Stranger Danger, Cell Phones, Traffic, and Active Travel to and from Schools

Perceptions of Parents and Children

Shannon M. Sweeney and Leigh Ann Von Hagen

This paper summarizes one-on-one interviews with parents and their middle school children to identify similarities and differences in parents' and children's perceptions of the environment that surrounds travel to and from school, how these perceptions form, and how they influence travel mode choice to and from school. Forty-eight interviews were conducted with parent–child pairs in three New Jersey communities. In particular, the interviews examined active travel modes, such as walking and bicycling, to and from school. Direct communication with parents and students allowed for a thick description of perspectives and concerns. Analysis of qualitative data showed differences in adult versus child perceptions and the emergence of several themes related to the environment and children's capacity for independence. Themes included differences in comfort with solo travel, which depended on time of day, parental concern with abductions and sexual offenders, common use of cell phones and GPS technology to address safety fears, and perceptions with respect to the safety of travel modes on the basis of gender. Implications for practice included the support of opportunities for children to walk in groups, such as the designation of meet-up locations, where students could gather without parental accompaniment, and the encouragement of Walk to School and Walk from School days to help parents and students become comfortable with walking trips. To help children attain the benefits of active travel, schools and communities also could provide skills-based education on personal safety and could identify safe areas, where students could go if problems arose.

One of the ways that children can obtain more physical activity is through active travel, primarily by walking or bicycling to and from school. However, the number of U.S. students who walk or bicycle to school is at a historic low (*1*). Nationally, many schools and communities encourage walking and bicycling under Safe Routes to School programming. However, parents and sometimes their children commonly hold negative perceptions of how safe it is to walk or to bicycle. The research reported here aimed to identify parent and child perceptions of the built and social environment, how these perceptions were formed, and how they influenced travel mode choice.

To gain a deeper understanding of the perceived safety issues, one-on-one interviews were conducted with parents or guardians and their middle school students. Qualitative methods (i.e., interviews) provide the opportunity for researchers to gather detailed descriptive information, ask follow-up questions, and pursue extended dialogue on topics of concern that arise from initial questions. Middle school students (ages 11 to 14) were chosen instead of elementary school students because of their ability to be more independent and to better articulate their perceptions during an interview than younger children. The interviews of middle school students also increased the potential for their participation in solo travel to school. A parent and his or her child were interviewed individually so that each was able to talk freely without outside influence. Interviews with parents and students made it possible to identify facilitators and barriers to active travel, in addition to perceptions of the built and social environment and how these perceptions affected travel mode choice.

This qualitative analysis identified similarities and differences in parents' and children's perceptions and common themes from interviews collected in three New Jersey communities. In this paper emergent themes are highlighted and described through representative quotes from participants. Implications of the findings on Safe Routes to School programming, future research needs, and ways to improve industry practice are included.

Over the past 40 years, active travel has been on the decline, especially by children. Only 12.9% of all U.S. schoolchildren used active travel to school in 2001 compared with 40% in 1969 (*1, 2*). Active travel decline occurred even by those who lived close to school. In the 1960s, more than 85% of students who lived within a mile of a school walked, while by the early 2000s fewer than half walked to school (*1*). During this same time, driving to school increased from approximately 20% to 55% (*1*). Active travel decline and a concurrent increase in passive travel are of concern with respect to declining physical activity rates, rising obesity rates, worsening air quality, increased traffic (*3*), and decreased independence (*4*). Declining physical activity has become grave enough to seize the attention of physicians, public health officials, parents, schools, planners, and policy makers, who now seek possible solutions.

Perceptions inform our thoughts and influence the way in which we make decisions in our environment (*5*). They are important to examine, because they have been shown to influence how people decide to travel. In addition, people's perceptions do not always agree with measured features, such as traffic speed or volume. In one study, almost 1,300 adults in a telephone survey in Forsyth County, North Carolina, and in Jackson, Mississippi, were asked about high-speed traffic and a lack of sidewalks as barriers to physical activity (*6*). Speed, volume, and street connectivity also were measured with a geographic information system. Participants' perceptions of environmental characteristics (e.g., traffic speed, volume) were poorly

S. M. Sweeney, Robert Wood Johnson Medical School, Department of Family Medicine and Community Health, Division of Research, Rutgers University, 1 World's Fair Drive, Somerset, NJ 08873. L. A. Von Hagen, Alan M. Voorhees Transportation Center, Edward J. Bloustein School of Planning and Public Policy, Rutgers University, 33 Livingston Avenue, New Brunswick, NJ 07857. Corresponding author: L. A. Von Hagen, lavh@ejb.rutgers.edu.

Transportation Research Record: Journal of the Transportation Research Board, No. 2582, Transportation Research Board, Washington, D.C., 2016, pp. 1–7.
DOI: 10.3141/2582-01

associated with actual speed and volume, which demonstrates the weight given to perception versus reality when decisions are made about travel (*6*). Similarly, in a 1987 telephone survey of U.S. parents with at least one child under age 13, the level of concern about abductions by strangers was high relative to the data on actual rates (*7*). In addition, parents were less concerned about pedestrian injuries, automobile accidents, bicycle injuries, and drowning, although the risks of their occurrence were substantially higher than they were of abduction (*7*). The variation between people's perceptions and what the statistics or measured features indicate demonstrates that it is important to examine perceptions and their influence on mode choice.

Some studies have examined associations between adults' perceptions of the environment and children's active travel, including perceptions of personal safety. In several studies, adults' negative perceptions of safety were found to be associated with reduced active travel to school by their children. In one study, caregivers rated their perceptions of neighborhood personal safety by ranking their agreement with the following statement, "the neighborhood is not safe for a child to walk/bike to/from school alone." For every unit increase (an increase in lack of perceived safety) the odds of walking to school declined 13% (*8*). Thus the more caregivers perceived the neighborhood to be safe, the higher the odds that their children used active travel to get to or from school. In London, parents who were found to worry about abduction or molestation were four or more times likely to drive their children to or from school than those "not at all" worried about abduction or molestation (*9*). Similarly, Kerr et al. found that a combination of factors in an overall parental concern variable had the strongest explanatory power to determine whether a child participated in active travel (*10*). Parents with "few concerns" were five times more likely to allow their children to participate in active travel than those with "many concerns" (*10*). Thus parents' perceptions of safety may be an important factor that influences their children's travel mode.

Although traffic is commonly cited as a barrier to children's active travel (*11, 12*), several studies have found no relationship between parents' perceptions of traffic and children's mode of travel to school (*9, 10, 13*). In studies that have found an association, parental perceptions of traffic have varied by age and sex. Parents of older children have expressed less concern about traffic safety than parents of younger children (*14*), and parental perceptions of heavy traffic were negatively associated with active travel for boys, although not for girls in one study (*15*). More recently, in a study that used multivariate-ordered response models, parents of boys and older children in the Los Angeles, Riverside, Orange County, metropolitan statistical area of California were less likely to be concerned about crime and traffic speed than were parents of girls and younger children (*16*). Parents may be more protective of these latter two groups because younger children are less likely to be able to negotiate situations if any problems arise and parents may have social tendencies to characterize girls as more vulnerable. These possible gender differences remain important in the examination of how to increase active travel rates, despite inconclusive evidence of their impact. Moreover, perceptions of traffic may vary widely across geography and thus should be examined in context.

INTERVIEWS

One-on-one, in-depth interviews were conducted with 48 parent–guardians (i.e., all of whom are referred to here as "parents") of middle school students from three New Jersey communities (i.e., one in northwest and two in central New Jersey) from May 2013 to November 2014. Each parent interview was followed by a one-on-one, in-depth interview with the parent's child, who was a middle school student (i.e., in Grades 6 to 8, ages 11 to 14). The interviews were conducted with parents and children individually so that their perceptions could be examined not only more deeply through the analysis of qualitative data but also for the similarities and differences between parent and child perceptions, along with what factors might have influenced their perceptions.

Site Selection

Middle schools were selected in three New Jersey municipalities (i.e., Highland Park, Stanhope, and Franklin Township) for their varied yet suburban built environments. These locations were purposefully selected to examine variations across communities with different densities and socioeconomic status.

Highland Park is a community just across the Raritan River from New Brunswick in central New Jersey. Graduate students and Rutgers University faculty dominate the borough; more than 60% of the borough's residents hold at least a bachelor's degree. Highland Park has a gridded street pattern, a downtown, and sidewalks are ubiquitous. In contrast, Stanhope is a municipality in the rural northwest part of the state; slightly more than 30% of the borough's residents hold at least a bachelor's degree. Outside of a small downtown with sidewalks and shops, the street network is not gridded and a busy, curving, high-speed state road runs through the town. Franklin Township is a large municipality located 4 mi from Highland Park. The built environment in Franklin Township varies, however. Near the middle school there, sidewalks are intermittent, and several busy county roads dominate. There is no gridded downtown, and there are many higher-speed winding roads. Basic socioeconomic characteristics of the three communities are shown in Table 1. The characteristics of the schools that the children attend are shown in Table 2.

Instrument

Semistructured, in-person, in-depth qualitative interviews that lasted approximately 40 to 60 min were conducted with each parent. The middle school student's interview protocol was similar, but the student interview was only 20 to 30 min in length, because students typically had fewer concerns, and parents provided information about their child's travel to and from school in addition to memories

TABLE 1 Key Demographic Information for One-on-One Interview Communities

Socioeconomic Characteristic	Highland Park	Stanhope	Franklin Township
Population	13,982	3,610	62,300
Median household income ($)	78,821	78,625	89,992
Population density (per mi^2)	7,728.1	1,966.3	1,350
Percentage of whites in school	44	81	18
Percentage of free or reduced lunch	32	15	41

TABLE 2 Key School Information

School Characteristic	Highland Park	Stanhope	Franklin Township
School name	Highland Park Middle School	Valley Road School	Franklin Middle School
Grades in school	6–8	K–8	7–8
Number of participating students	18	16	14
Number of students in Grades 6–8	325	120	1,050

of their own. Parents also described their municipality in greater depth and what brought them to live in that community. The protocol was approved by the Rutgers University Institutional Review Board, and all interview responses were kept confidential. Participation was voluntary, and the primary investigator conducted all interviews for consistency.

Recruitment

Participants were recruited through a variety of means. In Highland Park and Stanhope, a relationship was formed with the school district superintendent, who sent an e-mail home to all middle school parents with information about the study. Parents called or e-mailed and set up times to be interviewed. In addition, snowball sampling was used, through which participants suggested additional interviewees for the study. In Franklin Township, the principal, a vice principal, and the head of the parent–teacher–student organization helped communicate the project to all parents. The school did not have an e-mail distribution system for all parents, so a request for their participation in the interviews was sent to the 100 parents registered with the parent–teacher–student organization, who were asked to forward the request. Notices about the interviews also were left at eighth grade graduation events and at the school front desk, where parents were required to check in when they entered school grounds. An announcement about the interviews was made at Back to School Night, which many parents attended to learn about their child's classes. Parents called or e-mailed to set up times to be interviewed, and snowball sampling was used to recruit additional participants.

Parents in Highland Park received no compensation for their interview time. However, parents in Stanhope and Franklin Township received $20 for their participation, given the difficulty of participant recruitment in these locations. Interviews were performed with individuals who met two sampling criteria: (*a*) parent of at least one child currently in Grades 6 to 8 at the designated schools and (*b*) parents and children without access to bus transportation to school. This second criterion was included to ensure that children in the study did not live so far from school that they had no option to bicycle or walk there. Thus inclusion in the interviews was limited to parents whose children were not eligible to take a school bus. Parents could then talk about their travel mode choice and not have to state that there was no other choice because they lived too far from the school for their children to use active travel. Given the size of the communities, no bus transportation to and from school was offered in Stanhope or in most of Highland Park (aside from a small part of town considered to be located along a hazardous route). However, bus transportation was available to those students who lived more than 2 mi from the middle school in Franklin Township.

ANALYSIS AND RESULTS

The parent and student interviews were audio recorded (when acceptable to the participant) to ensure that quotes were verbatim. Field notes were taken by hand and then typed and expanded on promptly after each interview to ensure accuracy and to improve the richness of responses for coding. Data were analyzed according to sensitizing concepts and inductive emergent themes with the use of comparative content analysis and thematic analysis (Table 3).

In the 48 parent and 48 student interviews conducted, several themes emerged. Many of the parents, primarily from Stanhope and Franklin Township, described the "chaos" that occurred, particularly in the mornings, as they tried to get their children to school. Several parents in Franklin Township and in Stanhope stated that they had quit their jobs, "asked for a transfer," or "took a late lunch" to drive to school, pick their children up, and drop them off at home. Several parents stated that they paid for transportation, or for after-school care with transportation, which demonstrated what parents felt they needed to do to ensure that their children arrived home safely. Many "wished" school bus transportation were available and stated that they thought access to busing would "vastly simplify" their lives. Parents in Highland Park, where more students walked to and from school, did not describe their mornings as chaotic.

TABLE 3 One-on-One Interview Participant Information

Variable	Highland Park	Stanhope	Franklin Township
Total *N*	18	16	14
Students in Grade 6	5	3	0
Students in Grade 7	5	6	5
Students in Grade 8	8	7	9
Male student	9	7	6
Male parent	7	0	4
Walk a.m.	12[a]	1	1
Walk p.m.	15	7	5
Bike a.m.	2[a]	0	1
Bike p.m.	2	0	1
Drive a.m.	4	15	12
Drive p.m.	1	9	8

[a]Eight of these students were in 6:55 a.m. band and were always driven on those mornings.

Time of Day

Parents and students described the variation in the mode of transportation used in the morning with that used in the afternoon. Most students said that their mode preference varied by time of day. Most parents and students in Franklin Township and Stanhope and some in Highland Park were concerned about being late in the morning. Thus students were more likely to be driven in the morning. Some parents did not mind driving their children to school in the morning, because it was "not out of the way": parents dropped their children off and then continued on to work.

In the afternoon, most students in Highland Park and Stanhope stated that they preferred to walk home, because it was "fun," and there was "no reason to rush." Most students in all three communities indicated that they would be willing to walk a little out of their way to walk with classmates, particularly in the afternoon when they were less time-constrained, because to walk in a group made the trip feel safer and more enjoyable. More students reported walking home in the afternoon than reported walking to school in the morning. Of those that did not walk home in the afternoon, many said that they would have wanted to. However, in the morning many students preferred to be driven so that they could sleep in and would not be late. Even students in Highland Park who described walking to school almost every day stated that they got an occasional ride when they were running late. Students' thoughts from all three schools were similar as follows:

> If I walked, I'd have to get up a lot earlier and I don't like to get up early.

> I have more time to get ready when I get driven, I get to sleep more. There's not a big group in the morning maybe one or two people. Not a lot of people walk in the morning, it's easier to walk home.

> I get to sleep in later when I get a ride. In spring sometimes I get up early and walk, but I have to get up half hour earlier. Mostly I'm driven in the morning but can walk home.

Abductions and Sexual Offenders

Commonly, parent interview participants in Stanhope and Franklin Township described their primary concern about their middle school student as related to child abduction. In contrast, only two parents of 18 children in Highland Park mentioned the issue at all. Parents commented that "times had changed," and that, "in the world we live in," everyone had to be careful. A Stanhope parent stated that she "assumes everyone is a predator," while others described being aware that "anything could happen," which made them nervous to allow their children to walk or bicycle.

> You never know where the creeps are coming from, I read a book once and a girl who was 12 years old gets picked up from a bus stop. It was based on a true story, so you never know. No matter how much you can tell the kids don't talk to strangers and all that, they can intimidate the kids with guns and knives and take them, they're just kids.

> My primary concern is abduction, that I wouldn't see my little girl again. It's all over the news.

> My daughter does no walking at all for safety reasons. You look on the news and there is just too much going on all over. It's personal safety, you read about all the different things that are happening nearby and it's scary. There are incidents with strange people, you know?

Several parents, particularly parents of girls, mentioned that they were specifically afraid of sexual offenders. These parents commonly started in on the topic by discussing "strangers" more broadly before they described their concern about sexual offenders in more detail. Five parents mentioned that, to stay informed and keep their children safe, they checked sexual offender websites to see if there were any offenders in the neighborhood.

> I also look at the sexual offenders and the area gang activity online.

> I checked the sex offenders list when we were looking at houses, my wife is really against living near them and always is on the lookout on the site, so we're definitely concerned about that and traffic second.

> There's a site for sex offenders that is good to look at to know what could happen to your child.

Some of the children interviewed (i.e., typically those whose parents voiced concern about predators) stated worries about being kidnapped. However, the vast majority of students in Highland Park and more than half in Franklin Township and Stanhope were primarily concerned about traffic and the "crazy drivers who zoom" and "don't pay attention."

> I'm not too worried about being taken or anything, but the cars flying when I'm on the side of the road scare me.

> There are barely any sidewalks and when you're going across the street, no one will stop for you, it's usually pretty busy, that's the kind of stuff I worry about, nothing else.

Students described themselves as being less concerned about kidnapping and predators because they knew people along their routes to go to for help. They commonly said that they walked in groups, which they felt was protective. Students were less likely to base their perceptions on the media. They noted that they had "never had a problem" walking and therefore did not anticipate a problem.

> I know my way, I know everyone around, I know people here, I'm not worried.

> There are people on Hamilton and you can't get snatched near people, so I took all main roads [to get home] and so it's fine.

> I've never saw or heard anyone get hurt, so kids shouldn't be worried.

> It's a small town, we know people and the area if anything happened, know places you could run to if you got hurt or yards you could cut through, we know where to go.

Cell Phones and GPS Technology

Most parents reported that they felt more comfortable when their child had a cell phone regardless of the mode of transportation they used. Parents felt that possession of a cell phone allowed them to more easily know where their children were or to contact them, particularly if something went wrong. Parents, notably in Stanhope and Franklin Township, described their children as "needing to have the cell phone on." They "had to know" where their children were, "particularly after school." Overall, parents preferred their child to have a cell phone, particularly if they were walking, so the child could contact their parents and let them know where they were and that they had arrived at destinations safely. Parents commented that they got their children cell phones "earlier since they sometimes walk." A few stated that their child received a cell phone in third grade. Thus, cell phones may be a facilitator of active travel. In

addition, several parents described "watching" their children walk home from school via a GPS-enabled mobile application to ensure that they got home safely. Others reported that they had debated doing so. Although cell phones may make parents feel more comfortable and perhaps allow a greater number of students to walk, this technology may also allow parents to maintain a higher level of control and may rob their children of some level of independence, because they need to "constantly check in."

> They won't walk anywhere without the phone, I prefer for them not to, so it's win–win, they don't want to and I don't want them to.
>
> My son wanted to walk and asked, I agreed. I got him a cell phone for it. He has to call when he's leaving and when he's home.
>
> They are required to have it on [cell phone] and text me all the time. I've toyed with watching her cellularly. I've joked that I would do it. I haven't yet though, I know I'm overprotective.
>
> I can watch her from my office with the Find My iPhone app, you watch the bubble move, it makes me feel like I can see her.
>
> They have GPS on their phones and I haven't looked into this, but there is a need to have some way to track the kids. The school should support an app of some kind, I bet there is one, I should look into it.

The students interviewed said they were happy to have cell phones, and many said they had "asked for them," although most admitted that it was to "play on them" or to "text their friends." However, students also said that they felt more comfortable knowing that they had a cell phone "in case of an emergency" and to "know who to call" if something happened. Although some students were "frustrated" at how often they had to check in with their parents, most found it fair, given that their parents had purchased their phone. Despite their being required to check in, many commented that they often forgot to let their parents know where they were. Students also described the consequences for not telling their parents where they were, although they seemed to understand their parents' desire to be informed of their location.

> I have to check in, it's fine, I mean they got me the phone.
>
> If I forget to call my mom, even like once, my dad gets scared and nervous, and like calls and calls. I've been trying to stay on that because then I lose privileges of hanging out with my friends.
>
> She tracks my phone, with the Find My iPhone app, I don't care that she does or know when she does it, but she told me so I just try to behave.

Gender Differences

In Stanhope and Franklin Township, the parents of girls said that their child's gender influenced their active travel concerns, even if their daughter was not the child interviewed. Parents thought that girls, even when they traveled in groups, were more likely to be picked up or harassed than groups of boys or mixed gender groups. Parents often said they worried about their children walking or bicycling "because they were girls" and were particularly concerned about sexual predators that targeted girls. One parent was not sure that her child "as a girl . . . should be out for that long" in reference to the mile-long walk home from middle school. Although the parents interviewed did not specifically indicate that they set different rules for daughters than sons, the child's gender came up in several conversations as a reason that parents were not comfortable with their child walking, or as part of the reason that the child did not walk to or from school.

> She'd be a girl in the middle of the road alone. I don't know who's in the neighborhood, who is going to grab my child, what stray animals there are, what people are driving crazy, just no.
>
> I envision them pulling her into the car, she's a little girl and she hangs out with giddy little girls, they are tiny things with little legs and they are too vulnerable, I don't know if she could take care of herself.
>
> I'm worried about like perverts jumping out, though I'm concerned about people picking up the girls, like my daughter.
>
> They're still girls, maybe I'm sexist, I guess, but even a group of girls, I don't know. My son is a junior, he can walk them, there are seedy people.

The responses from parents in Stanhope and Franklin Township were much more alike than they were to the responses from the parents in Highland Park, particularly with respect to stranger danger. Parents and students in Highland Park were more apt to describe traffic rather than any other factor as a barrier to walking or cycling. The similarity prevailed between the responses in Stanhope and Franklin Township, despite the fact that the parents and students in Stanhope, like their counterparts in Highland Park, described their communities as places where "everyone knows each other," and "people look out for one another." By contrast, parents and students in Franklin Township described the community more in terms of its "convenient location" and "affordability."

Highland Park is known for its grid system, walking community, and higher residential density. In addition, the socioeconomic environment may have influenced the perceptions of the parents interviewed. Several Highland Park parents mentioned that they moved to the borough specifically to be able to complete more tasks on foot, whereas no Franklin Township or Stanhope resident mentioned a walkable environment. Although perceptions varied on the basis of the context of each of the individual locations, the variation may have revealed several ways to improve interventions to increase walking and bicycling. Community context and perceptions should be examined before implementation of interventions to increase active travel to and from school.

IMPLICATIONS

Investigators should continue to use qualitative methods such as interviews to talk directly with community members of all ages about how they perceive their environment, given the variation of parent and student responses. A one-size-fits-all approach to increase active travel is unlikely to be effective, whereas the discussion of community contexts, desires, and needs may lead to possible interventions. Qualitative methods also should be used as descriptive information-gathering techniques to inform future surveys and quantitative initiatives. Lastly, community members may become more empowered to make changes through their engagement in participatory research. Throughout this research, many participants felt passionately about their perspectives, thanked the interviewers for asking them about important community issues, and stated their desire for improvements.

LIMITATIONS

Limitations arose through participant selection, particularly because the sampling had its basis in convenience and snowball sampling, in which parents suggested additional interviewees for the study.

Although this technique helped to achieve larger numbers, interviewees shared traits that made the sample unrepresentative, which is common in qualitative methods. Despite this defect, the research may have revealed an in-depth perspective of the social network interviewed, particularly in Stanhope, where the most snowball sampling occurred. In addition, the participants were not representative of their communities with respect to their gender, educational, or racial backgrounds. Only women were interviewed in Stanhope, and they constituted a majority of those interviewed in Highland Park, where white participants were overrepresented. The selected communities comprised largely middle-class residents, and thus the study participants were largely middle class. These participants' views may not have reflected the concerns of lower-income communities.

Despite these limitations, interviewees met two purposeful inclusion criteria, which were that (*a*) participants had common geographies and (*b*) included children of a similar age. In addition, the study was designed to elicit perceptions and was descriptive in nature. Individuals' perceptions were not used to generalize their specific concerns or rationales to the community at large or to other communities. Instead, the study demonstrated the importance of context when potential investment in interventions to improve active travel is under consideration.

Compensation for participation in the interviews also varied across the three towns. Participants in Highland Park were not compensated. Participants in Franklin Township and Stanhope received $20 cash as funding became available and because recruitment was more difficult.

Qualitative methods allow for detailed descriptions, in addition to follow-up and the time and ability to ask interviewees for justifications and rationales for their perceptions. These methods are more prone, however, to social desirability bias. During the interviews, some parents seemed to quickly inform the interviewer about the benefits of walking or the high level of concern they had for their child's safety, perhaps because they thought that was what the interviewers would want to hear or to demonstrate that they were good parents. Despite that possibility, in each town the social desirability seemed to range from a discussion of health and the environment in Highland Park to one of the safety and protection of students in Stanhope.

FUTURE RESEARCH

Future research should include direct talks with students about their travel experiences. Examination of more parent and student perceptions through interviews in a single community prepared to make planning and policy changes may enhance the usefulness of the findings for school districts and municipalities. The impact that student perceptions have on mode choices remains unclear. To understand these perceptions and the ideas students may have for improvements, both as active travel users (often without their parents present) and as the leaders of the future, may help to better shape active travel interventions.

In this research, students were consistently knowledgeable and engaged about their own safety concerns. This finding was consistent with the findings of the limited earlier qualitative work with middle school children. The authors of another study, which included interviews of students stated, "when given a chance, children are more than capable of forming and expressing their thoughts about the issues pertaining to the planning and design of their everyday surroundings" (*17*). The empowerment of students to have a voice and meaningful involvement in planning, programs, and projects is critical to the successful implementation and ownership of initiatives. As researchers continue to encourage the use of qualitative methods in future research, they will discover more about what children think of their environment and what improvements they seek to make them feel safer. In turn, this research can improve interventions to encourage children to participate in healthy behaviors, such as active travel, in the future.

TAKEAWAY FOR PRACTICE

The findings of this research have implications not only for researchers who examine the perceptions of parents and children but also for schools and municipalities. Communities that seek to encourage the number of students who use active travel may want to consider hosting Walk to School and Walk from School days, given the variations that parents and children see in the two trips. Encouragement of active travel both to and from school and sponsorship of events in both directions would likely involve more students, who might arrive by vehicle but want to walk home. Given the different perceptions that parents and students had of trips to and from school, specific efforts made to encourage children to walk home from school might increase participation in active travel overall. The walk home, which was perceived as the easier and more fun trip of the two, might also act as a catalyst to encourage walking to school and the formation of active travel patterns in the future.

In addition, programs and skills-based education to address and build independence through the teaching of appropriate traffic and crime safety rules can alleviate anxiety and concerns about walking or bicycling in local environments. One way to address fear is to educate and prepare students about what to do in a potentially bad situation and how to stay safe. Children can be empowered through opportunities to practice and role-play traffic safety skills in contexts that are relevant to their lives.

Cell phones may facilitate active travel and enable parents to feel more comfortable about allowing their children to walk or bicycle to or from school. However, as earlier research has demonstrated, parental overinvolvement can lead to higher levels of depression and lower levels of perceived competence in children (*18*). Thus a balance may need to be considered so that parents feel comfortable allowing their children to walk or bicycle without constant supervision (either in person or through technology) to avoid these related negative impacts. Such a balance may mean that children text or call when they arrive home, and parents do not indulge the desire to watch their children wirelessly, speak with their children during the entirety of the trip, or ask their children to call at the beginning, middle, and end of their trips, all of which several participants in these interviews reported doing.

In the current research, students were much more likely to state that their active travel concerns had their basis in local or personal experience, while parents were more likely to state that their concerns arose from what they had read in books or learned in the media. Thus parents were much more likely to be concerned about abductions and sexual offenders than were students, who were more worried about traffic incidents. Students were more likely to report that knowing people along their route, knowing where to go if something happened, and their having "eyes on the street" made them feel confident about being able to make their trip to or from school safely. Parents, schools, and municipalities should help students identify safe areas to go to if a problem does arise. These sites might include certain local businesses, in addition to the more well-identified police and fire stations.

In this research, students and parents all considered it safer to walk in groups than to walk alone. However, many parents and students reported they were unaware of neighbors that also walked to school. Schools can help facilitate walking in groups by providing, on their websites, common routes that students take to and from school and by identifying meet-up locations. The schools could even specify times in the morning to arrive at such locations. Students who would be coming from different directions could meet at these locations and walk the rest of the way together. Students also could use these locations as departure points to walk part of the way home with neighbors in the afternoon. School webpages also could provide some education on the benefits of walking to school, particularly of walking with neighbors. Although so-called Walking School Buses often serve this function for younger students, the middle school students in this study reported that they did not want to walk with their parents. Thus the development of a meet-up location might be a viable adaptation for use by middle school students.

ACKNOWLEDGMENTS

This paper was sponsored by a grant from the New Jersey Department of Transportation, Trenton, with FHWA funds. The authors thank all who helped secure interviews and provided general support, including school staff and administrators from all three schools, Trish Sanchez, Catherine Bull, Sean Meehan, Deva Deka, Wansoo Im, and Gina Thomas. The authors extend special thanks to Elise Bremer-Nei for project oversight and enthusiasm.

REFERENCES

1. McDonald, N. Active Transportation to School: Trends Among U.S. Schoolchildren, 1969–2001. *American Journal of Preventive Medicine,* Vol. 32, No. 6, 2007, pp. 509–516.
2. The National Center for Safe Routes to School. *How Children Get to School: School Travel Patterns from 1969 to 2009,* November 2011. http://saferoutesinfo.org/sites/default/files/resources/NHTS_school_travel_report_2011_0.pdf. Accessed Dec. 2, 2014.
3. McDonald, N., and A.E. Aalborg. Why Parents Drive Children to School: Implications for Safe Routes to School Programs. *Journal of the American Planning Association,* Vol. 75, No. 3, 2009, pp. 331–342.
4. Stewart, O. Findings from Research on Active Transportation to School and Implications for Safe Routes to School Programs. *Journal of Planning Literature,* Vol. 26, No. 2, 2011, pp. 127–150.
5. Goldstein, E. *Sensation and Perception,* 9th ed. Wadsworth, Cengage Learning, Belmont, Calif., 2014.
6. McGinn, A.P., K.R. Evenson, A. Herring, S.L. Huston, and D.A. Rodriguez. Exploring Associations Between Physical Activity and Perceived and Objective Measures of the Built Environment. *Journal of Urban Health,* Vol. 84, No. 2, 2007, pp. 162–184.
7. Eichelberger, M.R., C.S. Gotschall, H.B. Feely, P. Harstad, and L.M. Bowman. Parental Attitudes and Knowledge of Child Safety: A National Survey. *American Journal of Diseases of Children,* Vol. 144, No. 6, 1990, pp. 714–720.
8. McMillan, T. The Relative Influence of Urban Form on a Child's Travel Mode to School. *Transportation Research Part A: Policy and Practice,* Vol. 41, 2007, pp. 69–79.
9. DiGuiseppi, C., I. Roberts, L. Li, and D. Allen. Determinants of Car Travel on Daily Journeys to School: Cross Sectional Survey of Primary School Children. *British Medical Journal,* Vol. 316, No. 7142, 1998, pp. 1426–1428.
10. Kerr, J., D. Rosenberg, J.F. Sallis, B.E. Saelens, L. Frank, and T.L. Conway. Active Commuting to School: Associations with Environment and Parental Concerns. *Medicine and Science in Sports and Exercise,* Vol. 38, No. 4, 2006, pp. 787–793.
11. Centers for Disease Control and Prevention. Barriers to Children Walking to or from School—United States, 2004. *Morbidity and Mortality Weekly Report,* Vol. 54, No. 38, 2005, pp. 949–952.
12. Centers for Disease Control and Prevention. Barriers to Children Walking and Biking to School—United States, 1999. *Morbidity and Mortality Weekly Report,* Vol. 51, No. 32, 2002, pp. 701–704.
13. Timperio, A., K. Ball, J. Salmon, R. Roberts, B. Giles-Corti, D. Simmons, and D. Crawford. Personal, Family, Social, and Environmental Correlates of Active Commuting to School. *American Journal of Preventive Medicine,* Vol. 30, No. 1, 2006, pp. 45–51.
14. Timperio, A., D. Crawford, A. Telford, and J. Salmon. Perceptions About the Local Neighborhood and Walking and Cycling Among Children. *Preventive Medicine,* Vol. 38, No. 1, 2004, pp. 39–47.
15. Carver A., J. Salmon, K. Campbell, S. Garnett, L. Baur, and D. Crawford. Perceptions of the Local Neighborhood and Walking and Cycling Among Adolescents. *American Journal of Health Promotion,* Vol. 20, No. 2, 2005, pp. 139–147.
16. Seraj, S., R. Sidharthan, C.R. Bhat, R.M. Pendyala, and K.G. Goulias. Parental Attitudes Toward Children Walking and Bicycling to School: Multivariate Ordered Response Analysis. In *Transportation Research Record: Journal of the Transportation Research Board, No. 2323,* Transportation Research Board of the National Academies, Washington, D.C., 2012, pp. 46–55.
17. Banerjee, T., J.A. Uhm, and D. Bahl. Walking to School: The Experience of Children in Inner City Los Angeles and Implications for Policy. *Journal of Planning Education and Research,* Vol. 34, No. 2, 2014, pp. 123–140.
18. Schiffrin, H.H., M. Liss, H. Miles-McLean, K.A. Geary, M.J. Erchull, and T. Tashner. Helping or Hovering? The Effects of Helicopter Parenting on College Students' Well-Being. *Journal of Child and Family Studies,* Vol. 23, No. 3, 2014, pp. 548–557.

The Standing Committee on Transportation Safety Management peer-reviewed this paper.