is also decribed below. The SRTS legislation provides funds to the Department of Transporation in each state to promote active commuting to and from school. The SRTS programs involves various methods such as education, traffic law enforcement, and infrastructure changes.[6,7]

Relationship between active transport to school and related laws

The two nationally-representative samples of US public elementary schools that compared survey data between law required versus not required (i.e., encouraged or no law) showed that active travel to school laws and policies are beneficial.[4,5] A survey with the control sites showed that schools were significantly less likely to report lack of crossing guards (64% lower) and traffic (29% lower) as barriers, in cases where the state required crossing guards and traffic control measures.[4] The odds of

allowing all students to walk to school were significantly higher in states (by 91%) with a minimum bussing distance requirement of greater than one to two miles, compared to control schools located in the states with no minimum requirements.[4] Similarly, the odds of students biking to school were significantly greater with presence of hazardous route exemptions (by 1.79 times) or required crossing guards around school (by 2.7 times).[4] The odds of having no students walking or biking to school were also significantly lower in states that required crossing guards (68% lower) and speed zones (55% lower).[4] Although requiring sidewalks around schools did not affect walking or biking behaviour, it is interesting to note that students were significantly less likely to walk or bike to school in states with minimum bussing distances of less than one mile compared to states with no minimum bussing distance.[4]

Another survey showed that the odds of having "The walking school bus" (WSB) program (i.e., children walk to and from school on a fixed route, chaperoned by an adult) is significantly associated with district policies on safe active routes to school (by 2.73 times) and the state law requiring crossing guards around schools (by 2.86 times).[5] However, none of the other state law variables (sidewalk requirement, traffic control measures, and speed zones around school) were strongly associated with the WSB program.[5]

Evaluation on adoption of SRTS legislation

The California Safe Route to School legislation provides competitive funding for construction projects near school (e.g., sidewalks, traffic lights) with the intent to increase safety and active transport to and from school.[6] Cross-sectional analysis showed that children walked/biked to their elementary schools significantly more when the Safe Route to School projects were completed along their usual route (15.4% versus 4.3%).[6] Specifically, the increased active travel to school was significantly associated with improved sidewalk and traffic control.[6]

A quasi-experimental study with control sites evaluated the impact of SRTS programing in Oregon and also showed promising results. Eugene, Oregon made a substantial investment in SRTS programs and showed that schools engaged in SRTS programs were associated with significant increases in walking for school travel.[7] Education and encouragement-only programs did not significantly increase walking but significantly increased biking (by 5%). The cumulative impact was observed when the SRTS program was implemented in addition to education and encouragement. Walking as mode of travel was significantly increased (by 20%). Although rate of biking also increased the change was not significant. [7]

Discussion and Conclusions

Current evidence suggests that US state laws related to AT and safety, such as requiring crossing guards or speed zones, can reduce barriers and increase the odds of students actively commuting to and from school.[4,5] Bussing distances also influenced whether students walked or cycled to school. Shorter bussing distances have less impact on students opting to walk or cycle.[4] A Canadian survey showed that most schools are more likely to have passive policies and facilities that encourage active transportation (e.g., rollerblades permitted on school grounds, bike rack in a secure area) than develop and implement active programming (e.g., safe route identification).[8] Evaluations of AT programs controlling for other factors (e.g., weather, gas prices) have demonstrated positive AT program effects.).[7] Furthermore, the uptake of SRTS in two different US states demonstrated positive impacts of legislation adoption on promoting active transport to school.[6,7]

Implications for Practice

There is limited literature that assesses the impact of adopting active transport-related policies. AT planning is often associated with millions of funding invested.[6,7] Given the findings above, the development of Canadian support strategies is needed to increase the

number of students choosing AT for school travel. These strategies needing support include laws to support crossing guards and speed zones, as well as working with school boards to to encourage municipalities to make the community environment around schools more supportive of AT[8] (e.g., develop Active Transportation Master Plans). Further research is needed to evaluate the benefits of adopting AT plans and policies in Canada.

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Specifications and Limitations

This Evidence Brief presents key findings from the best available evidence. Its purpose is to investigate a research question in a timely manner to help inform decision making. This report is not a comprehensive review of the literature, but rather a rapid assessment of research evidence. There may be relevant studies that are not included and these may alter the conclusions drawn from the document.

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