

PREVALENCES OF OCULAR CONDITIONS IN PRIMARY SCHOOL CHILDREN: AN
EVALUATION OF ACCESS AND OUTCOMES USING THE STUDENTS IN NEED OF EYECARE
PROGRAM

By

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and
Allison Elizabeth Ezell

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Michigan College of Optometry
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Faculty Advisor: Dr. Sarah Hinkley

ACCEPTED:



Faculty Course Supervisor

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Doctor of Optometry Senior Paper
Library Approval and Release

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We, Lindsey Marie Ellicott and Allison Elizabeth Ezell, hereby release this Paper as described above to Ferris State University with the understanding that it will be accessible to the general public. This release is required under the provisions of the Federal Privacy Act.



Doctoral Candidate

03-12-2015

Date

ABSTRACT

Background: Previous studies have demonstrated that school aged children, for various reasons, are not always receiving the eye care they need. This research will determine if the need is indeed there using a community service pilot program and seeks to increase awareness of the need for children to have access to complete eye examinations. **Methods:** The study will use anonymous information from University Eye Center electronic medical records collected during the Students in Need of Eyecare (SINE) Program. Information will include age, prevalence of refractive error, and the need for spectacle correction secondary to hyperopia, myopia, astigmatism or medical causes. Anonymous surveys were collected from parents, teachers, and school staff involved with the SINE program. The surveys inquired about any achievement and behavior improvements resulting from the program, information about how much the prescribed glasses are worn at school, if the glasses have been lost or broken and the perceived program value, among other things. **Results:** Many children can benefit from community-based programs like the SINE program. There was a significant need for full eye exams and treatment in the communities served despite active vision screening programs. 64.2% of the children examined needed glasses. In addition 22% of the students had binocular vision problems and 4.6% had accommodative problems. Tracking problems were found in 3.7% of the students and medical diagnoses were found in 4.6%. Surveys revealed that most teachers and parents thought that the treatment with glasses improved school performance, sports performance, and self-confidence. In fact, 78.6% of the teachers believed that the glasses were very beneficial to the children.

Conclusions: The popularity of the program in its second year of existence was remarkable. An abundance of medical diagnoses and need for glasses in the majority of children reveal that eye care needs are not currently being met in these rural communities. Although survey statistics demonstrated that most parents could access eye care for their children without the program, there were many comments that stated otherwise and evidence that services have not been accessed by many. In addition, there was a large discrepancy between parent responses from each school. Teacher surveys revealed that this program helped many low-income students that did not have access to eye care in their rural community. Both teachers and parents agreed that this program helped them see the value in full comprehensive eye exam versus school screenings.

ACKNOWLEDGEMENTS

We would like to acknowledge our facility advisor Dr. Sarah Hinkley for all the hard work she put in organizing the SINE program and endless questions she helped us answer during this whole process. We would like to thank the Lions Club for their generous donations to the SINE program, allowing us to provide eyeglasses to children in need. We would also like to acknowledge our families and friends for helping us get through any difficult and frustrating times we had during this process.

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CHAPTER 1

INTRODUCTION

Studies have shown that thousands of school-aged children around the world are negatively impacted by lack of access to eye care. ^{1,2,3,5} Unfortunately, vision loss secondary to refractive error is one of the most disabling childhood conditions.¹ Ethan et al explained that around 20% of school children in the US alone suffer from a vision problem, and this number can more than double in poverty stricken areas.² While there are vision screening programs implemented by many schools, the screenings often cannot diagnose some of the eye problems like binocularity and accommodative dysfunction that will affect a child's performance in school. In addition, there are many factors that contribute to the success of vision screenings. These include the quality of the screening, the professional administering the screening, communication with teachers and parents, and follow up to remedy a failed screening. In order to reduce the likelihood that students in need will fall through the cracks and lack access to eye care, a program involving comprehensive eye care for students in need was piloted. This program included a complete eye exam testing for refractive error, eye teaming, color vision, tracking/eye movements, as well as all aspects of ocular health. If needed, students ordered and received a pair of prescription glasses free of charge. The program was evaluated via

statistical analysis of examination data, as well as surveys from both parents and teachers. The program results are broken down, analyzed, and explained in this study.

CHAPTER 2

METHODS

Following approval by the Ferris State University Institutional Research Board, data was gathered anonymously from patient records created during the Students in Need of Eyecare program (SINE program). Students from two rural area schools were referred into the SINE program by teachers and parents using referral forms sent to the school at the beginning of the school year. One teacher and the social worker from one school approximately one hour from the Ferris State Michigan College of Optometry served as program coordinators for the first school. Children in grades third through eighth were allowed to participate. The second school was located approximately five minutes from the college. The principal and counselor of this elementary school served as the program coordinators. Any child from the school containing kindergarten through fourth grade was eligible for program referral. After a student was referred into the program, the coordinators worked to collect all necessary paperwork and consent forms. An examination day at the college was pre-determined for each school in September and October, respectively. Third year optometry students were required to participate as part of their Developmental and Behavioral Optometry course laboratory. A few fourth year

optometry students also participated as their externship schedules allowed.

Pediatric and Primary Care faculty at the University Eye Center volunteered their time to participate as faculty mentors for the program as their schedules allowed.

The University Eye Center was closed to regular patients except for emergencies on both SINE dates. The children were bussed to the University Eye Center on the day of the SINE program. Each student received a comprehensive eye exam by an optometry student and faculty mentor. Treatment was prescribed as needed, including prescription glasses. Children were educated in simple terms about the results of their examinations. Those requiring glasses were taken to the optical dispensary and allowed to choose glasses with the help of the opticianry staff.

Plans were billed accordingly for children eligible for vision examinations, medical eye examinations or glasses through vision or medical insurance. Those without insurance or not currently eligible for services were funded through local and statewide grants and the families were not responsible for any charges. At examination conclusion, comprehensive reports were written to parents and schools detailing the findings and recommendations and emphasizing the importance of annual, dilated eye examinations with local providers.

From the electronic medical records of the comprehensive eye exams, we determined how many children had refractive error, binocular vision problems, and/or medical diagnoses. We also determined how many children needed eye glasses, vision therapy, or other treatments. After determining prevalence of each individual diagnosis and treatment options required, surveys were utilized to determine which children followed through with treatment. The surveys were also

used to analyze how the treatment affected the child's life. Questions asked included whether the treatment improved school testing performance, self-confidence in school, self-confidence outside of school, and sports performance. To determine if treatment had an effect on the students' overall quality of life, teachers and parents were asked to rate student behavior and school performance before and after treatment. To view the survey forms and question items see Appendix B and C. Teachers and parents also left comments, which were analyzed along with the ratings of child's performance.

CHAPTER 3

RESULTS

A total of 109 students from two rural schools received eye care at University Eye Center during the SINE program. 40.9% of the children from the first school had never had an eye exam. This number was slightly higher at 41.9% at the second school. Figure 3 is a summary of diagnosis and prevalence of each. 99 of the children had a primary diagnosis of a refractive error anomaly. All but four students had a refractive error diagnosis and only two had no abnormal findings.

Putting all of those together means that almost 50% of the students had been struggling through blurry vision without ever being examined.

Hyperopia was present in 74.3% of the children, myopia in 19.3%, and astigmatism in 50.5% of the children. 70 children total (64.2%) received glasses from the program as treatment. In comparison to the 90.8% children with refractive error in this study, Ethan et. al found that only 20% of school children in the United States have a vision problem.²

Some of the children had eye alignment problems. One student had exophoria (0.9%), four had exotropia (3.7%), two had an esotropia (1.8%), one had

a hyperphoria (0.9%), and one a hypertropia (0.9%). Combined there were about 8.3% of the children had an eye alignment problem.

Figure 1: Diagnoses and Prevalence			
	School 1	School 2	Total
Examination of Eyes	3.2%	--	1.8%
Hyperopia	71.4%	78.3%	74.3%
Myopia	19.0%	19.6%	19.3%
Astigmatism	55.6%	43.5%	50.5%
Anisometropia	3.2%	2.2%	2.3%
Esotropia	3.2%	--	1.8%
Exotropia	3.2%	2.2%	3.7%
Hypertropia	--	2.2%	0.9%
Phoria	3.2%	4.3%	3.7%
Convergence Insufficiency	9.5%	6.5%	8.3%
Convergence Excess	3.2%	6.5%	4.6%
Paresis of Accommodation	4.8%	--	2.8%
Spasm of Accommodation	3.2%	--	1.8%
Unspecified refractive/accommodation	1.6%	--	0.9%
Fusion with defective stereopsis	--	2.2%	0.9%
Oculomotor Dysfunction	--	2.2%	0.9%
Saccadic Deficiencies	--	4.3%	1.8%
Pursuit Deficiencies	--	2.2%	0.9%
Amblyopia	4.8%	--	2.8%
Headache	1.6%	--	0.9%
Allergic Conjunctivitis	1.6%	2.2%	1.9%
Retinal Hole	--	2.2%	0.9%
Paralytic Strabismus External Ophthalmoplegia	--	2.2%	0.9%
Developmental Delay-Reading Disorder Unspecified	--	2.2%	0.9%

Other students were diagnosed with oculomotor or binocular vision problems, including problems with accommodation. These problems were found in 21.1% of the students. One child had oculomotor dysfunction, one had pursuits deficiency and two had saccadic deficiency. Three had paresis of accommodation and two had spasm of accommodation. Five (4.6%) of the children had convergence

excess and nine (8.3%) had convergence insufficiency. Three other (2.8%) children were diagnosed with amblyopia, either refractive or strabismic. A study done by Lara et. al showed that 22.3% of patients have some form of accommodative or binocular system disorder. Accommodative problems in that study occurred in about 9.4% of patients but was only seen in about 4.5% of patients in our study. Binocular dysfunction was seen in 12.9% and 5.5% in our study. Convergence insufficiency and convergence excess were seen equally in our study at 2.8% each but convergence excess was seen more than convergence insufficiency in the study done by Lara et. al.⁷

Teachers and parents were invited to fill out surveys regarding the experience the child had during and after the SINE program, including the treatment of any eye conditions. The parent surveys asked fourteen questions with answers on a rating of one through five, with five being strongly agree and one being strongly disagree (see Appendix A). The teacher surveys contained seven questions (see Appendix B). Parents and teachers were also invited to give comments to help improve the program. Twenty-two parents filled out and returned the surveys. 90.9% of the parents agreed that their children benefited from the SINE program, by choosing that they agree or strongly agree. Most parents also agreed that there was some improvement in school performance, test scores, self-confidence, and sports performance. Most parents rated these a 3 or better, with 3 being neutral and 4/5 being that they agreed to a varying degree. 45.5% of parents thought there was an improvement in school performance and 40.9% thought there was an improvement in test scores. No parents thought there was a negative impact on school or tests

from the glasses. 40.9% agreed there was an improvement in self-confidence and 27.3% thought there was an improvement in their child's sport performance. 4.5% did think there was a negative impact to self-confidence and sports. 72.7% of parents also stated that the glasses are being worn as prescribed. Over 90% of parents agreed that the eye care was of good quality and that reports received had a lot of valuable information. They also all agreed that the information and results showed the value in full comprehensive eye exams versus just school screenings. Though this program helped many students in need to receive eye care, 45.5% parents stated that they could get glasses and eye exams for their children without this program. 22.7% strongly agreed that without the SINE program it was difficult to get eye care. Fourteen teachers completed the surveys. 78.6% of teachers thought the program gave quality eye care to students, whereas 21.4% were neutral and no one thought it was not quality eye care. 78.6% of the teachers also thought that the students benefited from the glasses if they were needed. 85.5% of teachers thought that the program showed a need for a comprehensive eye exam versus just a school screening. Figure 4 and Figure 5 show the most common comments left by teachers and parents on the survey forms.

Figure 2: Common Teacher Comments to Survey Question
How have the students prescribe glasses benefit from them?
<ul style="list-style-type: none"> -More confidence, better control of their situation -Many who have received them have not been wearing them. -They can see the board better and stay focused in class better. -Improved vision, adding to overall academic success. -Tracking and comprehension -Their reading scores and confidence have increased -Seeing things more clearly. One student is refusing to wear his glasses.
Describe any benefits of this program over school vision screenings.
<ul style="list-style-type: none"> -I love the students who cannot afford (or unable) to get quality eye care can with the wonderful program. -The Ferris experience is more comprehensive, students get to see a college campus; it has a bigger, positive impact. -This ID's the problem and helps fix it. -Students are actually fitted for glasses if needed. Much more help than screenings.
Would you like to see this program continue in the future? Describe.
<ul style="list-style-type: none"> -Yes, I think that tracking and other eye issues are a huge concern at this age and it isn't tested for in a school eye screening. -I would! Even just a few months into the school year I can see some other students that could greatly benefit from this program -Yes- a great need at our school -Yes, I think it is very beneficial for the students -Yes- parents may not follow up on school exams to get glasses. -Absolutely, with the high need for eye care in this poverty stricken area, this is the only way many of these students can get proper eye care.
Suggestions for improvement?
<ul style="list-style-type: none"> -Simplified Forms/Day of event was confusing. -Meet with students a couple days ahead to remind them. Send them a reminder note. Explain to students where to meet. -Reduce paperwork, this type of parent often has difficulty reading instructions and fails to follow through with forms.
Any additional comments about program?
<ul style="list-style-type: none"> -We appreciate the help for our students -A tremendous help to the children

Figure 3: Common Parent Comments to Survey Questions
Why aren't the glasses worn as prescribed?
-No glasses were needed.
Why Without this program it is difficult to have my child/children's eyes examined?
-I am doing chemo so it is hard to get out and do things -Work late, can't get to doctor -Transportation and I am disabled -I had a hard time finding an office that accepted our insurance.
Why Without this program is it difficult to obtain glasses for my child/children?
-Same as above -My son is always bending his glasses
Describe any problems with your access to eye care services.
-The offices that accept our insurance are an hour drive away -I lack transportation and it is difficult for me to get out due to my disability
Would you like to see this program continue in the future? Describe.
-Yes helps under privileged families/low income families. -Yes, The exam is much more thorough than we get even at the eye doctor in Cadillac. -Yes, this program is vital to not only access and treatment, but to teaching children the importance of eye health at an early age. -Yes, it's a great program and helps a lot of children out. -Yes, cause it made a big difference in my child's eye sight and she's doing awesome -Yes, it provides helpful information to the child's parents and gives the child help with their eyes that might go undiagnosed.
Suggestions for program improvement?
-Make it easier to find replacement frames- 2 years in a row my child broke frames within a month and had to purchase a full new set of glasses. -My daughter's glasses came to her with a scratch on the lens. Maybe inspection of glasses before giving them to the child. She noticed right away but was embarrassed to say anything. -More communication for the parents. Letters shouldn't be sent home after children get their glasses.
Any additional comments about program?
-Could be improved by fun, interactive, and informative presentation for the kids as an activity between the two groups appointments. -This program has helped with my other children in the past, they were diagnosed with dyslexia and tracking issues. Without this program they would of never found out through a regular eye exam.

CHAPTER 4

DISCUSSION

The SINE program demonstrated a solid need for comprehensive eye care among elementary school children. The success of the program proved that children need more than just a quick vision screening and two that there are children that would not have access to eye care without a program like this. Zhang et. al concluded that this access is prohibited by multiple factors. The two most prevalent in their study were inability to purchase eyeglasses and lack of vision insurance.¹ In addition to these factors, the SINE program surveys showed that difficulty with transportation as well as parent disability were barriers to eye care for their children. It can be deducted from this information that areas of lower socioeconomic stature have greater prevalence of problems, and therefore greater need for care. In examining the unmet need, it is surprising that these children have not had eye examinations and interventions earlier. As mentioned earlier, nearly 50% of these students had been in need of refractive correction, further proving the need for this program. Schools may have annual vision screenings that tell the parent and/or teacher that the child is seeing “well enough”. However, some of these refractive error anomalies, in addition to other visual difficulties will not be caught due to

accommodation and lack of detail in the screenings. These screenings only scratch the surface of what could be going on in a child's eyes. Foutouhi et. al completed a study based on examination of students who were deemed to have 20/20 vision after a school screening. Of these students, 16% had some type of ametropia, 10% of it being hyperopia.³ Without screening follow up in the form of a complete examination, these children would have continued struggling through school without correction. The results of the SINE program also included amblyopia and oculomotor/binocular vision dysfunction. As stated above, nearly 3% of children were diagnosed with amblyopia, and just over 21% were diagnosed with some type of binocular vision or oculomotor dysfunction. Previous studies have shown the prevalence of amblyopia in children is between 2-3%, which is very much in line with the results of the SINE program. Previous studies have also shown prevalence of binocular vision impairment to be between 3-4%, and the results of the SINE program were much more disturbing at nearly 5-6 times that. A study performed by the Mayo clinic compared the prevalence of binocular vision/oculomotor anomalies to diagnosis of ADHD. The results of this study showed that children with these problems were much more likely to be diagnosed with learning disabilities or attention deficit hyperactivity disorder.⁴ A simple diagnosis of a learning disability may provide a child with more time or more assistance in class or on exams, but will not help at the root of the problem if a visual disorder is to blame.

Reflecting on the SINE statistics, it is apparent that vision screenings should be replaced by comprehensive eye examinations in order to catch and treat visual disorders. In addition, it will be important to form better relationships between

local optometrists and the nurses and teachers involved in the school screenings or identification of children with potential vision problems. The information from the screenings can be improved and can become more detailed, but without communication between the screening administrators, teachers, parents, and doctors the results may not help the children who need it most. Herein lies the practicality of the SINE program: each of the students examined were referred by either a teacher, parent, or both. Referrals were based not just on numbers, but also on daily difficulties that a child was experiencing. In addition, the children were provided with glasses if needed, something that sets this study apart. A study was performed over a years time in Baltimore by Preslan and Novak. The study was set up in a similar way, however an ophthalmologist visited the school and performed exams on children who failed their screening. The results of his program showed a lower rate of refractive error, but also fails to mention anything about helping the children who tested with positive for refractive error requiring correction.⁵ Once the need for glasses is determined by an eye care professional, they must be procured. Through insurance and grant money in SINE, this component was addressed, providing the ultimate opportunity for success in school.

According to Zhang et. al, by the year 2020 Americans with visual impairment or eye diseases could increase by more than 50%.⁶ With these numbers, there is no doubt that the need for comprehensive eye care in children is there, and this program should be the first of many around the country. In order to make programs like this successful, parents and teachers must be aware of the symptoms to look for in their children and students. Some of these symptoms include: sitting

close to the television or holding a book close to the nose, reversing letters or losing place while reading, closing one eye to read, rubbing or squinting the eyes a lot, and complaints of headaches or tired eyes. Additional symptoms a parent or teacher may notice are avoiding of homework - especially if it includes a lot of reading, avoidance of computer use, decreased interest in sports, and lower grades than prior report cards.⁴ Making parents and teachers more aware of problematic signs, as well as programs that are available to help their children and students, will make a world of difference to these children in need. The surveys from the SINE program already reveal the positive impact on the children, their academic performance, and their home life.

Teachers and parents both agreed that this program was well worth the effort by all involved. The parents and teachers all thought students needed and benefited from comprehensive eye exams. The parents stated that the SINE program helped their child. Some parents noted an improvement in school, sports, test scores, and self-confidence, while many were neutral. A comment from one of the surveys states that this eye exam found dyslexia and tracking issues, and without the program the problems would not have been found. Having comprehensive eye exams is a great way to find some of these subtle eye issues that could be mistaken for laziness or poor performance in school. The surveys showed that some parents thought they could get eye care and afford glasses without this program (rated 1-2) but many comments suggested otherwise. One of these rural schools does not have any eye care facilities within 25 to 30 miles from it, whereas the other has a couple options within five miles. Comments about access to eye care from the school

without any options close by included “offices that accept our insurance are an hour drive away”, “I lack transportation and it is difficult for me to get out due to my disability” and “I work late, can’t get to the doctor”. With the other school there were not any comments about having problems with access to eye care. Most parents without readily available eye care strongly agreed that it was difficult to get eye care on the surveys whereas most parents disagreed with this statement at the second school where eye care is more easily accessible. Even though there was eye care close by and parents agreed that it was available there were still about 40% of students that had not had an eye exam before. This percentage was about the same at each school even though access is better in one location. This shows the need for more parents to be educated about the importance of regular comprehensive eye exams and problems that children could be suffering from.

All of the teachers agreed that this was a good program and many thought that the students truly need the eye care. One teacher commented “with the high need for eye care in the poverty stricken area, this is the only way many of these students can get proper eye care.” Both parents and teachers agreed that there is value in a comprehensive eye exam versus a school vision screening, but without programs like SINE it is difficult to get proper eye care, especially in low-income rural communities. Vision screenings do not assess more than vision and even then it cannot tell how hard a student is working to pass the test. It is important to educate patients and parents on the importance of regular eye exams starting at a young age, and important for eye care professionals to ask specific questions and add in essential extra testing to aid in diagnosing subtle binocular vision and/or

oculomotor problems. Parents must be educated and watchful of signs that their children are struggling because of an eye-related problem.

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APPENDIX A
IRB APPROVAL FORM

To: Dr. Sarah Hinkley, Allison Ezell and Lindsey Ellicott
From: Dr. Stephanie Thomson, IRB Chair
Re: IRB Application #140103 (Title: *Prevalence of ocular conditions in primary school children: an evaluation of access and outcomes using the Students in Need of Eyecare Program*)
Date: May 30, 2014

The Ferris State University Institutional Review Board (IRB) has reviewed your application for using human subjects in the study, "*Prevalence of ocular conditions in primary school children: an evaluation of access and outcomes using the Students in Need of Eyecare Program*" (#140103) and approved it as expedited –category 2E from full committee review. This approval has an expiration date of one year from the date of this letter. **As such, you may collect data according to procedures in your application until May 30, 2015.** It is your obligation to inform the IRB of any changes in your research protocol that would substantially alter the methods and procedures reviewed and approved by the IRB in this application. Your application has been assigned a project number (#140103) which you should refer to in future communications involving the same research procedure.

We also wish to inform researchers that the IRB requires follow-up reports for all research protocols as mandated by Title 45 Code of Federal Regulations, Part 46 (45 CFR 46) for using human subjects in research. We will send a one-year reminder to complete the final report or note the continuation of this study. The final-report form is available on the [IRB homepage](#). Thank you for your compliance with these guidelines and best wishes for a successful research endeavor. Please let us know if the IRB can be of any future assistance.

Regards,



Ferris State University Institutional Review Board
Office of Academic Research, Academic Affairs

APPENDIX B
TEACHER SURVEY

SINE Program
1 Month Post Program Teacher Survey

Your student/s participated in the Students in Need of Eyecare Program at the Ferris State University Eye Center. We are conducting research on the outcomes of the program. This study is funded by the Michigan College of Optometry at Ferris State University, the Ferris Foundation and the Michigan Campus Compact. Your participation is completely voluntary and we value your thoughts. The survey will take approximately 5-10 minutes to complete and your answers will remain anonymous. There are no risks associated with this survey and benefits include contributing to optometric knowledge about school based eye care programs. You may choose not to answer one or more questions or may withdraw participation at any time. By submitting this survey you agree to take part in this research. The main researcher conducting this study is Dr. Sarah Hinkley at Ferris State University. Questions about the project can be directed to her at sarahhinkley@ferris.edu, 1124 S. State St, Big Rapids MI 49307. [If you have any questions or concerns about your rights as a subject in this study, please contact:](#) Ferris State University Institutional Review Board for Human Participants at 1201 S. State St, CSS 310, Big Rapids, MI 49307, irb@ferris.edu or 231-591-2553.

Circle your answer reporting how strongly you agree with the statements below, with 5 being “Strongly Agree” and 1 being “Strongly Disagree.”

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The event was well organized	1	2	3	4	5
I had a positive experience with the program	1	2	3	4	5
I feel as though my students’ eye care needs were met	1	2	3	4	5
The eye care received was of high quality	1	2	3	4	5
My students enjoyed the program	1	2	3	4	5
The program has demonstrated the value of comprehensive exams versus school vision screenings	1	2	3	4	5
The students who received glasses have benefited from them	1	2	3	4	5
If so, please describe how:					

Describe any benefits of this program over school vision screenings.

Would you like to see this program continue in the future? Describe.

Suggestions for improvement?

Any additional comments about program?

Grade level taught:

Thank You! Return by **Friday, Nov. 28** in person or by mail to:

**Kathy Cooley
Floyd M. Jewett Elementary
Mesick Consolidated Schools
PO Box 275
210 E. Mesick Ave.
Mesick, MI 49668**

APPENDIX C
PARENT SURVEY

Students in Need of Eyecare (SINE) Program
1 Month Post Program Parent Survey

Your child participated in the Students in Need of Eyecare Program at the Ferris State University Eye Center. We are conducting research on the outcomes of the program. This study is funded by the Michigan College of Optometry at Ferris State University, the Ferris Foundation and the Michigan Campus Compact. Your participation is completely voluntary and we value your thoughts. The survey will take approximately 5-10 minutes to complete and your answers will remain anonymous. There are no risks associated with this survey and benefits include contributing to optometric knowledge about school based eye care programs. You may choose not to answer one or more questions or may withdraw participation at any time. By submitting this survey you agree to take part in this research. The main researcher conducting this study is Dr. Sarah Hinkley at Ferris State University. Questions about the project can be directed to her at sarahhinkley@ferris.edu, 1124 S. State St, Big Rapids MI 49307. If you have any questions or concerns about your rights as a subject in this study, please contact: Ferris State University Institutional Review Board for Human Participants at 1201 S. State St, CSS 310, Big Rapids, MI 49307, irb@ferris.edu or 231-591-2553.

Circle your answer reporting how strongly you agree with the statements below, with 5 being “Strongly Agree” and 1 being “Strongly Disagree.”

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
My child/ren benefited from the SINE Program	1	2	3	4	5
If my child/ren needed glasses I have noticed...					
A positive improvement in school performance	1	2	3	4	5
A positive improvement in test scores	1	2	3	4	5
A positive improvement in self-confidence	1	2	3	4	5
A positive improvement in sports performance	1	2	3	4	5
School support of the doctor’s treatment plan	1	2	3	4	5
My child/ren continue/s to wear his/her/their glasses	1	2	3	4	5
The glasses are being worn on the schedule prescribed	1	2	3	4	5
If you disagree or strongly disagree, explain why: _____					

The eye care received was of high quality	1	2	3	4	5
The report received provided valuable information	1	2	3	4	5
The program was well received by the school community	1	2	3	4	5
The program has demonstrated the value of comprehensive eye examinations versus school vision screenings	1	2	3	4	5

Without this program it is difficult for me to have my child/children’s eyes examined 1 2 3 4 5
If so, why? _____

Without this program it is difficult for me to obtain glasses for my child/children 1 2 3 4 5
If so, why? _____

Describe any problems with your access to eye care services.

Would you like to see this program continue in the future? Describe.

Suggestions for program improvement?

Any additional comments about program?

Thank You! Return in envelopes by Friday, **November 28** to
Sarah Hinkley, OD
MCO 244
1124 S. State St
Big Rapids, MI 49307

or send back to the school with your child
Attn: Kathy Cooley, Social Worker