Active Transportation to School

Trends Among U.S. Schoolchildren, 1969–2001

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Background: Rising rates of overweight children have focused attention on walking and biking to school as a means to increase children's physical activity levels. Despite this attention, there has been little documentation of trends in school travel over the past 30 years or analysis of what has caused the changes in mode choice for school trips.

Methods: This article analyzes data from the 1969, 1977, 1983, 1990, 1995, and 2001 National Personal Transportation Survey conducted by the U.S. Department of Transportation to document the proportion of students actively commuting to school in aggregate and by subgroups and analyze the relative influence of trip, child, and household characteristics across survey years. All analyses were done in 2006.

Results: The National Personal Transportation Survey data show that in 1969, 40.7% (95% confidence interval [CI]=37.9–43.5) of students walked or biked to school; by 2001, the proportion was 12.9% (95% CI=11.8–13.9). Distance to school has increased over time and may account for half of the decline in active transportation to school. It also has the strongest influence on the decision to walk or bike across survey years.

Conclusions: Declining rates of active transportation among school travelers represents a worrisome loss of physical activity. Policymakers should continue to support programs designed to encourage children to walk to school such as Safe Routes to School and the Centers for Disease Control and Prevention's KidsWalk. In addition, officials need to design policies that encourage schools to be placed within neighborhoods to ensure that the distance to school is not beyond an acceptable walking distance.

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Introduction

Alarmed by the tripling in rates of overweight children and adolescents between 1980 and 2002,[1] public health officials are searching for ways to improve children's activity levels. Increasing the rates of walking and biking to school may be an effective means of accomplishing this[2–4] and has been identified as a goal in *Healthy People 2010*.[5] Policymakers have also begun to fund programs to encourage walking to school. For example, the most recent federal transportation bill, Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), authorized $612 million in funding over the next 5 years for Safe Routes to School (SR2S) programs.[6] The Centers for Disease Control and Prevention has launched the KidsWalk-to-School program to encourage parents to walk their children to school.

Studies have found that active transportation to school (ATS) provides a substantial portion of children's physical activity[7] and is associated with higher levels of energy expenditure.[8] Associations between ATS and body mass index (BMI) and total physical activity are less clear. Studies of British primary-school children[9] and Nebraskan elementary students[10] showed positive associations between ATS and total physical activity. However, a study of 5-year-old British boys found no association between ATS and overall physical activity.[11] An association between lower BMI and ATS was found for fourth- and fifth-grade boys.[12] However, other research has shown no relationship[13] or a positive association.[10]

Despite the potential health benefits, several studies have reported a decline in walking and biking for schoolchildren in the United States between 1969 and the present.[14,15] However, little is known of the details of this decline. Previous studies have not looked at active commuting data during the intervening years to establish a trend definitively. In addition, there has been little study of the factors causing the decline in walking. Although existing research has identified distance to school, traffic, and stranger danger as the top barriers to walking to school,[14,16] there has been no analysis of longitudinal effects. This study fills the gap in the research by analyzing

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data from the National Personal Travel Survey (NPTS) conducted by the U.S. Department of Transportation between 1969 and 2001 to document trends in walking to school, demonstrate how changes in distance to school have had an impact on the overall change in walking to school, and analyze the relative influence of trip, child, and household characteristics on ATS across the study period.

Methods

Survey Description

The NPTS is a population-based survey conducted by the U.S. Department of Transportation (DOT) in 1969, 1977, 1983, 1990, 1995, and 2001. The survey collects information on all trips undertaken by members of selected households on a randomly assigned survey day. Household members are asked to provide information on all trips including purpose, mode, and travel time. Trips are defined as travel involving a change of address. Data are collected on the demographic characteristics (e.g., age and gender) of all household members. Race and ethnicity are collected for the adult respondent, generally a parent or guardian. For all surveys after 1969, individual-level data are available; for the 1969 survey, a DOT report, *Transportation Characteristics of School Children*,[17] summarizes answers to the question, "How did [child's name] usually get to school?" and "How many miles was it from home to [child's name]'s school?"

Although the NPTS is the only source of longitudinal data on children's school travel in the U.S., there are several important limitations. All of the information for children under 14 and much of the data for 15- and 16-year-olds is proxy-reported by adults in the household.[18] However, it is likely that parents are accurate reporters because the trips originate from home and occur regularly. Next, there have been important changes in the administration and design of the NPTS. First, the 1969–1983 surveys used in-person interviews conducted by field staff of the Census Bureau; subsequent surveys relied on telephone interviews conducted by private research firms.[17–19] Second, prompts were added in the 2001 survey to encourage reporting of nonmotorized trips.[18] Third, the 1969–1983 surveys were based on a clustered sample design; more recent surveys used a nonclustered list-assisted random-digit-dial sample stratified by geographic area.[18] Fourth, the 1969 survey asked for the "usual" mode to school, as opposed to the "actual" mode on the survey day as in all other years. The two are not identical; however, studies of adult work trips show they are quite close for walking.[20,21] Finally, response rates were markedly lower for the 1995 and 2001 surveys due to the introduction of a travel diary system that required a two-stage data collection process.[18] For example, the 1990 response rate was 87%. The comparable rate was 34.3% in 1995 and 38.9% in 2001. Although it is difficult to quantify the effects of these changes, the majority were undertaken to ensure that all trips were being captured and improve calculations of trips per day.[18] Because of that, methodologic changes should not alter the findings of this analysis that focuses on comparing mode split for a primary trip purpose across years.

Sample Selection

For this analysis, trips are considered to be for school if (1) the respondent is aged 5 to 18, (2) the trip occurs on a weekday morning, and (3) if the purpose is school (1969), civic/educational/religious (1977) or school/church (1983–2001). The surveys capture the primary mode used to reach school. For example, if a student walked to a school bus stop, the trip would be counted as a school bus trip and not as a walking trip. Based on this definition, 4608 surveyed individuals made school trips in 1977; 1670 in 1983; 4824 in 1990; 9898 in 1995; and 14,553 in 2001. The 1969 report states that the sample size was 6000 households but does not specify how many children this number represented or report the unweighted sample size by subgroup. All analyses were conducted in 2006.

Analysis

Active Transportation Rates

Estimates of the prevalence of walking and biking for the 1977–2001 surveys were calculated for each subgroup by age and race using SAS 9.1 (SAS Institute, Inc., Cary NC, 2004). Weighting factors accounted for unequal selection probabilities, nonresponse, additional residential phone lines and were post-stratified to census population estimates by geographic area, race, and time of year. The weights were used to project from the sample to national averages. The reported mode splits were standardized to the 2001 NPTS age and race (defined as non-Hispanic white, and other) distribution. Standard errors, corrected for the complex survey design, were calculated using the PROC surveyfreq command in SAS 9.1 for 1977–2001 data. For the 1969 data, standard errors were obtained through interpolation of the reported table of standard errors for percentages.

Analysis of the 1969 data is limited by the information available in the DOT summary report. The 1969 data cannot be fully standardized to the 2001 age and race distribution because data were only disaggregated to the elementary, junior, and high school level, and there is no information on the respondents' race. The aggregate numbers for 1969 have been standardized to the 2001 distribution by elementary, junior high, and high school. Next, the 1969 survey groups walking and biking into one category, making it impossible to look at these modes independently. Finally, because the report does not report variation by race and gender, no analysis of these factors is possible.

Longitudinal Analysis of Change

The NPTS data are used to explore how changing distances between home and school have affected the decline in ATS. This is accomplished by normalizing rates of ATS to the 2001 distribution of students by distance to school (as well as age and race). This is

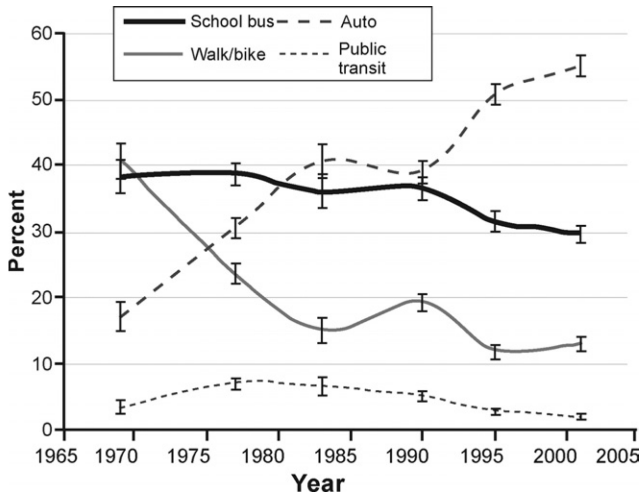

Figure 1. Standardized[a] mode shares for trips to school. [a]Standardized to 2001 age and race distribution. Error bars represent the 95% confidence interval.

equivalent to asking what the mode split would be if there had been no change in the spatial distribution of schools and students across survey years. The difference between the distance-standardized and the age–race-standardized decline in ATS represents the effect of changing distance between home and school on youth travel behavior.

Logit Model

To understand the relative influence of individual, household, and trip characteristics across the study period, binary logit models predicting whether a child walked or biked to school were constructed using individual trip records from the 1977 through 2001 surveys. The Swait–Louviere test[22–24] showed that the parameter vectors, β, were different across years (χ^2=226, p<0.01) even allowing scale factors and the alternative-specific constant to differ by year. This suggests that modeling each survey year separately provides the best fit to the data. Wald tests are used to analyze whether the coefficients vary across the survey years to assess whether the relative influence of factors has changed. Logit analyses were conducted in Stata 9.2 (Stata Corp., College Station, TX) using the logit command with robust standard errors using appropriate weighting factors. Sample sizes are reduced because individuals with missing data for household income and vehicle ownership have not been included in the analysis.

Results

Analysis of the NPTS data shows that walking and biking were the most common means of getting to school in 1969, accounting for 40.7% (95% CI=37.9–43.5) of all trips (Figure 1). By 2001, active commuting to school had declined by 27.8% to 12.9% (95% CI=11.8–13.9) of school trips. Nearly the entire decline in ATS occurred between 1969 and 1983 with the sharpest change between 1969 and 1977. The decrease in walking and biking is mirrored by a rise in driving to school. For example, 55.0% (95% CI=53.6–56.5) of students reached school by private vehicle in 2001 compared with 17.1% (95% CI=14.9–19.3) in 1969. Use of school buses and public transit declined during the study period but not as sharply as active modes.

Variation in Active Transportation Rates

Elementary students, who had the highest rates of ATS in most years, experienced the steepest decrease, 34.2%, in walking and biking between 1969 and 2001 (Table 1). Approximately three quarters of the overall decline among young students occurred between 1969 and 1977. Although walk and bike rates have continued to slip for elementary students since 1977, high school students experienced the largest decline (14.9%) between 1977 and 2001 of any age group.

Boys have higher rates of ATS in each year, but the decline in walking to school has affected both genders equally (z=0.74, p=0.459). Minority students are twice as likely to walk to school as whites across all survey years, likely reflecting their lower level of automobile ownership across all survey years (data not shown). Although the decline in walking between 1977 and 2001 is higher for minority students, there is no statistically significant difference in the decline between white and minority students (z=1.54, p=0.123).

Walking accounts for more than 90% of ATS. Although walk rates have fallen sharply at all age levels, biking had a statistically significant decline between 1977 and 2001 only at the high school level. For those who walk, travel times have remained relatively constant during the study period ranging from a low of 10.0 minutes (95% CI=9.2–10.8) in 1990 to a high of 12.7 minutes (95% CI=11.2–14.3) in 2001. Bike trip times range from a low of 8.6 minutes (95% CI=6.8–10.5) in 1990 to a high of 13.2 (95% CI=10.8–15.6) in 2001. Walk and bike travel times increase slightly with the age of the students, but the differences between grade levels are not statistically significant.

Longitudinal Effects of Distance to School

Across all years, ATS varies sharply with distance to school. In 1969, 85.9% (95% CI=82.3–89.4) of students living less than 1 mile from school walked or biked compared with 1.6% (95% CI=0.4–2.8) for students living 3 or more miles from school (Figure 2). By 2001, the pattern remained the same. However, the proportion that chose to walk for trips of less than 1

Table 1. Standardized[a] percentages of students who walk and bike to school by grade level

	1969	1977	1983	1990	1995	2001	1969–2001 Δ	1969–2001 95% CI	1977–2001 Δ	1977–2001 95% CI
Total (5–18)										
Walk/bike	40.7	23.5	15.0	19.2	11.7	12.9	−27.8	(−30.8,−24.9)	−10.6	(−12.5,−8.8)
Walk	NA	22.5	14.5	18.2	10.6	12.1			−10.4	(−12.2,−8.6)
Bike	NA	1.0	0.5	1.0	1.1	0.8			−0.2	(−0.6,0.2)
Elem (5–11)										
Walk/bike	49.3	24.2	12.9	20.8	13.7	15.1	−34.2	(−38.3,−30.1)	−9.2	(−12.0,−6.3)
Walk	NA	23.7	12.7	19.9	12.4	14.3			−9.4	(−12.2,−6.6)
Bike	NA	0.5	0.2	0.9	1.3	0.8			0.2	(−0.2,0.7)
JHS (12–13)										
Walk/bike	41.6	21.9	10.1	21.8	11.6	15.2	−26.4	(−34.5,−18.2)	−6.7	(−11.2,−2.1)
Walk	NA	20.6	9.8	20.0	10.6	14.1			−6.6	(−11.0,−2.2)
Bike	NA	1.3	0.3	1.8	1.0	1.2			−0.1	(−1.3,1.1)
HS (14–18)										
Walk/bike	26.4	23.0	20.8	15.2	8.6	8.1	−18.3	(−23.5,−13.2)	−14.9	(−17.6,−12.3)
Walk	NA	21.5	19.7	14.6	7.8	7.6			−14.0	(−16.5,−11.4)
Bike	NA	1.5	1.1	0.7	0.8	0.5			−1.0	(−1.6,−0.3)
Male										
Walk/bike	NA	24.7	15.4	21.8	13.0	13.4			−11.3	(−13.9,−8.6)
Walk	NA	23.3	14.9	20.4	11.6	12.3			−10.9	(−13.5,−8.4)
Bike	NA	1.4	0.6	1.4	1.4	1.1			−0.3	(−1.0,0.3)
Female										
Walk/bike	NA	22.2	14.5	16.4	10.2	12.5			−9.7	(−12.3,−7.2)
Walk	NA	21.8	14.1	15.9	9.4	12.2			−9.6	(−12.1,−7.1)
Bike	NA	0.5	0.4	0.5	0.8	0.3			−0.1	(−0.5,0.2)
White										
Walk/bike	NA	18.3	12.2	14.8	9.2	8.8			−9.5	(−11.2,−7.8)
Walk	NA	17.2	11.4	13.5	7.8	8.0			−9.2	(−10.8,−7.6)
Bike	NA	1.1	0.8	1.3	1.4	0.8			−0.3	(−0.8,0.1)
Non-white										
Walk/bike	NA	32.6	20.1	26.9	15.9	20.0			−12.6	(−16.8,−8.5)
Walk	NA	32.0	20.1	26.4	15.3	19.4			−12.6	(−16.7,−8.6)
Bike	NA	0.6	0.0	0.5	0.5	0.6			0.0	(−0.7,0.7)

[a]Standardized to 2001 age and race distribution.
Δ, change; Elem, elementary; HS, high school; JHS, junior high school; NA, not available.

mile dropped to 49.9%[a] (95% CI=46.5–53.4) from 85.9%. Not only did the likelihood of walking to school decline for these trips, but the percentage of students living close to school also declined (Figure 3). For example, 66.1% (95% CI=63.4–68.8) of students lived less than 3 miles from school in 1969, and by 2001, the comparable figure was 49.5% (95% CI=48.1–50.9).

Standardizing to the 2001 distribution of students by distance to school identifies how changes in the spatial distribution of schools and residences during the survey period have affected walking and biking (Figure 4). The distance-standardized decline in ATS between 1969 and 2001 is 14.9% (95% CI=−16.7 to −13.0), compared to 27.8% (Table 1) when standardized only for age and race. Therefore, changes in the spatial distribution of students with respect to their schools may account for 47% (=(27.8-14.9)/27.8) of the total decline between 1969 and 2001. From 1977 to 2001, the distance-standardized change is −7.4% (95% CI=−8.6 to −6.2), and the age- and race-standardized change is −10.6% (95% CI=−12.5 to −8.8).

[a]This does not mean that Objective 22-14b of *Healthy People 2010*, which aims to have 50% of school trips of *1 mile or less* made by walking has been met. This analysis is for trips of *less than* 1 mile (chosen to match the 1969 categories). Because it is common in transport surveys to have large proportions of the sample round trip distance to whole numbers (e.g., 1 mile), this definitional difference is important.

Multivariate Models of Association

Binary logit models show that trip distance has the strongest effect on ATS (Table 2). Across the survey years, living less than 1 mile from school increased the odds of walking or biking by at least a factor of 160 over the reference category of living 3 or more miles from school. Children between 5 and 10 were less likely to use ATS in all years except 1995; there is no statistically significant difference in behavior between 11- to 15-year-olds and the reference category of 16- to 18-year-olds. Being female consistently lowered the odds of walking or biking by a factor of 0.7. Race only had a significant effect on behavior in 2001, with non-whites being more likely to use active modes. Children from households with incomes below $30,000 were more

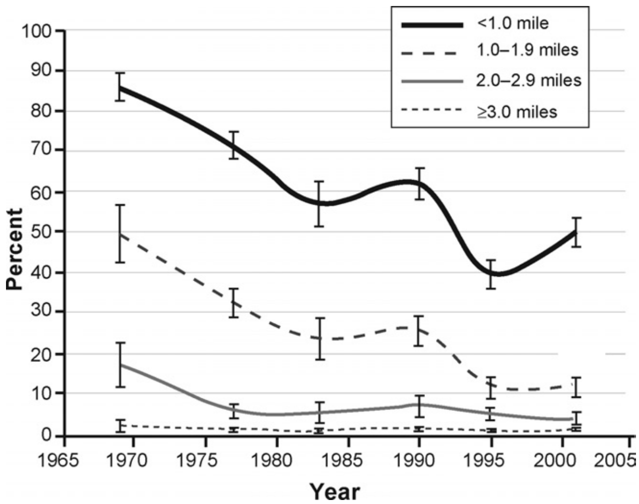

Figure 2. Walk/bike mode share by distance to school. Error bars represent the 95% confidence interval.

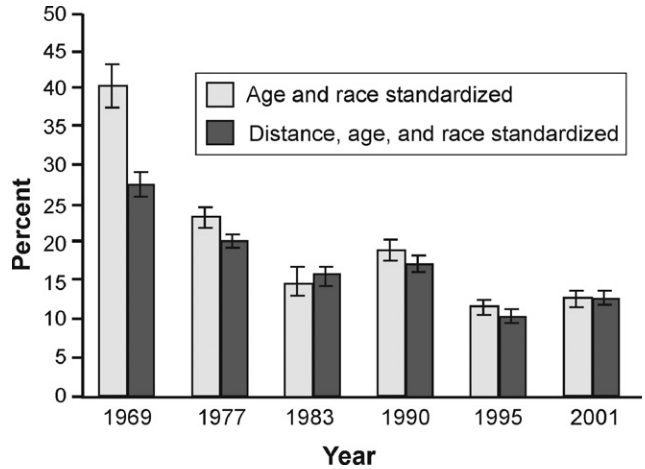

Figure 4. Effect of distance standardization[a] on walk/bike school travel. [a]Standardized to 2001 population. Error bars represent the 95% confidence interval.

likely to walk, but the effect was only significant in 2001. Living in a zero-vehicle household greatly increased the odds of ATS. Students living in census-defined rural areas were much less likely to walk to school with the effect ranging from a factor of 0.26 in 1983 to 0.71 in 1990.

According to Wald tests of coefficient equality across survey years, the relative influence of explanatory factors has not changed across survey years for most variables. However, the data suggest that the effect of living close to school (although still the most critical predictor) may have had a diminishing effect on ATS in recent years. For example, living between 1.0 and 1.9 miles from school increased the odds of ATS by a factor of 21.4 in 2001 but by 50.5 in 1977; a similar pattern is observed for living less than 1 mile from school. However, in both cases, there is no notable difference in the 1977 and 2001 values.

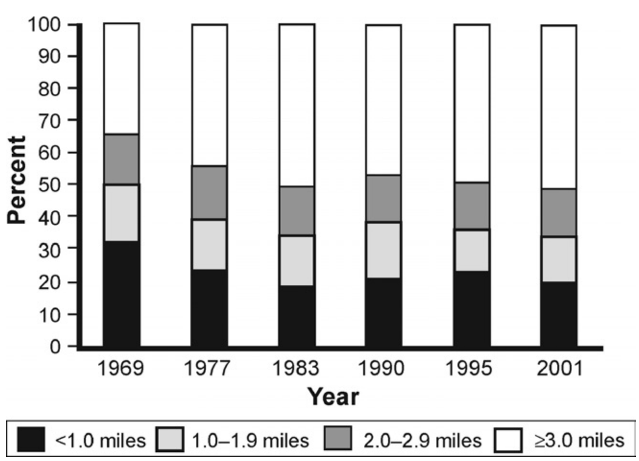

Figure 3. Population distribution by distance to school.

Discussion

This study documents a sharp decrease in ATS from 1969 to 2001. Most of the decline in ATS occurred between 1969 and 1983, with the largest proportion between 1969 and 1977. The longitudinal analysis also showed that distances to school increased most rapidly during this period. School consolidation, which sought to increase educational opportunities and achieve economies of scale may partially explain these observations.[25,26] In 1970 (data for 1969 are unavailable), there were 89,372 public schools in the U.S.; by 1983, the number was 81,418.[27] Since 1984, the number of schools has increased to accommodate rising enrollments.[28] More than 80% of the school closures were at the elementary level, which may explain why the decline in ATS was sharpest at that level. These data suggest a correlation between school consolidation, trip distance, and declining ATS.

This decrease in walking and biking is troubling because it comes during the same time period in which rates of overweight children and adolescents have increased rapidly. It is not clear how the decline in walking to school has affected rates of overweight, but the decrease in walking represents an important loss of everyday physical activity for American students, as traveling to and from school accounts for 20 minutes of physical activity on average. Understanding why walk rates declined is critical to reversing the trend and using interventions focused on ATS to combat childhood obesity.

Distance Strategies

This analysis suggests that nearly half of the decline in walking between 1969 and 2001 can be tied to increased distance between home and school during the study period. The logit analyses also showed that dis-

Table 2. Adjusted[a] odds ratios for active transportation to school

	1977	1983	1990	1995	2001	Wald χ^2 test of equality across years
Trip Distance						
Less than 1 mile	276.35**	435.11**	358.01**	161.62**	164.44**	4.92
1–1.9 miles	50.51**	76.40**	81.64**	32.10**	21.37**	9.28*
2–2.9 miles	7.51**	13.53**	11.99**	14.42**	5.93**	3.12
3+ miles (reference)	1.00	1.00	1.00	1.00	1.00	
Age						
5–10	0.46**	0.20**	0.39**	1.16	0.52*	12.38**
11–15	0.80	0.57	0.68	1.94	1.06	7.40
16–18 (reference)	1.00	1.00	1.00	1.00	1.00	
Female	0.77*	0.65*	0.70**	0.70*	0.71**	0.77
Non-white	1.00	0.78	1.07	1.15	1.34**	4.33
Licensed driver	0.47**	0.50	0.29**	0.71	0.26**	4.31
Income (2001$)						
Less than $30,000	1.26	1.27	1.35	1.15	1.92**	5.13
$30–60,000	0.72*	0.92	1.27	1.12	1.10	8.80
$60,000+ [reference]	1.00	1.00	1.00	1.00	1.00	
HH Vehicle Access						
Zero vehicles	2.12**	5.00**	3.73**	2.17**	1.34	11.20*
< 1 car per driver	1.33*	1.40	1.54*	1.38	1.06	2.33
1+ cars per driver	1.00	1.00	1.00	1.00	1.00	
Rural Area	0.27**	0.26**	0.71*	0.57**	0.44**	23.98**
n	4,565	1,641	3,617	8,294	13,684	
Log likelihood	−1,217.8	−352.2	−970.1	−1,916.9	−2,980.4	
Wald χ^2 of estimated vs constant-only model	905.8**	303.4**	547.4**	650.4**	922.4**	

[a]Adjusted for all factors listed.
*p<0.05,
**p<.0.01.
HH, household.

tance had the strongest effect on the probability of walking or biking, confirming previous research in Australia,[29] Oregon,[30] Florida,[15] California,[31] and England.[32] This is important because policymakers can influence how far children travel to school through school-siting guidelines and local planning practices.

Until recently, school-siting policies encouraged the construction of schools on large campuses.[33] In many instances, sites meeting these criteria were only available on the outskirts of communities—often not integrated into the new housing developments they serve—which increased the distance to school.[34] Some districts found that retrofitting existing schools in built-out areas was not feasible given that they did not conform to the guidelines. This often meant that the school was closed, and a new one was built in an outlying area.[34,35] Recent efforts to combat "school sprawl," such as the elimination of minimum acreage guidelines,[36,37] provide a means to place schools near children, particularly at the elementary level.

Despite the promise of these efforts, it is important to recognize some of the difficulties of distance-based strategies. Many trends in education policy are moving away from geographic-based school assignment. Magnet and charter schools, desegregation programs, and the No Child Left Behind legislation allow children to attend schools based on choice rather than geography. In practice, this may increase trip distances and make ATS less likely. In addition, demographic trends such as aging in place or changes in the school-age population can limit opportunities for ATS even when schools are integrated into neighborhoods. For example, Montgomery County, Maryland, has closed schools in older areas closer to Washington DC and planned new schools in outlying areas because families with young children have sought cheaper housing in those places.[38,39] These difficulties highlight the need to preserve and improve opportunities at the school site for physical activity, particularly through physical education and recess.

Other Strategies

The analysis of distance to school suggests that factors besides distance account for half of the decline in walking during the study period and most of the decline since 1977. Parents consistently rank traffic danger as a barrier to walking to school.[14,16] Cross-sectional surveys have also shown that pedestrian infrastructure and amenities such as sidewalk coverage,[13,15,40] street connectivity,[30] busy streets on route,[29,30] and mixed land uses[31] affect ATS. SR2S programs, which use engineering and education to make the school trip safer, are well suited to addressing these concerns. Evaluation of SR2S program are limited, but the Marin County, California program that emphasizes education and engineering reported increases of 64% in the proportion of students walking to school.[41] Boarnet et al[42] found that traffic improvement projects funded by the California SR2S program produced increases in ATS for students who passed projects on their way to school.

Stranger danger has also been identified as a top barrier to ATS.[14,16] One intervention, which addresses this concern, is the "walking school bus" where adults escort a group of children to school on a regular schedule and route. These programs appear to be effective but require a great deal of parental input and in one New Zealand study, were shown to be less likely to exist in disadvantaged neighborhoods.[43]

Another factor—convenience—may play an important role in declining pedestrianism. A study of school travel in Oregon showed that the convenience of dropping children at school on the way to work was an important factor in not allowing them to walk.[30] That study also found that walking was more common on the trip home from school, perhaps due to the lack of parent chauffeurs in the afternoon. Similarly, the decline in walking among high school students is likely linked to the high levels of auto access that today's teens enjoy. Convenience has not been well researched because most surveys focus only on barriers to walking.[14,16,44] However, research has shown that mothers have primary responsibility for children's travel[45] and mothers' labor force participation rates have risen substantially during the study period.[46,47] These trends combined with rising automobile ownership[48] during the study period may have made it more convenient for a parent, particularly mothers, to drop their child at school and for teenagers to drive themselves and their friends rather than walking.

Limitations

There are several limitations to this analysis. The primary concerns are the changes in survey administration during the study period. These include smaller samples in the early years of the survey, a shift from in-person to telephone interviews, the addition of prompts regarding walking trips in the 2001 survey, and a change from a clustered sampling methodology to one based on random digit dialing. Whereas it is not possible to fully estimate the influences of these changes, most of them have affected reporting of trip rates, rather than mode split, and should therefore have less of an effect on this analysis.

Conclusion

Walking and biking to school decreased sharply in the U.S. from 1969 to 2001. The decline has been most acute at the elementary level and among minorities. This trend represents a critical loss of everyday physical activity for youth and could be part of the complex explanation of the increase in childhood obesity in this country. Analysis shows that 47% of the decline in walking to school is explained by increased distances between home and school during the study period. Policies that affect this distance, such as school siting, should begin to explicitly consider access to schools in planning decisions. Public officials should also continue to support programs such as SR2S that address safety concerns. However, because distances will remain long for many students, it will be important to provide opportunities for physical activity at the school site through recess and physical education.

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