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Parent, Teacher, and Student Perspectives on how Corrective Lenses Improve Child Wellbeing and School Function

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Abstract

Objectives—Up to 20% of school-age children have a vision problem identifiable by screening, over 80% of which can be corrected with glasses. While vision problems are associated with poor school performance, few studies describe whether and how corrective lenses affect academic achievement and health. Further, there are virtually no studies exploring how children with correctable visual deficits, their parents, and teachers perceive the connection between vision care and school function.

Methods—We conducted a qualitative evaluation of Vision to Learn (VTL), a school-based program providing free corrective lenses to low-income students in Los Angeles. Nine focus groups with students, parents, and teachers from three schools served by VTL explored the relationships between poor vision, receipt of corrective lenses, and school performance and health.

Results—Twenty parents, 25 teachers, and 21 students from three elementary schools participated. Participants described how uncorrected visual deficits reduced students' focus, perseverance, and class participation, affecting academic functioning and psychosocial stress; how receiving corrective lenses improved classroom attention, task persistence, and willingness to

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Human Subjects Approval Statement

This study was approved by institutional review boards at both the University of California Los Angeles and the Los Angeles Unified School District.

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practice academic skills; and how serving students in school rather than in clinics increased both access to and use of corrective lenses.

Conclusions for Practice—Corrective lenses may positively impact families, teachers, and students coping with visual deficits by improving school function and psychosocial wellbeing. Practices that increase ownership and use of glasses, such as serving students in school, may significantly improve both child health and academic performance.

Keywords

Visual deficits; corrective lenses; child health; school performance; screening

OBJECTIVES

Studies suggest up to 20% of school-age children have a vision problem identifiable by screening (CDC, 2010; Krumholtz, 2000; Yawn, Lydick, Epstein, & Jacobsen, 1996) and over 80% of those defects can be corrected with glasses.(Vitale, Cotch, & Sperduto, 2006) Although current practice recommendations include universal vision screening,(Hagan, Shaw, & Duncan, 2008) many children who need corrective lenses still lack access to them. (Kodjebacheva, Brown, Estrada, Yu, & Coleman, 2011) Low-income and minority children are disproportionately affected by uncorrected poor vision due to both an increased incidence in refractive errors as well as decreased access to corrective lenses.(Basch, 2011; Ethan & Basch, 2008; Kemper, Cohn, & Dombkowski, 2004; Kimel, 2006; Kleinstein, Jones, Hullett, & et al., 2003; Kodjebacheva, et al., 2011; Marsh-Tootle, Wall, Tootle, Person, & Kristofco, 2008)

A number of studies report associations between vision problems, poor school performance, and lower quality of life.(Fulk & Goss, 2001; Goldstand, Koslowe, & Parush, 2005; Johnson, Nottingham, Strutton, & Zaba, 1996; Krumholtz, 2000; Kulp & Schmidt, 1996; Maples, 2003; Mathers, Keyes, & Wright, 2010; Shin, Park, & Park, 2009; Vaughn, Maples, & Hoenes, 2006) Given that academic achievement is one of the most powerful predictors of lifelong health,(Egerter, 2009; Freudenberg & Ruglis, 2007; Topitzes, Godes, Mersky, Ceglarek, & Reynolds, 2009) addressing factors that contribute to poor school function may be critical to resolving health disparities. However, while one might predict that access to corrective lenses improves school function and overall child health, there is surprisingly little scientific evidence supporting this assumption.(Powell, Wedner, & Hatt, 2004) This may be due, in part, to unanswered questions regarding which aspects, if any, of school function are most likely improved by correcting a child's vision. Visual deficits have been variously posited as a cause of poor grades, poor classroom behavior, a disruptive school environment, lower test scores and even school disengagement and dropout.(Basch, 2011; Fulk & Goss, 2001; Johnson, et al., 1996; Maples, 2003; Marshall, Meetz, & Harmon, 2010; Roch-Levecq, Brody, Thomas, & Brown, 2008) Hence we lack a clear understanding of how refractive errors impact school-age children and how use of corrective lenses might improve both academic performance and psychosocial wellbeing.(Powell, et al., 2004)

Given the absence of studies documenting how children respond to correcting a visual impairment, qualitative studies can help identify key pathways for future research and

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provide a robust and meaningful picture of how vision care relates to the health and academic performance of school-aged children. Surprisingly, parent and teacher perspectives on the link between poor vision, school function, and wellbeing have only recently been documented(Kodjebacheva, Maliski, & Coleman, 2014) and no qualitative studies explore how children respond to correcting those visual deficits. Thus, we performed a qualitative evaluation of a school-based program providing free corrective lenses to students attending elementary schools in low-income minority communities of Los Angeles.

METHODS

Program Overview

Vision to Learn (VTL) is a non-profit organization, established in 2012, that partners with schools to improve access to corrective lenses for low-income students. School nurses perform school-wide vision screenings and students identified with a deficit are referred to the program. A mobile eye clinic visits the school site and, after obtaining parental consent, pediatric optometrists perform a comprehensive eye exam. Eligible students have the opportunity to choose from an array of frame styles and colors, with the help of VTL staff. VTL opticians update this selection every 6 months to ensure that frames are fashionable. When selected, the frames are custom fitted for each student and delivered to the student's school approximately two weeks after their vision exam. All services are free to families, including access to a replacement pair of glasses in the event of damage or loss. The program covers the cost of the frames, prescription lenses, eye exam and program administration. On average, this amounts to approximately $100 per child. Until January 1, 2015, VTL was funded entirely by philanthropy. Since January 1, 2015, 50% of funding in Los Angles has been from California's Medicaid program and Los Angeles County's allocation of funds from California's Proposition 10 tobacco tax through First 5 LA. There is no cost to the schools, other than supporting the school nurse to conduct the initial screening exam.

We conducted focus groups with students, families and teachers from three schools served by VTL to better understand the relationships between vision care, students' academic performance, classroom behavior and psychosocial wellbeing.

Participants

Schools—VTL staff identified schools where a large number of students had been served to maximize participant recruitment and where participation was acceptable to the school principal. Four schools who met these criteria were invited to participate; three agreed to participate. Schools were sampled until thematic saturation was achieved. Characteristics of the participating schools are described in Table 1. All three schools served a predominantly Hispanic/Latino population.

Focus Group Participants—At each site, school staff identified eligible participants who 1) were a parent of a child, a child, or a teacher of a child who had been served by VTL, and 2) spoke either English or Spanish. Participants were notified of the purpose of the study and the focus groups, the date, time and location of the focus groups, incentives for

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participating and instructions for enrolling. The study was approved by the Los Angeles Unified School District and the University of California Los Angeles Institutional Review Boards.

Procedure

At the start of each focus group, adult participants completed a brief questionnaire to gather demographic information. Parent focus groups lasted approximately 90 minutes, teacher focus groups ranged from 60–90 minutes, and student groups lasted approximately 30 minutes. Parent focus groups were longer to allow for a more in depth discussion of how VTL could improve communication with families while the discussions with students were shorter to accommodate their more limited attention spans. All groups were held on the school campus but only research staff was present for the discussions. Parent focus groups were conducted in Spanish by one bilingual (English–Spanish) facilitator experienced in working with low- income parents. The other focus groups were conducted in English and were facilitated by two pediatricians and one research assistant with experience in school-based research. In addition to the focus group moderators, the project manager and trained volunteers attended all focus groups and assumed the role of ‘note taker’.

The focus group protocol was guided by the literature, research objectives, investigators’ experience, and key informant interviews with VTL staff, student clients, family members and school personnel. The semi-structured guide explored the following topics: the experience of poor vision and receiving corrective lenses as perceived by parents, teachers, and students, barriers to wearing corrective lenses, and strategies for overcoming those barriers (Table 2). Main questions were worded similarly for parent and teacher groups. The wording and number of topics was simplified for the student groups. The questions were designed to solicit both positive and negative experiences of the program, and concluded with a discussion regarding areas for improvement. The facilitator probed for more information in order to clarify points and to get participants to expand on their responses. Both the facilitator and note taker also recorded non-verbal communication, such as when there was agreement or disagreement from non-speaking members of the group.

Data analysis

Focus groups were audio recorded and transcribed, with the Spanish interviews translated into English. All transcripts were reviewed for accuracy. Three reviewers independently analyzed the data (recordings, transcripts, and notes), identified recurrent themes, and selected comments supporting each theme. Two of the coders were faculty members at the UCLA School of Medicine with extensive research background in school health and Pediatrics. The third coder is the program coordinator with experience in pediatric health research. Through an iterative process, codes were compared across reviewers to develop a common codebook and resolve discrepancies. Thematic analysis continued as an iterative process through discussions and refining of the major themes using a grounded theory approach.(Glaser & Strauss, 2009)

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RESULTS

Nine focus groups were held with 20 parents, 25 teachers, and 21 students from two public schools and one Catholic elementary school. Each focus group ranged in size between 6–9 participants. For each child, at least one parent also participated in a focus group, and consistent with their school populations, all child and parent participants were Latino (Table 3). Teachers from every grade were represented in the sample with an average of more than 16 years of teaching experience. Most teachers had multiple students participate in the VTL program.

Two major themes emerged when participants described the experience of poor vision (Table 4). Students, teachers and families reported that poor vision affected both academic performance and psychosocial wellbeing. When participants described receiving glasses through the program, three main themes emerged. The first related to correcting visual deficits. The other two themes relate to participating in a free, school-based program and describe a) the benefits of obtaining free, convenient services; and b) the importance of decreasing barriers to students using their corrective lenses in school. Minor themes, or sub-themes, were also noted.

Interview Domain: Describing the experience of uncorrected poor vision

Poor school performance—Teachers, parents and students perceived that visual deficits contributed to poor school performance. The mechanisms cited for how poor vision disrupted a student's ability to function in school varied. Some reported difficulty focusing in class and falling behind because of not being able to see the board. For example, one teacher said, *"You see they're like looking and are trying to copy from their neighbor because they can't see so that puts them behind and they feel they are behind all the time because of the inability to see clearly."*

Participants felt the additional effort required to cope with poor vision ultimately led to students' disengagement from classwork. This was manifested by poor class participation, giving up on school-related tasks, and disrupting other students. A young student described the connection between poor vision, difficulty concentrating and poor task performance: *"At school sometimes I get distracted when my teacher starts talking…. But when I put my glasses, now I understand my teacher and follow directions and do things right. Before I did things wrong and I needed the glasses to help me."*

Stress—All groups described significant stress related to uncorrected poor vision, though the etiology of that stress varied by participant group. Parents noted financial and emotional stress from being unable to provide glasses for their children. Additionally, parents described how their children experienced psychological stress trying to compensate for visual difficulties. One parent related how her son's school and vision-related stress made it difficult for him to sleep: *"Yes like anxiety to go to school, knowing that he would be there just to strain himself in trying to learn. I would always tell him he needed to bring home good grades. But at the same time, I wasn't being supportive enough. Why didn't he sleep? Why was he scared? I didn't know that it was because of [his vision]."*

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Teachers cited stress related to managing a classroom with students who might be disruptive due to their poor vision, and modifying the learning environment to meet their needs. Additionally, some teachers discussed difficulty identifying which students have vision problems and then allocating resources for extra support in the classroom. For example, one teacher reported, *"You have four students that have a vision problem. Then you have three that have a hearing problem. And you know there's only so much you can put in front of the room."*

Students noted the physical hardships of struggling with their visual deficits as well as emotional stress related to their poor school function. Some students reported having headaches and eye strain while others described getting into trouble for poor behavior or academic performance.

Interview Domain: Describing the experience of obtaining corrective lenses

Theme 1--Correcting visual deficits improved school function—All groups discussed how students had improved school function after receiving glasses. While there were some reports of students dramatically improving their grades or academic performance, all groups described how the day-to-day aspects of school function were supported by correcting visual deficits. Participants described improved reading ability due to increased willingness to practice academic skills and more accuracy in math-related work. Groups explained that students who received glasses showed improved concentration and focus in the classroom, were less disruptive, and were more engaged and able to participate in class. When describing the overall impact of corrective lenses on student behavior in school, one teacher reported, *"…they persevered at the task rather than giving up. I think the frustration level was so high when they couldn't really see very clearly; and they strained… and they didn't have the stamina to continue at that level of concentration. But when they got their glasses that kind of disappeared and they were really able to stick to their work a little better."* Additionally, participants felt that decreased disruptive behavior from students with corrected visual deficits enhanced the learning environment for the whole classroom.

Subtheme 1a--Improved ability to complete homework—A minor theme noted in many, though not all, of the discussions was more ease with homework after receiving glasses, which was also thought to contribute to improved school performance. When asked how using glasses impacted her child outside of school, one parent described, *"My son before he had the glasses, he would complain each time when they would start reading or write[ing]. He would say that his head hurt. He didn't want to…. Now, I see the difference in his homework. It's much better. He likes it..."*

Interview Domain: Describing the benefit of free school-based screening and services

Theme 1-- Obtaining Free Convenient Services—All adult groups cited how providing free services in school removed financial and logistical barriers to students receiving corrective lenses. In addition to paying for the eye exams and glasses, participants described challenges identifying that a child has a visual deficit, navigating the healthcare system to find an optometrist, parents taking time off of work, finding transportation to access health services, and concerns about children breaking their glasses, losing their

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glasses, or not wanting to wear them. These barriers were perceived for children with and without health insurance and were felt to contribute to a general lack of access to corrective lenses in low-income communities.

Theme 2--Increased student willingness to use corrective lenses—Both adult and child participants described social benefits of serving multiple students within a single school and allowing students to pick their own frames. Groups reported that, students felt more comfortable wearing glasses when surrounded by peers who also used corrective lenses. This aspect of the program was perceived to reduce the stigma associated with using corrective lenses. One parent described her daughter's reaction to the program, *"But when she didn't know that there were going to be other kids from her school and her class so she was like, 'I don't want to wear glasses mom, I'm going to be the only one'... But later…she saw that there were other students, not only in her class, but in the whole school. She felt more comfortable with herself."*

Across all groups, participants described how allowing students to pick their own frames and having attractive frame options made children feel like active partners in the decision to wear glasses.

Other Findings

We explored whether correcting students' vision improved non-academic aspects of their lives, such as sports and other extra-curricular participation. However, most children and parents reported that students did not use their glasses outside of school for fear of damaging them. Adult and child participants expressed specific concerns about wearing glasses for active play, even though they recognized that improved vision would be helpful in these settings.

CONCLUSIONS FOR PRACTICE

Although poor vision is associated with poor school function, there are few published studies describing the experience of receiving corrective lenses and their perceived relationship with academic achievement and psychosocial wellbeing. This study sheds light on the variety of mechanism through which corrective lenses might lead to better school performance: improving focus and participation in class, effort and task persistence, homework completion, and practicing of academic skills. While these outcomes might lead to improved grades, attendance, and standardized test scores, future studies may need to focus on these more proximal, student-centered measures to better capture the impact of corrective lenses on academic performance.

Additionally, participants described significant stress related to uncorrected poor vision and suggested that receiving glasses improved their psychosocial wellbeing. This finding underscores the relationship between physical and mental health, and the importance of addressing healthcare needs that might affect school function. Given the potential for academic achievement to improve a child's health trajectory,(Egerter, 2009; Freudenberg & Ruglis, 2007; Topitzes, et al., 2009; Winkleby, 1992) ensuring appropriate access to and use

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of corrective lenses might be a simple, yet potent way for pediatricians to address health disparities.

Although visual deficit identification and referral for treatment has traditionally been the sole responsibility of clinicians, this study highlights the strengths of partnering with schools to ensure that all children have access to preventative vision care. While the barriers to accessing corrective lenses are similar to those for other health services, studies suggest that there are also significant gaps between ownership and use of corrective lenses(Messer, Mitchell, Twelker, Crescioni, & Group, 2012; Preslan & Novak, 1998) School-based vision programs address many of the barriers to obtaining and wearing glasses that disproportionately affect low-income and minority students, and hence may be a vital tool for improving population child health.(Ethan, Basch, Platt, Bogen, & Zybert, 2010; Lyons, Johnson, & Majzoub, 2011; Sharma, Congdon, Patel, & Gilbert, 2012)

In addition to performing routine vision screening in the pediatric office, clinicians might work more closely with families to address the logistic and social barriers to obtaining and wearing glasses. Educating parents regarding the importance of vision for learning, asking parents for permission to inform a student's teacher about his/her need to use glasses and directly addressing the stigma related to wearing glasses might support consistent use of corrective lenses. Further, as child health advocates, pediatricians might work with community and school-based programs to increase points of access for vision screening and follow-up care.

This study is limited by the qualitative design. While using focus groups facilitates in-depth discussion of individual perspectives within the context of a larger group, this methodology may over- represent specific participant contributions. Additionally, aggregate group data may not reflect equally the specific concerns of every group participant. Furthermore, using a convenience sample of participants likely caused selection bias that limits the ability to generalize our results to all parents, teachers and children served by VTL. However, the themes that emerged regarding the experience of uncorrected poor vision were consistent with findings from parents and teachers who have not interacted with VTL.(Kodjebacheva, et al., 2014) Additionally, since the goal of this study was to identify potential mechanisms through which correcting poor vision might improve school function, this strategy increased the likelihood that we would capture the breadth of positive experiences. We did not have access to objective measures of visual ability before and after glasses and so cannot comment on whether these findings might vary based on the severity of the visual deficit or the accuracy of the prescription for corrective lenses. Because all of our participant schools served a predominantly Latino population in Los Angeles, we also cannot comment on whether these findings would apply to other regional, cultural and ethnic groups. However, studies suggest that the barriers to wearing glasses are consistent across many regions, ethnicities and cultures.(Kodjebacheva, et al., 2014; Preslan & Novak, 1998) Finally, we are unable to comment on how these results compare to the experiences of students without visual deficits or whose received corrective lenses without being served by VTL.

Despite these limitations, results from this evaluation can inform school and health policy around visual screening and referral services for students. By describing the specific aspects

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of school function potentially improved by correcting visual deficits, these results also highlight important outcomes to measure in studies seeking to quantify the impact of corrective lenses on school performance. Such studies may provide additional evidence to support policies that increase access to vision care for low-income children who already face significant educational inequities. Further, vision care is a key component of pediatric preventative medicine. Understanding the relationship between visual health and wellbeing underscores how important it is that all children have access to this basic health service and that barriers to accessing and using corrective lenses are actively addressed both in clinical and community settings. Finally, by forging stronger partnerships across education and health sectors, schools might serve not just as a vehicle for health service delivery, but also as a platform for changing social and cultural norms. Realizing this potential for schools to improve population health will require both financial support and meaningful cross-sector collaborations.

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Abbreviations

VTL Vision to Learn

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Significance

Although studies document associations between uncorrected poor vision and poor academic achievement, mechanisms for how correcting vision may improve school performance have not yet been described. Hence, it remains unknown whether corrective lenses can improve school function and how parents, teachers, and children perceive this potential process. We present parent, teacher, and student perspectives on how receiving glasses improves classroom focus and participation, task persistence, practicing of academic skills, and psychosocial wellbeing. Additionally, serving students in school was felt to decrease both the logistical and social barriers to accessing and using corrective lenses.

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Table 1

School Demographics *

2011–2012	School A	School B	School C
Type	Public	Public	Catholic
Number enrolled	579	698	217
Grade Levels	K-6	K-5	K-8
% White/Caucasian	0.9	1.3	0
% Black/African American	0.3	4.2	0.5
% Latino/Hispanic	98.4	94.3	98.6
% Asian/Pacific Islander	0.3	0	0.5
% Other	0	0.3	0.5
% Economically Disadvantaged **	91%	84%	75%

* Public school data was obtained from the Los Angeles Unified School District. Catholic school data was obtained directly from school administration.

** For public schools this represents the percent of students who qualify for the free and reduced-price meal program. For the Catholic school this represents the percent of students from families bellow the federal poverty level.

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Table 2

Focus Group Discussion Questions

Discussion Topic: Experience of uncorrected poor vision
Teachers: What kinds of things do you notice in a student who can't see well? How do you think this impacts the student/other students/ teachers?
Parents: How did you know that your child needed glasses?
Students: What was it like before you got your glasses? Before you got your glasses, how were things at school/home for you?
Discussion Topic: Experience of obtaining corrective lenses
Teachers: How does receiving glasses impact students who have difficult seeing? How do you think kids feel about getting and wearing their glasses?
Parents: How does receiving glasses affect students at school/home/other parts of a child's life? How does your child feel about his/her glasses?
Students: Now that you have glasses, how are things different for you? How do you feel about your glasses? Are there any bad things about having glasses?
Discussion Topic: Program strengths and weaknesses
Teachers: What are the strengths of Vision to Learn, meaning, what do you think they do well? What are areas where *Vision to Learn* could improve? What advice do you have for improving Vision to Learn?
Parents: What are the best things about the Vision to Learn program, meaning, what do you think they do well? How could *Vision to Learn* improve or do better? What advice do you have for improving Vision to Learn?
Students: What are the best things about the Vision to Learn program? How could *Vision to Learn* improve or do better?
Discussion Topic: Summarizing
Teachers/Parents: If you had to pick one word to describe the impact of Vision to Learn, what would it be?
Students: What is the most important way having glasses has helped you? What else can you tell me about what it's like to get glasses?

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Table 3

Participant Demographics

Teachers N=25			Parents N=20			Students (N=21)[a]		
	Number/ Mean	**Percent/ Range**		**Number**	**Percent**		**Number**	**Percent/ Range**
Female	20	80%	Female	20	100%	Female	7	33%
Male	5	20%	Male	0	0%	Male	14	66%
Race/Ethnicity			Age			Age (mean)	8.5	5–14
White	3	12%	18–24	0	0%	When child received glasses		
Black	2	8%	25–34	9	45%	1–3 months a go	13	65%
Latino	15	60%	35–44	11	55%	3–6 months ago	6	30%
Asian	3	12%	45 or older	0	0%	6–12 months ago	1	5%
Other	1	4%	Race/Ethnicity			Child still has glasses	17	85%
Years teaching	16.5	2–35	White	0	0%	How often child wears glasses at school		
Grade teaches			Black	0	0%	Every day	19	90%
Kindergarten	4	16%	Latino	20	100%	Most days of the week	1	5%
1st Grade	3	12%	Asian	0	0%	Once or twice a week	0	
2nd	3	12%	Other	0	0%	Only once in a while	0	
3rd	6	24%	Level of Education			Hardly ever	1	5%
4th	2	8%	Less than high school	3	15%	How often child wears glasses outside of school		
5th	1	4%	Some high school	5	25%	Every day	12	60%
Middle School	5	20%	High School Graduate	4	20%	Most days of the week	3	15%
Number of students teacher taught who were served by the program			Some college	3	15%	Once or twice a week	1	5%
1	2	8%	College Degree	3	15%	Only once in a while	3	15%
2–5	15	60%	More than college	2	10%	Hardly ever	1	5%
6–10	4	16%						
11–15	2	8%						
≥16	2	8%						

[a]Adult data obtained from adult participant questionnaires. Student data obtained from parent questionnaire.

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Table 4

Thematic Quotations from Focus Groups with Parents, Teachers, and Students

Themes	Findings	Example Quotes
Poor vision affects school performance	1. Poor focus 2. Giving up 3. Poor participation	**Teacher:** "Well, I notice that they constantly have to get up and get closer to the board if they can't see well and … they lose focus because they can't see." **Student:** "when I didn't have my glasses, I couldn't pay attention to the board, or didn't know what to do." **Teacher:** "What I've noticed is the same, like the squinting… and it becomes such an inconvenience for them that they just sit there and just give up on it." **Parent:** "My son before he had the glasses, he would complain each time when they would start reading or write(ing). He would say that his head hurt. He didn't want to." **Student:** "When I needed to write for my (homework)…my head hurt. I couldn't see." **Teacher:** "They get lost-- don't know what's going on. But it's not that they don't want to participate, they just can't see that well."
Poor vision affects psychosocial wellbeing	1. Stress related to coping with poor vision 2. Stress related to financial management and poor school performance 3. Stress related to classroom management	**Student:** "I had trouble seeing before I got my glasses. I was shy because my friends would laugh at me." **Student:** "I saw blurry. My teacher said that I had to move from my friends because I couldn't see." **Student:** "Because my eye…it was too busy. It was fighting. Close this eye. No, open it. Close it." **Student:** "But when I didn't have glasses, I had bad grades and my mom and dad weren't happy." **Parent:** "I think in our communities…it's more difficult because sometimes we think that it's not something that we can provide. Our opportunities are more limited and sometimes we do not have access to them (glasses)." **Parent:** "often times there are insurances that you have to pay extra to get one (frames) with style, so I would usually just pick them because the other ones were more expensive. I had to tell him, no these or these." **Teacher:** But I do see some kids who just don't say anything and will just stay quiet because they'd rather not call attention to themselves. There's other kids who say 'I can't see"!' and so it does become a management issue when you have to ask them to get up or move somewhere closer". **Teacher:** "And then you have more management issues because you are having to manage the people that are then whispering… to help them (the child who can't see)."
Correcting vision improves school function	1. Improved behavior/focus 2. Willingness to practice academic skills 3. Improved performance	**Parent:** "And the teacher told me that now I don't have to try to keep Monica's focus, 'Do you understand? Do you understand?' Now she sees and tries and I don't have to be after her like before that she had to look hard to try to see what it was." **Student:** "I would not get distracted as much and I would pay attention and get good grades too." **Teacher:** "these are the kids that…when they had to work independently they were distracting other kids….But when they got the glasses that kind of just changed. It went away." **Teacher:** "The fluency rate has increase for those students. They can see the words so they are more apt to practice reading because it's not such a task for them." **Student:** "I don't have any more headaches and my eyes they were hurting. Sometimes at night I would also get them. And when I got the glasses, it didn't make my eye hurt." **Teacher:** "I think enthusiasm for learning just, I know one girl in particular that was struggling and she was so much more enthusiastic after she got the glasses and reading more." **Teacher:** "I noticed with one or two of the students that got their glasses, the accuracy rate (on their math work) went up. Probably because they could see the numbers better in the books." **Parent:** "She got an award…because she is one of the highest ranking children in her class in reading. So I said wow. And she said, 'Yeah mom, I put on the glasses and I am reading!'" **Student:** "I could do my homework faster. I could do it."
Free school-based services addresses important barriers to obtaining glasses	1. Barriers related to cost 2. Barriers related to accessing vision care	**Parent:** "because Medical only gives you one pair of glasses and my kid broke them…And I didn't have money to replace them. So I was really grateful for the glasses." **Parent:** "And the truth is I'm thankful for the program because without it, I would be waiting and trying to save the money-- because I'm a single mother also and there isn't any money." **Parent:** "I would have to go through my insurance again, to make another appointment. It takes time to get an appointment, it takes time, sometimes months. Then I would have to come back to get the glasses, it would take even more time." **Parent:** "And also the fact that they came to us. We did not have to go somewhere to look for it, parking or bus or whatever. They came here and they took all the kids in the classes." **Teacher:** "For someone to just pull up a bus and make it happen. That is powerful."
Serving students in school addresses social barriers to wearing glasses	1. Decreased stigma associated with wearing glasses 2. Increased student engagement by picking frames	**Parent:** "They won't be teased because there's more than one child with eyeglasses and they're excited. They say oh my friend got also a pair of glasses mom." **Parent:** "When she (her daughter) came to this school, she did not want to wear them. But when I gave her the application, I told her that everyone in her class was going to get the glasses. And yes, now she uses them. Every day she uses them…. It's like she said, oh my friend also has the same pair like me. So that encourages them." **Teacher:** "They had big smiles on their faces. I was surprised, I thought they were going to be nervous about wearing them or embarrassed. But it was completely different reaction, they were excited." **Teacher:** "They are always wearing their glasses, they are proud to wear them. It's like a fashion statement and they chose those big black rims glasses. It's like they love them."

Themes	Findings	Example Quotes
		Student: "…And they told me 'oh you need these glasses' and then, I want them right now because they look so cool!" **Student:** "I like my glasses, and I like the way they look."

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