

Parent Perceptions on a Walking School Bus Program Among Low-Income Families: A
Qualitative Study

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Abstract

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Active commuting to school (ACS) is a promising intervention to increase physical activity in school-age children. The aim was to assess parent perceptions of an ACS program in the Seattle area to inform future ACS programs and policies. We interviewed 45 parents whose children had participated in a Walking School Bus (WSB) program in the Seattle area, in which 3-5th grade students walked to/from school with adult chaperones along a set route. We performed a qualitative analysis of the interview transcripts and coded interview segments into 4 broad categories: facilitators, barriers, general positive sentiments and proposals. Most parents spoke of the benefits of the WSB program; in particular, parents frequently applauded exercise/physical health benefits. Of the barriers, the most frequently cited was time, with work schedule and commute changes leading some families to walk less frequently. Parents supported the WSB program as a means to improve child health, learn pedestrian safety, and to interact with positive adult role models. Parents made several suggestions to improve the program, including better recruitment of families, logistical improvements, and a platform for communication with other parents.

Introduction

Physical activity has well-known benefits in children, leading to better physical, emotional, and social health, and improved outcomes later in life. Cardiovascular disease can begin very early in life, with vascular alterations and inflammatory changes beginning in early childhood.¹ However, physical activity interventions, especially in early childhood, may be able to mitigate the risk of cardiovascular disease later in life.²

Active commuting to school, (ACS) via walking or cycling was once much more common than it is today. In 2009, 13% of US children and adolescents ages 5-14 years regularly walked or biked to school, compared to 47% in 1969.³ At the same time, the number of children driven to school by motor vehicle increased sharply, from 12% in 1969 to 45% in 2009.

ACS programs can provide an opportunity for children to regularly obtain physical activity and overcome frequent barriers to physical activity. Most children in the US do not meet recommendations for at least 1 hour per day of moderate to vigorous physical activity.⁴ Additionally, as children age and enter adolescence, levels of physical activity generally decline⁵. ACS programs have been shown to increase MVPA significantly,⁶ have some positive impact on cardiorespiratory fitness,⁷ and that participation in ACS programs is associated with improved body composition.⁷

The Safe Routes to School (SRTS) program, which in the US is funded by the federal Department of Transportation, seeks to increase ACS among elementary and middle school students.⁸ The “Walking School Bus” (WSB) is an “Encouragement” component of the Safe Routes to School Program, in which children walk to and from school in groups accompanied by parents and other adult chaperones.⁹ Students join the WSB at stops along the way, similar to a traditional school bus.

WSBs can bring a multitude of benefits, including greater physical activity, increased traffic safety awareness,¹⁰ and socialization with other children and adults.⁷ A previous qualitative study on ACS using focus groups of immigrant families identified benefits of walking to school, with parents most frequently citing physical health benefits from walking.¹¹ Parents expressed concerns about the safety of walking to school, with concerns encompassing both pedestrian safety as well as fear of abduction and distrust of others in the community.¹¹ While previous qualitative studies have examined ACS behaviors, our qualitative study is the first to examine parent and child attitudes and opinions on participating in a WSB as part of a large multi-year intervention trial.

Methods

A cluster RCT WSB program was conducted over four years at public schools in the metro areas of Houston, and Seattle that primarily racially and ethnically diverse low-income families. The first year of the program took place in Houston, while the following three years took place in Seattle and Federal Way.

The WSB program was conducted over four years at public schools in the metro areas of Houston, and Seattle primarily serving low-income families. The first year of the program took place in Houston, while the following three years took place in Seattle and Federal Way. Qualitative interviews and analyses were limited to the Seattle and Federal Way schools.

Parents of children from schools randomized to receive the WSB program were recruited for one-on-one interviews with study staff. We conducted a total of 45 interviews using a standardized script, developed based on guidelines by Krueger et al (1998). In each group, participants were divided into categories based on how often their children participated in the WSB program. We aimed to recruit parents of participants who participated in the WSB program “very often,” “sometimes,” “started then stopped,” and “never” in equal proportions to ensure a diversity of participant experiences with the WSB program. However, most of the parents who participated had children who walked either sometimes or very often. We used a standardized script, developed based on guidelines by Krueger et al.¹² The scripts contained a total of 10-12 questions, most of which were open-ended. Interviewers asked additional follow-up questions as needed, based on participant responses. Interviews focused on the facilitators and barriers to participations, as well as suggestions for improving the Walking School Bus program. Interviews were primarily conducted in English, and 6 interviews were conducted via an interpreter in Spanish or Mandarin. Interviews were conducted in June and July, after the intervention had ended.

Parent interviews were transcribed verbatim. Using thematic analysis,¹³ we independently coded the interviews and extracted quotes fitting into predetermined themes: barriers, facilitators, suggestions, and time/commute change. We also sought to identify emerging themes not covered by these categories. Quotes fitting the time/commute change category were eventually reclassified as barriers or facilitators, and a separate category for general positive sentiments was added. Quotes were further classified into subcategories. We analyzed results from the initial quote extraction, further refined categories and subthemes, and determined emerging themes, which were subsequently discussed and agreed upon by the original coders and the research team. With a broad range of participants, we intended to reach thematic saturation among subgroups, with about half representing frequent participation and the other half representing infrequent participation.¹³ However, parents of children who participated more frequently were more highly represented in this analysis.

Results

Most parents who participated in interviews were female (82%). Mean age was 40.2 years with a standard deviation of 6.2 years. Parents and students participating in the program were ethnically diverse from a wide range of socioeconomic backgrounds. Of parents interviewed, 27% identified as non-Hispanic white; 22%, Hispanic (any race); 20%, Asian-American; 9%, non-Hispanic black; and 9%, multiracial or other. Some, 13%, did not identify a racial or ethnic group.

About 36% of parents interviewed had completed some college. Household income most commonly was between \$20,000 – \$40,000.

Table 1: Demographic Characteristics of Parents Interviewed

Demographics (n=45)	
Gender	
Male	18%
Female	82%
Race	
Hispanic (any race)	22%
Non-Hispanic White	27%
Non-Hispanic Black	9%
Asian-American	20%
Other or NA	22%
Education	
High School or less	29%
Some college/associates/vocational	36%
Bachelors/postgraduate	24%
NA	11%
Income Level	
≤\$20,000	22%
\$20,001 to \$40,000	31%
\$40,001 to \$60,000	24%
> \$60,000	22%
Age	
27-35	22%
36-45	45%
46-60	16%
NA	9%
Mean parent age: 40.2 years	
Standard Deviation: 6.2	

Barriers

Most parents identified lack of time as a barrier, both for the parent and child. Parent schedule concerns included work as well as other children in the house. Additionally, for some families who lived particularly close to school, participating in the WSB added time to the route. Weather was a frequent barrier, especially in the rain or cold. Some parents noted health was a barrier, with parent mobility issues affecting the parent's ability to walk. A few parents mentioned their child's asthma as a factor. For some children, social factors were a concern; for example, some students were reluctant to join when they did not have close friends in the program. Barriers are summarized in Table 2: Theme: Barriers.

Table 2: Theme: Barriers

Subtheme	Summary of Comments	Representative Quote
Time	Time was cited as a barrier to both parent and child participation. For some families, participation created more delays in the routine. Common reasons for students not participating was because it added time to the commute. For parents, work schedule was the major factor preventing participation.	"Probably the biggest inhibitor would be the other children in our household... And that would be either because of their age or their schedule at different schools"
Weather	Cold, rainy weather was commonly cited as a barrier to participation.	"The only problem for me is during winter time...when it's cold and rainy and we don't want the kids to walk to school, get wet, soaking wet, and then they're over there at school for the whole day. They are already wet, so it's gonna cause them to get sick..."

Health	Major concerns included illness of child (e.g., asthma) or parent (e.g., mobility issues) as barrier to participation	"...I do have problems with one of my knees. So I can walk but I can't walk too far."
Social	Some children did not know others on the WSB or preferred commuting with other children who were not part of the WSB.	"...he was walking with another friend that wasn't part of the program."
Safety	Major safety concerns included pedestrian safety, suspicious characters, and fear of letting children walk without a parent	"...a very busy street...it's just a section of the route that just kind of made me nervous as a parent."
Route & distance	For some families, the WSB route was longer than directly walking to school; parents noted distance was a barrier to parent participation.	"...they're going along the route to pick up other kids or drop off other kids but it just made their walk home so much longer than it would have been if they had walked straight home."
Other	Parents noted some logistical difficulties around meeting spots and communication (i.e., confusion about meeting spots)	"[Participant's name]'s friends were confused about where they were supposed to go to meet the Walking School Bus staff."

Facilitators

Parents discussed several facilitators, with exercise/physical health being the most commonly cited facilitator, with many comments in parent interviews coded as "Exercise/health." Most parents interviewed mentioned exercise and physical health as a facilitator. Others frequently mentioned facilitators were opportunities for students to socialize with peers and learn safety rules. Facilitators are summarized in Table 3: Theme: Facilitators.

Table 3: Theme: Facilitators

Subtheme	Summary of Comments	Summary of Comments
Exercise/Physical Health	Most highly cited category; parents cited several activities of physical activity for both children and adults, including waking up kids' minds before school, stress reduction, increasing kids' confidence and	"...a year ago, she would always complain the whole walk home that her legs hurt and it was horrible and now she doesn't complain at all. Now I could get her to walk to the library, and its great

	energy levels, and leading families to try other activities.	cuz she seems to enjoy walking.”
Social	Parents noted that their children made new friends interacting with other kids on the WSB.	“He's come in and talked about the people on the Walking School Bus and how cool they are...they made it kind of an adventure.”
Safety	Parents noted that the program staff were trustworthy and put kids' safety first; and noted that children learned pedestrian safety by walking.	“...they learn how to...walk to look both ways, make sure that there's no cars before crossing the street. It helped them a lot.”
Convenience	WSB made mornings more convenient, since parents did not have to drive children to school.	“...it just let me get them out the door...and then I could get ready myself and get to the office a bit quicker.”
Responsibility/Independence/Motivation	Parents discussed children gaining independence from walking, ability to follow a schedule and directions, and group accountability	“...in the mornings he walked without me and I think that was really great for him to kind of boost his confidence and his independence as a child”
Adult interaction/role modeling	Parents discussed the WSB chaperones as positive adult role models and children bonding with WSB staff	“...I think it was also really nice for him to have these other younger adults as role models to have conversations with and I know he really enjoyed that.”
Community Awareness	Parents noted that by walking, children learned about the neighborhood and community	“...anytime that you take a walk between, say between school and work, or between home and school, you know it's like, it's just this opportunity to not only get out into your community and be in the sunshine or be, walk with friends, but it's just this kind of opportunity to settle yourself.”
Cost Savings	Parents noted not driving saved gas money	“They're walking, there's no gas. It's amazing!”
Other	Other facilitators included incentives offered for participation, warm weather.	Other facilitators included incentives offered for participation, warm weather.

Proposals

Proposals centered on improving awareness of the program and expanding the route or otherwise altering it to allow for more families to join. Half of parents interviewed made proposals related to increased advertising/awareness. Parents also suggested changes to the WSB route, either to expand the route, or to create multiple routes for more families to join in. Proposals are summarized in Table 4: Theme: Proposals.

Table 4: Theme: Proposals

Subtheme	Summary of Comments
Awareness/advertising	Parents requested more communication with participants (e.g., email updates or other platform for communication); as well as expanding awareness to encourage more families to join.
Expanding program	Parents encouraged expanding program to accommodate more families
Incentives	Parents suggested various incentives, including snacks along the route and incentives midway through the program.
Other	Parents suggested various other proposals, including using positive feedback from parents and kids to recruit more walkers.
Parent involvement	Parents recommended more communication between parents through email or another platform and setting a schedule for parents joining the WSB.
Distance & Route	Parents made specific recommendations for route changes, including a longer route to accommodate other families, splitting route into smaller routes, and more convenient stops.
Safety	Parents suggested "peace of mind" measures, such as background checks for parents walking; as well as reflectors or additional safety measures for kids.

Discussion

Among our racially/ethnically diverse sample of parents, most liked the WSB program and applauded it from many angles, including improving physical activity, convenience, learning pedestrian safety, and saving time and gas money in the morning for parents. One parent succinctly summed up the benefits: “They’re walking, there’s no gas, it’s amazing!” The most prominent themes identified are discussed below, including two emerging themes.

Health Benefits

ACS programs are often discussed in the context of childhood obesity, and have been found to be inversely correlated with BMI z score and positively correlated with mean minutes of moderate-to-vigorous physical activity. A few parents noted that their children lost weight over the program, but many more comments centered around the benefits of walking in the context of overall health. One parent described the benefits of exercise their daughter experienced: “She now speaks about being in more sports and being more active. She likes the fact that this has pumped her just to be like, more active...she thinks she’s an exercise teacher, a trainer and she tries to teach the little kids...”

The program was also beneficial to the health of some parents. One noted: “It showed me that...if he could walk, I should be doing the same thing...Because I needed exercise also.” This supports previous research showing health benefits of active transit. A 2011 review article of 24 studies found modest benefits associated with active transit in both children and adults.¹⁴

Adult Role Models

Parents spoke of positive adult role modeling for their children. Parents discussed benefits of WSB staff setting good examples and bonding with their children. This corroborates previous research on ACS programs indicating an association between exposure to positive adult role models and increases in children’s self-efficacy in ACS programs.¹⁵

Safety

Parents’ major concerns involved safety of their children. Some parents noted that they were concerned about other parents walking with the children and some noted they would prefer a background check for any adults walking with the WSB. Additionally, parents were concerned about traffic safety, major intersections, and “stranger danger.” This is consistent with previous research indicating safety was parents’ main concern during implementation of a WSB in Albuquerque, New Mexico, with concerns revolving around crossing major intersections, ensuring crossing guard support, and children horse playing.¹⁶ In another study, organizers took steps to alleviate parents’ fears about safety by funding additional crossing guard support and enlisting help from the local police department to walk with children.¹⁷ Additional research has shown WSB programs may

lead to some improved safety behaviors. A 2012 study showed that children who participated in a WSB were more likely to cross at an intersection; however, children were less likely to stop fully at the curb when crossing the street.¹⁰

While safety was a common barrier cited in this research, it was also a facilitator in many instances. Some parents spoke of the peace of mind that came with knowing their children were supervised and with well-trained volunteers. “The Walking School Bus was about safety and...making it a safe environment in the parent’s mind...you guys are in a group and you’re being supervised and it’s safe,” noted one parent in an interview. Parents spoke positively of their children learning traffic rules, which benefited them beyond the scope of the WSB program. “They learn how to...walk to look both ways, make sure that there’s no cars before crossing the street. It helped them a lot,” said one parent.

Logistics

Some parents spoke highly of the program for the time savings and convenience it brought to morning routines, since the parent did not have to drive their child to school. However, some parents noted difficulty in participation because of their work schedule or other young children at home.

A theme that arose in parent interviews was logistical challenges, including communication with other parents, identifying meeting spots, having more convenient meeting spots, and allowing more families to participate. This was an issue in previous studies; in the Albuquerque, N.M., WSB, logistical challenges arose around meeting spots and timing.¹⁸

Parents suggested logistical improvements, including a communication platform via email, website, or app to facilitate interaction with other parents whose children participated in the program. This may stem from both logistical issues (communication about meeting times) and safety issues (i.e., a desire to know the other parents, since sometimes parents walked along with the group). During implementation of the Albuquerque WSB program, parent volunteers expressed a need for improving communication as well.¹⁶ Parents most commonly suggested improving awareness and advertising of the WSB program, and parents made route suggestions. Most route suggestions focused on expanding the route or splitting it to accommodate more families.

Emerging Theme: Academic Success

Some parents noted that the physical benefits from the WSB translated into academic success. In several interviews, parents noted that by waking up early in the morning and moving, they were more awake and excited to learn at school. One parent noted physical benefits of ACS translating into academic benefits: “By the time they get to school they’re a lot more awake and alert and ready to learn instead of just dragging in at the last minute being all tired.” A few prior studies have explored the association between ACS programs and academic achievement.¹⁹ For example, a 2017 cross-sectional study of 389 Chilean

adolescents found that students who spent 30-60 minutes actively commuting to school had significantly higher grades in language and mathematics.¹⁹ A Dutch study of 270 seventh- and ninth-graders examined the connection between cognitive performance and ACS, but found only tenuous connections.²⁰

Emerging Theme: Limited English Proficiency

We identified Limited English proficiency as an emerging theme. Two parents suggested sending promotional materials in commonly spoken languages such as Spanish and Mandarin. Another suggested the possibility of having a WSB staff member who is bilingual. Another parent, who does not speak English and was interviewed via interpreter, noted she was initially distrustful because of the language barrier. Previous research showed that some non-English speaking families feared allowing children to walk to school because they were distrustful of neighbors; this highlights the need for interpretation and other resources to reach non-English speaking families.¹¹

Limitations

This analysis has a few limitations. Although we aimed to have a group of parents interviewed that was representative of how frequently their child participated, parents whose children participated at least sometimes were better represented. Future research should focus on hearing more from parents whose children do not participate. Additionally, the intervention took place among children in Seattle-area schools and results may not be generalizable to other areas.

Conclusion

While ACS programs are often lauded as a public health intervention targeting childhood obesity, this study found that benefits extended far beyond physical health, with parents citing everything from their children learning safety rules to gaining independence and self-confidence. Parents have identified several ways to improve WSB programs; in particular, when designing programs, researchers can use parent recommendations from this study to create more inclusive programs and streamline communication. In particular, future WSB programs should be designed with non-English speakers in mind, depending on the demographics of the school. Additionally, providing a communication platform for parents would provide an easier means of communication among parents. Providing additional safety measures and communicating with parents may help to assuage parent fears on stranger danger and pedestrian safety.

Appendix/Supplemental Tables

Summary of Suggestions on Route

Category	Representative Quote
Distance to stop	"...fetching the students at their houses...the walking bus gets the students at their houses."
	"...maybe the route is a consideration, because for some kids, it goes like right by the front of their house, and that makes it easy...it might affect their participation if, you know, they need to take time to walk a part of the way."
	if we're...a block away from home, it makes it a little trickier for the pick-up because the timing is kind of unsure, so then you might spend some time...kind of waiting there...you're always afraid you might...miss them if they're walking by, and then you're delaying the other kids getting home."
Expanded Route (including more families)	"...go expand it further so that maybe you can get more kids to go."
	"...increase the area they assist with...there are some kids that I watch when I was doing the walking bus that they are a little bit far away and that the service doesn't get to that area"
	"...increasing the area so that more could be able to participate in the program."
	"...maybe more stops...or the option for taking another route?"
	"And I think that if, maybe, they took different routes...I don't know if they would get more kids to come that way, or, you know, just expanded it that way."
	"Like expand you guys' route?"
	...inviting more families or making it more miles, making it far away because sometimes they don't send them because they say that it is only a certain amount of miles...
	I like very much the walking bus program, so if they increase the amount of blocks that I would probably be in Again because I'd be able to participate again.
"...if there's a way that you could split the school bus momentarily and then meet up at another point so that those who live in other parts didn't have to walk an unnecessary part of the route in order to get back home."	

	“Like two groups walking different ways...Instead of just one big group.”
Multiple Routes	“Maybe two different, two different groups that, depending on where the children live, to have different routes to get to school. So that the children didn’t have to, like, go around the whole four blocks instead of two....to encourage them that they can walk...”
	...so splitting it up and being flexible on the schedule, that could probably make it easier.
	We’d have to identify routes...the parent-to-student-ratio, or parent-to child-ratio.”
Shorter Route	“...for shorter distance.”
	If I was able to walk that far I’d do it. Maybe more routes there were shorter instead of one that is...a mile, mile and a half they have to walk
	They actually pick the kids up right at our gate, just if it was a shorter route I might be more able to walk with them.
Staggered times	“...I would say they would pick up some of the kids that went home right after school and then they would pick up the kids that went to daycare and then walk them home at like 6 o’clock.”
	for the kids that are at the day care...there’s a lot of families that pick up their kids at a certain time and then walk them home....if there was an option for the school bus to say “Okay, we’re going to take them home at 5:30 or 6,” then I think people would be into that...two afternoon walks.

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