

POTENTIAL BARRIERS TO FILLING A PEDIATRIC (K-12) EYEGLOSS
PRESCRIPTION FOLLOWING AN EYE EXAMINATION ACROSS TWO
SEPARATE CLINICS

by

Casey Baldwin
Lyndsay Tomkins

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APPROVED:

, Faculty Advisor

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I, Casey Baldovin and Lyndsay Tomkins, 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.

ABSTRACT

Background : This pilot study aims to evaluate potential barriers in filling a pediatric eyeglass prescription following an eye examination based on data from clinics: 1) one clinic with a dispensary and 2) a school-based clinic without a dispensary. With the rise of school-based eye clinics combined with the importance that vision has on the learning process, it is important to understand what influences the filling/dispensing of an eyeglass prescription have on a child's vision and learning. *Methods*: Chi square analyses was conducted to analyze data from 35 subjects (grades K-12) who were prescribed a spectacle prescription between February and December 2010 in one of two clinics. Data was collected through the University Eye Center's electronic billing system, patient records and a corresponding telephone survey. *Results*: The statistically noteworthy differences between the 2 subject groups were shown in the results of the chi square analysis of the timing in which the subjects filled their prescription, the type of lunch aid they received, their race and ethnicity as well as their insurance status. Analysis revealed a statistically significant difference between the UEC and SPEC clinics when comparing race ($\chi=9.767$, $p=0.021$), showing a greater frequency of minorities at the SPEC clinic versus the UEC clinic. The inferential statistics also showed the difference with respect to lunches ($\chi=8.080$, $p=0.004$) confirming the greater number of subjects receiving free lunch in the SPEC as compared to UEC group. *Conclusions*: Since low income children are more likely to have uncorrected refractive error and most school-based eye care models will presumably be located within schools which are populated by low income students, it is important that school-based eye clinics strive to avoid undue delays in the provision of vision correction. The lack of an on-site dispensary, among other factors impacts a parents' decision to fill their children's prescription in a timely fashion

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INTRODUCTION

This pilot study aims to evaluate potential barriers in filling a pediatric eyeglass prescription following an eye examination based on data from two clinics: 1) one with a dispensary and 2) a school-based clinic without a dispensary. With the rise of school-based eye clinics combined with the importance that vision has on the learning process, it is important to understand what influences the filling/dispensing of an eyeglass prescription have on a child's vision and learning.

Refractive error is very prevalent in school-aged children. The actual percentage of children with refractive error varies across different studies. According to a study done in Germany, the prevalence of myopia directly correlates to an increase in age,^{1,2,3} increasing to 21% in children ages 12-17 years of age¹. Hyperopia prevalence, on the other hand, decreases as you increase in age.^{1,2,3} Starting at 9.8% in 2-6 year olds and decreasing to 3.7% in 12-17 year olds.¹ Another study, conducted in Western China, showed the prevalence of myopia, hyperopia and astigmatism, in children 6-15 years of age to be 3.26%, 13.75%, and 3.75% respectively.²

Vision plays a key role in a child's learning process and refractive error is the main cause of reduced vision in children.⁴ Visual impairment can affect quality of life; it is also very important to correct refractive error early in life to decrease other issues in the future.⁵ Further effects on overall health, self-perception, educational attainment, job choices, and a number of other social factors may all occur due to visual impairment.⁵

There is little already known on what factors influence a person's decision to fill an eyeglass prescription, however, when taking a broader look at specific barriers to

receiving health care and patient compliance, we do know that confidence in a physician, access to health care, cost, transportation, long waiting times in providers office, and uncertainty all play a role. These barriers were determined by study done looking at low-income, aging minority women. Severity of the condition also played a role in whether or not medical attention was sought and there was compliance with the majority of the women. Although this study didn't specifically deal with eyeglass prescriptions, "eye problems" were among the list of problems that those women deemed as serious concerns. Another factor influencing one's decision to seek medical attention was the influence of family members who strongly encouraged visits after respondents identified specific concerns.⁶

METHODS

This descriptive pilot study compared 18 subjects from the University Eye Center and 17 from the School-based Participatory Eye Clinic, where in which they were matched by age and insurance. The University Eye Center (UEC) has an on-site dispensary while the School-based Participatory Eye Clinic (SPEC) does not have a dispensary. A chi square analysis was conducted to compare the groups across the two sites to determine if there is any difference in the receipt of eyewear for school-aged children and adolescents, between the clinic with the on-site dispensary and the clinic without a dispensary. Multivariate analysis was also used to determine which variables most influenced a parent's decision to fill their child's eyewear prescription. Data was collected from patients of the

Michigan College of Optometry UEC and the SPEC. All information was stored on a password-protected database accessible only to investigators involved. At no time were patient files removed from the property of UEC.

The eligibility criterion included all school-aged children and adolescents (kindergarten to 12th grade) who received an equivalent comprehensive eye examination and concurrent eye glass prescription within in one of the two clinics (UEC/SPEC) between February and May 2010. The UEC's EyeCare system was used to determine the number of subjects seen in the SPEC clinic during specified time period for subject recruitment purposes. Age- and insurance-matched subjects from the other clinic were also determined from the EyeCare system. The UEC files were used to determine active

phone numbers for eligible subjects and also provided data for the following variables: subjects' age, gender, refractive status, exam clinic setting.

A telephone survey was conducted with all parents and/or legal guardians (over 18 years of age) of eligible subjects. Survey items addressed the parent's gender as well as the potential factors which may have influences the parent's decision-making including: location of dispensary (on-site versus other), cost, insurance, perceived need/importance, time to delivery and familiarity.

RESULTS

It is shown in Table 1 and 2 that the survey was conducted on 18 subjects from the University Eye Clinic (UEC) and 17 subjects from the School-based Participatory Eye Clinic (SPEC). Table 3 illustrates the telephone survey participants categorized based on their relationship to the subject being evaluated. Both UEC and SPEC subjects were represented most frequently by their mother, as 61.1% of the parents and guardian from the UEC group were mothers and 88.2% of the parents from the SPEC group.

Table 1.

Question Totals										
Clinic			Clinic	Parent/ Guardian	Glasses Receipt	Timing	Cost	Time/ Avail/ Inconven- ience	No Rx Given	Insurance
UEC	N	Valid	18	18	18	18	18	18	18	18
		Missing	0	0	0	0	0	0	0	0
		Mode	1.00	1.00	1.00	1.00				
SPEC	N	Valid	17	17	17	17	17	17	17	17
		Missing	0	0	0	0	0	0	0	0
		Mode	2.00	1.00	1.00	1.00				

Table 2.

Factor Totals										
Clinic			Not Important	No Access	Other	First Pair	Household Glasses	Lunch	Education	Race/ Ethnicity
UEC	N	Valid	18	18	18	18	18	18	18	18
		Missing	0	0	0	0	0	0	0	0
		Mode				.00	1.00	1.00	2.00	5.00
SPEC	N	Valid	17	17	17	17	17	17	17	17
		Missing	0	0	0	0	0	0	0	0
		Mode				.00	1.00	1.00	2.00	5.00

Table 3.

		Parent/Guardian				
			Frequency	Percent	Valid Percent	Cumulative Percent
UEC	Valid	Mother	61.1	61.1	61.1	61.1
		Father	22.2	83.3	22.2	83.3
		Step Parent	5.6	88.9	5.6	88.9
		Legal Guardian	11.1	100.0	11.1	100.0
		Total	100.0		100.0	
SPEC	Valid	Mother	88.2	88.2	88.2	88.2
		Father	5.9	94.1	5.9	94.1
		Step Parent	.0	94.1	.0	94.1
		Legal Guardian	5.9	100.0	5.9	100.0
		Total	100.0		100.0	

Along with totaling of the information between the two clinics, a Chi square analysis was so conducted on the many variables to show the significance and lack of significance of each when comparing the two subject groups. Inferential statistics in Table 4 revealed that there was no statistical difference ($\chi^2=5.542$, $p=0.142$) between the identity of the parent or guardian conducting the survey on their child's behalf between the UEC and SPEC groups.

Table 4.

Clinic	Parent/Guardian	
UEC	Chi-Square	.000
	df	1
	Asymp. Sig.	1.000
SPEC	Chi-Square	5.452
	df	3
	Asymp. Sig.	.142
		Not significant

With respect to glasses prescriptions, Table 5 reveals that 16 of the total 18 subjects from UEC filled their prescription given to them and 16 of 17 received glasses from the SPEC group. Table 5 illustrates the distribution of the timeline in which the subjects filled their prescription from the date they received it. The UEC subject group showed significantly

higher numbers for same day filling, where as the SPEC subject group had a more scattered distribution of filling ranging from 5 subjects on the same day and 3 subjects waiting until 2 to 6 months after their examination. Table 6 reveals that there wasn't a statistically significant difference between glasses receipt for UEC patients versus SPEC patients (glasses $\chi^2=.889$, $p=0.346$).

Table 5.

Glasses Receipt						
Clinic			Frequency	Percent	Valid Percent	Cumulative Percent
UEC	Valid	No	2	11.1	11.1	11.1
		Yes	16	88.9	88.9	100.0
		Total	18	100.0	100.0	
SPEC	Valid	No	1	5.9	5.9	5.9
		Yes	16	94.1	94.1	100.0
		Total	17	100.0	100.0	

Table 6.

Clinic			Glasses Receipt
UEC	Chi-Square		.889 ^a
	df		1
	Asymp. Sig.		.346 Not significant
SPEC	Chi-Square		.000 ^b
	df		1
	Asymp. Sig.		1.000

It is illustrated in Table 7 and 8 that 83.3% of subjects from the University Eye Center filled their glasses prescription on the same day as their completed eye examination. The School-based Participatory Eye Clinic displayed a wider array of results concerning timing with same day and same week having the largest tally numbers. The chi square analysis also determined the significant difference between to two clinics ($\chi^2=33.0$, $P=0.00$)

Table 7.

Clinic		Timing				
			Frequency	Percent	Valid Percent	Cumulative Percent
UEC	Valid	Not Applicable/Don't Know	3	16.7	16.7	16.7
		Same Day	15	83.3	83.3	100.0
		Same Week	0	.0	.0	100.0
		2 to 4 Weeks Later	0	.0	.0	100.0
		1 to 2 Months Later	0	.0	.0	100.0
		2 to 6 Months Later	0	.0	.0	100.0
		Total	18	100.0	100.0	100.0
SPEC	Valid	Not Applicable/Don't Know	1	5.9	5.9	5.9
		Same Day	5	29.4	29.4	35.3
		Same Week	3	17.6	17.6	52.9
		2 to 4 Weeks Later	3	17.6	17.6	70.6
		1 to 2 Months Later	2	11.8	11.8	82.4
		2 to 6 Months Later	3	17.6	17.6	100.0
		Total	17	100.0	100.0	

Table 8.

Clinic	Timing	
UEC	Chi-Square	33.000
	df	5
	Asymp. Sig.	.000 Significant
SPEC	Chi-Square	.000
	df	5
	Asymp. Sig.	1.000

Table 9 and 10 represent the major factors that were evaluated in the telephone survey.

The subjects were asked to indicate the factors, if any, affected their decision to fill the prescription. Cost was only a factor for 1 subject in the UEC group.

Table 9.

Cost, Other						
Clinic			Frequency	Percent	Valid Percent	Cumulative Percent
UEC	Valid		16	88.9	88.9	88.9
		No	1	5.6	5.6	94.4
		Yes	1	5.6	5.6	100.0
		Total	18	100.0	100.0	
SPEC	Valid		16	94.1	94.1	94.1
		No	1	5.9	5.9	100.0
		Total	17	100.0	100.0	

Table 10.

Time/Availability/Inconvenience, No Rx Given, Insurance, Not Important, No Access						
Clinic			Frequency	Percent	Valid Percent	Cumulative Percent
UEC	Valid		16	88.9	88.9	88.9
		No	2	11.1	11.1	100.0
		Total	18	100.0	100.0	
SPEC	Valid		16	94.1	94.1	94.1
		No	1	5.9	5.9	100.0
		Total	17	100.0	100.0	

When asked if anyone in the household wore glasses, Table 11 reveals that 88.9% in the UEC group and 70.6% in the SPEC group had family members that clearly influenced the child's and/or guardians' decision to fill the eye glass prescription.

Table 11.

Household Glasses						
Clinic			Frequency	Percent	Valid Percent	Cumulative Percent
UEC	Valid	No	2	11.1	11.1	11.1
		Yes	16	88.9	88.9	100.0
		Total	18	100.0	100.0	
SPEC	Valid	No	5	29.4	29.4	29.4
		Yes	12	70.6	70.6	100.0
		Total	17	100.0	100.0	

It was also shown that the glasses receipt variable and the variable concerning the fact that people within the household had glasses, had no significant difference (household $\chi^2=2.904$, $p=0.088$) between the two clinics.

Table 12.

Clinic		Household Glasses	
UEC	Chi-Square	2.904 ^a	
	df	1	
	Asymp. Sig.	.088 Not significant	
SPEC	Chi-Square	.000 ^b	
	df	1	
	Asymp. Sig.	1.000	

Table 13 illustrates the diversity in the UEC group as compared to the SPEC group when investigating financial and social status. With 5 subjects with normal lunch, 11 with free lunch and 2 with reduced lunch in the UEC group, this differs greatly in comparison to all 17 subjects receiving free lunch in the SPEC group.

Table 13.

		Lunch				
Clinic			Frequency	Percent	Valid Percent	Cumulative Percent
UEC	Valid	Normal	5	27.8	27.8	27.8
		Free	11	61.1	61.1	88.9
		Reduced	2	11.1	11.1	100.0
		Total	18	100.0	100.0	
SPEC	Valid	Free	17	100.0	100.0	100.0

The inferential statistics also showed the difference with respect to lunches ($\chi^2=8.080$, $p=0.004$) and confirmed the greater number of subjects receiving free lunch in the SPEC group as compared to the UEC group.

Table 14.

Clinic		Lunch	
UEC	Chi-Square	.000	
	df	1	
	Asymp. Sig.	1.000	
SPEC	Chi-Square	8.080	
	df	1	
	Asymp. Sig.	.004 Significant	

Table 15 reveals the distribution of educational level of the caretaker of the patient. Both groups were very comparable with 72.2% of the UEC individuals and 76.5% of the SPEC individuals had some college or less.

Table 15.

Education						
Clinic			Frequency	Percent	Valid Percent	Cumulative Percent
UEC	Valid	Less Than High School Diploma	2	11.1	11.1	11.1
		High School Diploma	6	33.3	33.3	44.4
		Some College Only	5	27.8	27.8	72.2
		Associate's Degree	4	22.2	22.2	94.4
		Bachelor's Degree	1	5.6	5.6	100.0
		Total	18	100.0	100.0	
SPEC	Valid	Less Than High School Diploma	4	23.5	23.5	23.5
		High School Diploma	5	29.4	29.4	52.9
		Some College Only	4	23.5	23.5	76.5
		Associate's Degree	2	11.8	11.8	88.2
		Bachelor's Degree	2	11.8	11.8	100.0
		Total	17	100.0	100.0	

Table 16.

Clinic		Education	
UEC	Chi-Square	3.675	
	df	4	
	Asymp. Sig.	.452 Not significant	
SPEC	Chi-Square	.000	
	df	4	
	Asymp. Sig.	1.000	

In Table 17, race and ethnicity was investigated as well and the totals were 17 Caucasian and 1 Hispanic for the UEC subjects and 3 African American, 2 Hispanic, 10 Caucasian and 2 Mix in the SPEC group.

Table 17.

Race/Ethnicity						
Clinic			Frequency	Percent	Valid Percent	Cumulative Percent
UEC	Valid	Hispanic	1	5.6	5.6	5.6
		Caucasian	17	94.4	94.4	100.0
		Total	18	100.0	100.0	
SPEC	Valid	African American	3	17.6	17.6	17.6
		Hispanic	2	11.8	11.8	29.4
		Caucasian	10	58.8	58.8	88.2
		African American/Caucasian	2	11.8	11.8	100.0
		Total	17	100.0	100.0	

Chi square analysis in Table 18 revealed a statically significant difference between the UEC and SPEC clinics when comparing race ($\chi^2=9.767$, $p=0.021$), showing a greater frequency of minorities at the SPEC clinic versus the UEC clinic.

Table 18.

Clinic	Race/Ethnicity	
UEC	Chi-Square	9.767
	df	3
	Asymp. Sig.	.021 Significant
SPEC	Chi-Square	.000
	df	3
	Asymp. Sig.	1.000

Table 19 illustrates the frequency numbers for evaluating the status of the subject's eye glass prescription. When asked if this was the first pair of glasses for the patient, tallies for UEC were 11 out of 18 and 12 out of 17 for SPEC. Table 20 aids in demonstrating an

insignificant difference between the two clinics and the variable of first time glasses status is of no impact to filling any eye glass prescription.

Table 19.

First Pair						
Clinic			Frequency	Percent	Valid Percent	Cumulative Percent
UEC	Valid	No	11	61.1	61.1	61.1
		Yes	7	38.9	38.9	100.0
		Total	18	100.0	100.0	
SPEC	Valid	No	12	70.6	70.6	70.6
		Yes	5	29.4	29.4	100.0
		Total	17	100.0	100.0	

Table 20.

Clinic	First Pair	
UEC	Chi-Square	.779 ^a
	df	1
	Asymp. Sig.	.378
	Not significant	
SPEC	Chi-Square	.000 ^b
	df	1
	Asymp. Sig.	1.000

Insurance is a variable of noteworthy difference between the two clinics evaluated. Table 21 and 22 unveiled the significant difference in insurance of the two groups ($\chi=4.446$, $p=0.035$) and it was confirmed that there was a higher percentage of Medicaid patients within the SPEC subject group versus the UEC group.

Table 21.

Insurance						
Clinic			Frequency	Percent	Valid Percent	Cumulative Percent
UEC	Valid	Medicaid	13	72.2	72.2	72.2
		Uninsured	5	27.8	27.8	100.0
		Total	18	100.0	100.0	
SPEC	Valid	Medicaid	15	88.2	88.2	88.2
		Uninsured	2	11.8	11.8	100.0
		Total	17	100.0	100.0	

Table 22.

Clinic	Insurance	
UEC	Chi-Square	4.446
	df	1
	Asymp. Sig.	.035 Significant
SPEC	Chi-Square	.000 ^b
	df	1
	Asymp. Sig.	1.000

DISCUSSION

The goal of this study was to compare two eye clinics, one with a dispensary (UEC) and one without (SPEC) to see what barriers exist when filling a pediatric eyeglass prescription. There was no statistically significant difference in the number of patients in each clinic that filled their eyeglass prescription. However, the time in which the prescription was filled did vary between the two clinics. It appears that when there is a dispensary onsite, the prescription is much more likely to be filled sooner, many on the same day as the appointment, than the clinic which doesn't have an onsite dispensary.

The number of participants that filled their eyeglass prescription was much larger than expected for both clinics. As mentioned before, family members influence whether or not patients seek medical attention and are compliant.⁶ Within this study, 88.9% of the UEC and 70.6% of the SPEC group had at least one person in the household who wore spectacle lenses. People who wear spectacle lenses are more likely to know the importance of refractive correction and will encourage other family members to fill their glasses prescription. Also, for the majority of the subjects in this study, it was not their first pair of glasses. Because these participants are already wearing spectacle lenses or have in the past, they are more familiar with the importance of refractive correction with spectacle lenses. Both of these factors may contribute to the high percentage of participants who filled their eyeglass prescription and suggests that perceived need/importance and familiarity play a role in whether or not an eyeglass prescription is filled.

Although we tried to match the two groups based on financial status by matching them by their insurance type, there was a slight difference between the UEC and SPEC groups. There were a larger percentage of Medicaid patients in the SPEC group compared to the UEC group. There were also a larger percentage of participants in the SPEC group receiving free lunch than in the UEC group; possibly suggesting a lower financial status of the SPEC group compared to the UEC group.

Since low income children are more likely to have uncorrected refractive error and most school-based eye care models will presumably be located within schools which are populated by low income students, it is important that school-based eye clinics strive to avoid undue delays in the provision of vision correction. The lack of an on-site dispensary, among other factors impacts a parents' decision to fill their children's prescription in a timely fashion.

Not much is known on the importance of having an onsite dispensary in a school-based clinic and future research needs to be done within a larger population to either confirm or disagree with the findings of this study. Hopefully this study raises awareness on the prevalence and importance of refractive error correction in school-aged children specifically in lower-income families and will help in deciding whether or not on-site dispensaries are beneficial for school-based eye clinics.

REFERENCES

1. References Jobke S, Kasten E, Vorwerk C. The prevalence rates of refractive errors among children, adolescents, and adults in Germany. *Clinical Ophthalmology* 2008;2(3); 601-607.
2. Pi LH, Chen L, Liu Q, Ke N, Fang J, Zhang S, Xiao J, Ye WJ, Xiong Y, Shi H, Yin ZQ. Refractive Status and Prevalence of Refractive Errors in Suburban School-age Children. *International Journal of Medical Sciences*. 2010; 7(6): 342-353.
3. Twelker JD, Mitchell L, Messer DH, Bhakta R, Jones LA, Mutti DO, Cotter SA, Kleinstein RN, Manny RE, Zadnik K. Children's Ocular Components and Age, Gender, and Ethnicity. *Optometry and Vision Science*. 2009; 86(8): 918–935.
4. Yingyong P. Refractive errors survey in primary school children (6-12 year old) in 2 provinces: Bangkok and Nakhonpathom (one year result). *Journal of The Medical Association of Thailand*. 2010;93(10): 1205-10.
5. Davidson S, Quinn GE. The Impact of Pediatric Vision Disorders in Adulthood. *Pediatrics* 2011;127: 334-339
6. Esser-Stuart JE, Lyons MA. Barriers and influences in Seeking Health Care Among Lower Income Minority Women. *Social Work in Health Care*. 2002;35(3): 85-99.

APPENDIX A
Telephone Survey

Telephone Interview

Step 1

"Hello! My name is _____. I am from the Michigan College of Optometry at Ferris State U. May I speak to the parent/legal guardian who makes health care decisions for _____?" *If yes, verify name: _____ go to step 2*

- *Mother*
- *Father*
- *Step parent*
- *Legal guardian*

If no or unavailable, ask for better time to call back and document date/time:

Step 2

"We recently examined _____ (your child) at our eye clinic. I have 6 short questions which will help us provide better care for you and your family. This should take about 5 minutes or less –you don't have to participate and don't even have to answer all of the questions and there is absolutely NO risk to your family whether or not you choose to participate. All information is **strictly confidential**. Would you mind helping us out today?"

IF NO: "That's OK. Thanks for your time today."

IF YES: "Great! Thank you! If you have any questions or concerns about this survey or about our phone conduct, you can contact Dr. Renee Mika at 231-591-2182." *Then on to step 3...*

Step 3

1. Did your child receive the glasses that were prescribed?

If YES: When did you order the glasses after receiving the prescription?

- [1] Same day
- [2] Same week
- [3] 2-4 weeks later
- [4] 1-2 months later
- [5] 2-6 months later
- [6] > 6 months later

- Where did you order them?

If NO: Which, if any, of these factors contributed to you not purchasing glasses?

- Cost... Yes[1] or No[0]?
- Time/Availability/Inconvenient... Yes[1] or No[0]?
- Didn't receive the glasses prescription... Yes[1] or No[0]?
- Insurance... Yes[1] or No[0]?
- Not Important/Didn't think the child needed it... Yes[1] or No[0]?
- No Access... Yes[1] or No[0]?
- Other: Are there any other factors that affected your decision to not purchase glasses for your child?

Which factor was most significant in your decision to not purchase glasses?

2. Would this be their first pair of glasses?
 - Yes [1]
 - No [0]

3. Does anyone in the household wear glasses or contacts?
 - Yes [1]
 - No [0]

4. Does your child receive a “free” or “reduced price” lunch?
 - **If Yes [1]:**
 - Which?
 - [1] Free
 - [2] Reduced Price
 - **If No [0]:**
 - No further questions on this topic

5. What is your highest level of education?
 - [1] Less than high school diploma
 - [2] High school diploma only
 - [3] Some college only
 - [4] Associate’s Degree
 - [5] Bachelor’s Degree
 - [6] Graduate/Professional Degree

6. What is your child’s race/ethnicity as reported to the state/school?
 - [1] African American
 - [2] Asian
 - [3] Hispanic
 - [4] Native American
 - [5] Caucasian

“We really appreciate your time. Thank you and have a great day!”