

SELF-REPORTED EYE CARE UTILIZATION AMONG
VIETNAMESE AMERICANS

by

Anh La
and
Maneek Sandhu

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APPROVED:

, Faculty Advisor

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ABSTRACT

Purpose: To determine the frequency of eye care utilization and to identify any eye care barriers for Vietnamese-Americans residing in Grand Rapids, Michigan. *Rational:* To date, no large-scale study on eye care utilization or eye care barriers have been focused on Asian Americans or an Asian subgroup. *Methods:* A 10-item survey, in English or Vietnamese, was conducted over the telephone with 100 Vietnamese-Americans residing in Grand Rapids, MI. Aside from demographic questions, all respondents were asked, “How many years ago was your last eye exam with an optometrist or ophthalmologist?” When appropriate, respondents were also asked: “Why did you see an optometrist or ophthalmologist?” and “Why have you not seen an optometrist or ophthalmologist in the last year?” *Results:* Forty-five percent of respondents had an eye exam in the last year. Of the 82 respondents who have ever had an eye exam, 28% presented to their last exam with medical complaints, 61% presented with visual complaints and 6% presented for preventative reasons. Sixty-nine percent cited “good vision” as the reason for not getting an eye exam. *Discussions:* Most respondents get their eyes examined only when they have a visual or medical concern. Routine eye examinations aid in the early detection and treatment of many visually impairing diseases. Eye care providers and primary care providers should educate patients on the importance of preventative eye care. This is worth the time and effort as it is in the best interest of the patient, their family and society.

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INTRODUCTION

The estimated annual cost of visual impairment and blindness in the United States of America is \$35.4 billion.¹ Visual impairment is expensive; preventative eye care is effective and less costly.² Early detection and treatment of cataracts, diabetic retinopathy, glaucoma, macular degeneration and other ocular diseases can prevent or reduce visual impairment.²

Many visually impairing eye diseases are more prevalent among minorities, yet minorities are also less likely to seek eye care.³⁻⁸ The literature contains large-scale studies on ocular disease prevalence, eye care utilization, and eye care barriers for African Americans³⁻⁶ and Hispanics.^{7,8} Research shows that Asian Americans are at increased risk for type 2 diabetes;⁹ however, no large-scale study on eye care utilization or eye care barriers has focused on Asian Americans. Such studies are important as they are the precursors to preventative eye care promotion.

The goal of this pilot study was to determine the frequency of eye care utilization and identify any eye care barriers for one Asian sub-group: Vietnamese Americans residing in Grand Rapids, Michigan. According to the 2006 US Census American Community Survey, there are over 1.5 million Vietnamese Americans.¹⁰ In the 2000 Census, 70% of Vietnamese Americans born in Vietnam over the age of 5 reported that their English was less than “very well”.¹¹ Because language is believed to be a health care barrier,¹² the authors hypothesized that English proficiency will directly correlate with eye care utilization.

METHODS

Telephone interviews were conducted in February 2010 with Vietnamese in the Grand Rapids area. Subjects were randomly selected from a list of approximately 1100 residents with common Vietnamese last names listed in the Grand Rapids phone book. Each phone listing was assigned a random number using Microsoft Excel's "random number" function. The column of random numbers was then sorted from smallest to largest. Calls were made down the list until 100 completed surveys were obtained. Disconnected or disqualified listings were documented. Upon verbal consent, the surveys were conducted in Vietnamese or English, depending on the householder's preference.

The survey consisted of up to 10 items. The seven demographic questions addressed age, gender, duration of US residency, vision and health insurance status, corrective lens usage and English proficiency. Respondents were all asked, "How many years ago was your last eye exam with an optometrist or ophthalmologist?" Eye care utilization was defined as having had an eye exam within the last year. Those who did not utilize eye care were asked, "Why have you not seen your optometrist or ophthalmologist in the last year?" Those who had an eye exam were asked, "Remembering back to your last eye exam, why did you see the optometrist or ophthalmologist?" Responses were loaded to a live Microsoft Excel spreadsheet.

RESULTS

Of the 279 numbers that were called, 87 were disconnected, 54 did not answer, 10 hung up, 11 declined participation, 17 did not qualify, and 100 qualified and completed the survey. Almost all respondents (99%) were born in Vietnam and have been residing in the United States between 4 to 44 years, with the average being 18.8 years. Males and females were equally represented. More than half (59%) rated their English proficiency as “a little bit” or “hardly any.” Most had health insurance (90%) and nearly half (46%) had vision insurance.

Forty-five percent of respondents utilized eye care, with utilization defined as having an eye exam within the past year (**Table 1**). Almost half (46.9%) of 30 – 44 year olds never had an eye exam while all respondents over 65 years old had. Thirty percent of respondents who rated their English proficiency as “enough to get by” never had an eye exam. All of these respondents were under 64 years of age. Age also explained why females were 3 times more likely to never had an eye exam; female respondents were younger than male respondents.

Age, possession of vision insurance and use of corrective lenses correlated with eye care utilization (**Table2**). The odds of eye care utilization increased with age. Since there were only 5 respondents in the 18-29 age bracket, they were merged with the 30-44 age bracket. Compared to adults aged 18-44 years, the odds of eye care utilization were 3.63 times higher in adults aged 45-64 years and 5.19 times higher in adults over 65 years of age. Adults without vision insurance had lower odds of eye care utilization than adults

with vision insurance (OR, 0.4; CI, 0.18-0.89). Compared to those with corrective lenses, those without correction had lower odds of eye care utilization (OR, 0.14; CI, 0.05-0.42).

Table 1. Timing of Most Recent Eye Exam						
Variables	N	Most Recent Eye Examination, %, (n)				
		<1 y	1-2 y	3-5 y	>5 y	Never
Overall	100	45% (45)	12% (12)	14% (14)	11% (11)	18% (18)
Age, y						
18 – 29	5	80% (4)	0	0	20% (1)	0
30 – 44	32	16% (5)	6% (2)	19% (6)	13% (4)	47% (15)
45 – 64	39	54% (21)	18% (7)	10% (4)	10% (4)	8% (3)
> 65	24	63% (15)	13% (3)	17% (4)	8% (2)	0
Gender						
Male	45	40% (18)	18% (8)	18% (8)	18% (8)	7% (3)
Female	55	49% (27)	7% (4)	11% (6)	5% (3)	27% (15)
English Proficiency						
Fluent	18	56% (10)	17% (3)	6% (1)	11% (2)	11% (2)
Enough to get by	23	30% (7)	4% (1)	26% (6)	9% (2)	30% (7)
Little bit	24	50% (12)	25% (6)	8% (2)	4% (1)	13% (3)
Hardly Any	35	46% (16)	6% (2)	14% (5)	17% (6)	17% (6)
Corrective Lenses						
Yes	69	58% (40)	14% (10)	13% (9)	13% (9)	1% (1)
No	31	16% (5)	6% (2)	16% (5)	6% (2)	55% (17)
Vision Insurance						
Insured	46	57% (26)	7% (3)	15% (7)	4% (2)	17% (8)
Uninsured	54	35% (19)	17% (9)	13% (7)	17% (9)	19% (10)
Health Insurance						
Insured	90	48% (43)	11% (10)	13% (12)	10% (9)	18% (16)
Uninsured	10	20% (2)	20% (2)	20% (2)	20% (2)	20% (2)
US Residency Length (y)						
<10	6	50% (3)	0	17% (1)	0	33% (2)
10 to 19	59	41% (24)	14% (8)	12% (7)	12% (7)	22% (13)
20 to 29	20	45% (9)	15% (3)	15% (3)	15% (3)	10% (2)
Over 30	14	57% (8)	7% (1)	21% (3)	7% (1)	7% (1)

Table 2. Multivariable Predictor of Eye Care Utilization

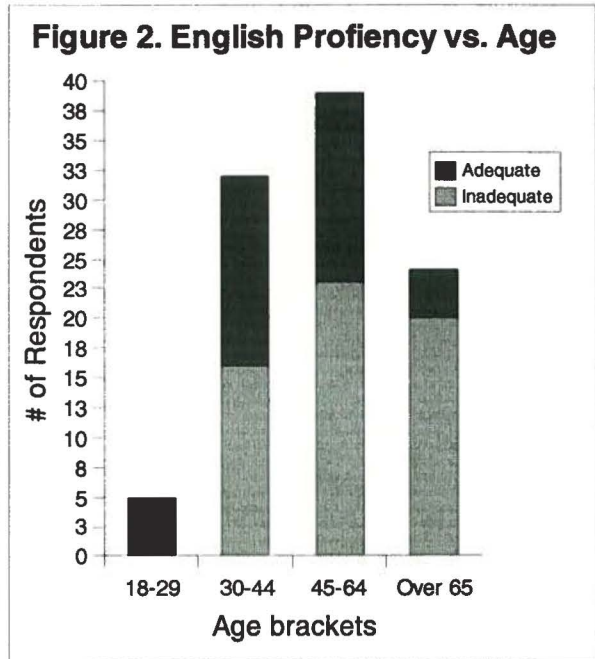
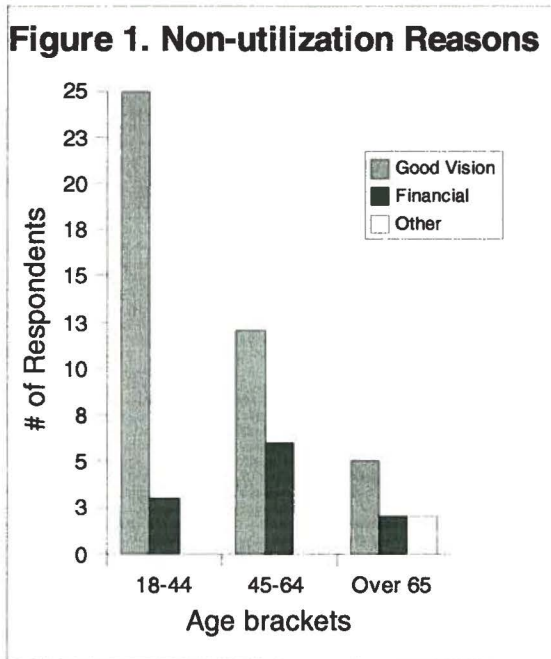
Variables	N	Utilization %	Odds ratio [95% CI]
Age (y):			
18-44	37	24%	1
45-64	39	54%	3.63 [1.34-9.87]
Over 65	24	63%	5.19 [1.66-16.2]
Gender:			
Male	45	40%	1
Female	55	49%	1.45 [0.64-3.26]
English Proficiency:			
Fluent	18	56%	1
Enough to get by	23	30%	0.35 [0.09-1.3]
A little bit	24	50%	0.8 [0.23-2.8]
Hardly any	35	46%	0.67 [0.21-2.16]
Corrective Lens:			
User	69	58%	1
Non-user	31	16%	0.14[0.05-0.42]
Vision Insurance:			
Insured	46	57%	1
Uninsured	56	34%	0.4[0.18-0.89]
US Residency (y):			
<10	6	50%	1
10 to 20	59	41%	0.69[0.12-3.82]
20 to 30	20	45%	0.82[0.13-5.28]

Note: CI, Confidence Interval

Gender, English proficiency, and length of US residency did not correlate with eye care utilization to a statistically significant degree. Since 90% of respondents reported possession of health insurance, no correlation can be drawn from this skewed category.

Table 3. Reason for Last Eye Exam		
	N	Percent
Medical Complaints	23	28.0
Diabetes	5	
Eye health	1	
Eye Surgery	9	
Red or painful eye	4	
Visual disturbances	2	
Glaucoma	1	
Myokymia	1	
Visual Complaints	50	61.0
Work Required	6	
Blur	19	
Contact Lenses	2	
Glasses	23	
Prevention	5	6.1
Routine check	3	
Primary care provider recommendation	2	
Other	4	4.9
Had Insurance	1	
Daughter is an optometrist	1	
Forgot	2	
Overall	82	100

Of the 82 respondents who ever had an eye exam, 28% presented to their last exam with medical complaints, 61% presented with visual complaints and 6% presented for preventative reasons (Table 3). Of the 5 respondents who presented for preventative reasons, only 2 had an eye exam in the last year. Top reasons for no eye exam in the last year were “good vision” (76%) and “financial hardship” (20%). “Good vision” was the most common reason for non-utilization among the 18-44 age group (Figure 1).



While English proficiency did not correlate with utilization, it does correlate with age. 83% of those over age 65 reports their English proficiency as being “hardly any” or “a little bit,” compared to 59% of 45-64 year olds, 50% of 30-44 year olds and 0% of 18-29 year olds. **Figure 2** shows the distribution of English proficiency among different age groups. Respondents who rated their English as “fluent” or “enough to get by” were combined under the “adequate” category. “A little bit” and “hardly any” were combined under the “inadequate” category.

DISCUSSION

This pilot study was designed to determine the frequency of eye care utilization among Vietnamese-Americans. The following discussion will focus on the analysis, limitations, and implications of this study.

The 1997-2005 National Health Interview Survey found that the prevalence of eye care utilization, defined as having an eye exam within the last year, was lower for all minority groups, including Asians.¹³ The results of this study indicate that self-reported eye care utilization among Vietnamese Americans is slightly higher than that of the general population (45% vs. 35%).¹³ The authors suspect that their data was skewed by coverage bias and some respondent's broad definition of "eye exam". Both limitations will be discussed later.

Similar to the general population, advancing age, use of corrective lenses, and possession of vision insurance were positive predictors for eye care utilization among Vietnamese Americans.¹³ The hypothesis that English proficiency would positively correlate with utilization was nullified. Communication barriers undoubtedly makes scheduling, examination and patient education more difficult.¹² Even so, this pilot study suggests that other factors, such as the perception of eye health, may be a bigger barrier to utilization than language. Further research on English proficiency and eye care utilization among Vietnamese Americans and other Asian Americans groups are needed.

Most respondents get their eyes examined only when they have a visual or medical concern. Only 5 individuals reported that their last eye exam was for preventative reasons. Most people believed that if they had "good vision," they don't need an eye exam. This belief was even prevalent among people with vision insurance. "Good vision" was the reason why 17% of people who reportedly had vision insurance never had an eye exam. Sadly, this belief is also widespread in the general population.^{2,5,6,12,14} Public education on the value of preventative eye care is crucial to improving eye care utilization among all segments of the population. The public needs to

understand that their vision may still be “good” during the early stages of many diseases. If they wait until their vision is “bad,” it may be too late.

While eye care providers should be at the forefront in this education work, non-eye care providers should also have a role. Going back to the survey results, it is interesting to note that 2 respondents reported that “primary care provider recommendation” was the reason for their last eye exam. These patients valued their doctor's recommendation. Unfortunately, some participants in one eye care study reported that their doctors do not talk to them about their eyes.¹⁴ Providers who see diabetic patients are routinely inquiring about their patient's last dilated eye exam. While frequent eye examinations are paramount in the early detection and treatment of proliferative diabetic retinopathy, frequent exams will also aid in early detection and treatment of many other visually impairing diseases. Aside from the emotional and psychological tolls, visual impairment causes financial loss to the individual, their families, and society.^{1,2} It has also been reported that most causes visual impairments are preventable.¹² To maintain or improve their patient's quality of life and to prevent the complications and expense of visual impairment, primary care providers should inquire all patients about their last eye exam and recommend yearly examinations.

This pilot study has several limitations. The primary limitation is its small sample size. As a result, the confidence intervals for most of the demographic variables are exceedingly wide, making it difficult for any variable to attain statistical significance. But as a pilot study, it serves as a good starting point for future research on eye care utilization among Vietnamese Americans.

The potential for non-coverage bias is another limitation. Since phone numbers were obtained from the phone book, this study was unable to reach householders with no phone services, unlisted landlines, or wireless phones only. With more than 1/3 of the numbers dialed being disconnected, the authors postulate that, like the general population, many Vietnamese-Americans are also replacing their landlines with wireless phones.¹⁵⁻¹⁷ Compared to adults with landlines, adults with only wireless phones were more likely to report financial barriers to obtaining health care.¹⁵ Being unable to reach these households would certainly skew the results towards higher utilization. Landline health surveys, however, are still useful. Blumberg and Luke found that non-coverage bias can be decreased by controlling for demographic differences between households with landlines and the general population.¹⁷ For increased accuracy, future landline surveys on eye care utilization should be large enough to withstand demographic adjustments.

Being dependent on self-reported information makes recall bias an unavoidable risk. In addition to faulty recollection, misunderstanding of the questions asked is also problematic. Despite the careful wording of the utilization question, “How many years ago was your last eye exam with an optometrist or ophthalmologist?”, some respondents counted their last physical with their primary care provider as an eye exam. Even worse, a few counted the brief vision screening at the secretary of state as an eye exam. Fortunately, the follow-up question on “reason for last eye exam” helped the interviewer to identify these pseudo-eye exams. Once pseudo-eye exams were verified, survey responses were adjusted accordingly. It is possible that some pseudo-eye exams might have bypassed this check point. The fact that some respondents do not know what

constitutes an eye exam is a cause for concern. People are not going to get frequent eye exams if they don't even know what an eye exam is.

In conclusion, eye care barriers faced by some minority groups may not be all that different from those faced by the majority. While language barriers may be a hinderance for some minority groups,⁸ lack of knowledge about eye health appears to be the main eye care barrier for this group of Vietnamese Americans. Community education on eye diseases and the importance of preventative eye care helped a group of elder African Americans to be more receptive to routine eye exams.⁶ Regular eye exams allow for early detection and treatment of many visually impairing diseases. Future research should be devoted to finding an effective way to educate Vietnamese Americans on the value of preventative care. Meanwhile, eye care providers should actively educate their patients on the importance of routine eye care, be it through verbal communication or written materials in the patient's preferred language. Other health care providers can provide reinforcement by inquiring about the patient's ocular health and making appropriate recommendations. Educating patients on the importance of routine eye examination is worth the time and effort as it is in the best interest of the patient, their family and society.

REFERENCES

1. Rein DB, et al. The Economic Impact of Vision Problems: The Toll of Major Adult Disorders, Visual Impairment and Blindness on the U.S. Economy *Archives of Ophthalmology* December 2006.
2. Javitt JC. Preventing blindness in Americans: the need for eye health education. *Surv Ophthalmol* January 1995 40;41-44.
3. Sommer A, Tielsch JM., et al. Racial differences in the cause-specific prevalence of blindness in east Baltimore. *New England Journal of Medicine* November 1991 14; 325(20): 1412-7.
4. Elish NJ, Royak-Schaler R, et al. Knowledge, Attitudes, and Beliefs about Dilated Eye Examinations among African-Americans. *Investigation Ophthalmology Vision Science* May 2007 48: 1989–1994.
5. Owsley C, McGwin G Jr, Scilley K, et al. Perceived barriers to care and attitudes about vision and eye care: Focus groups with older African Americans and eye care providers. *Invest Ophthalmol Vis Sci* July 2006;47:2797–2802.
6. Owsley C, McGwin G Jr, Stalvey B, et al. Educating Older African Americans about the Preventative Importance of Routine Comprehensive Eye Care. *J Natl Med Assoc* September 2008 100:1089-1095.
7. Varma R, Ying-Lai M, et al. Prevalence and risk indicators of visual impairment and blindness in Latinos. The Los Angeles Latino Eye Study. *Ophthalmology* 2004 111: 1132–1140.
8. Morales L, Varma R, et al. Self-Reported Use of Eye Care among Latinos. *Ophthalmology* February 2010 117:207-215.
9. Fujimoto WY, Harris MI, et al. Diabetes in Asian and Pacific Islander Americans. In *Diabetes in America. National Institutes of Health* 1995 95 (1468) 661–681.

10. Selected Population Profile in the United States Population Group: Vietnamese alone Data Set: 2006 American Community Survey: American Community Survey <http://factfinder.census.gov>
11. Table FBP-1. Profile of Selected Demographic and Social Characteristics: 2000. People Born in Vietnam. [www. Census.gov](http://www.census.gov).
12. National Eye Institute. Identification of Variables that Influence the Receipt of Eye Care: Focus Group Report. <http://www.nei.nih.gov>. Accessed March 18, 2010.
13. Lee DJ, Lam BL, Arora S, et al. Reported Eye Care Utilization and Health Insurance Status Among US Adults. *Arch Ophthalmology* March 2009 127:303-310.
14. Alexander RL Jr., Miller NA, et al. Factors that Influence the Receipt of Eye Care. *Am J Health Behav* May 2008 32: 547-556.
15. Blumberg SJ, Luke JV. Wireless substitution: Early release of estimates from the National Health Interview Survey, January-June 2009. *National Center for Health Statistics* December 2009. Available from: <http://www.cdc.gov/nchs/nhis.htm>
16. Blumberg SJ, Luke IV, Cynamon ML. Telephone coverage and health survey estimates: evaluating the need for concern about wireless substitution. *Am J Public Health*. 2006;96:926-931.
17. Blumberg, Stephen J., and Luke, Julian V. Reevaluating the Need for Concern Regarding Noncoverage Bias in Landline Surveys. *American Journal Public Health* 2009 99 (10).

APPENDIX A

Consent Script

“Hello, my name is Anh La. I am a student from the Michigan College of Optometry. I am conducting telephone interviews in order to better understand the eye care needs of the Vietnamese community. This will take about ten minutes. Are you Vietnamese and at least 18 years old? -----(Listen to response. If household doesn't qualify, terminate the interview. If householder qualifies, continue.)----- . Would like to participate? -----(Listen to response)-----.

Before we begin, I want you to know that this study is being conducted under the supervision of Dr. Renee Mika OD, Associate Professor, at the Michigan College of Optometry at Ferris State University. If you have any questions or comments on the survey items or the way the interview is conducted please contact Dr. Mika at 231-591-2182 or Dr. Meinholdt, who is the chair of human subject committee at 231-591-2759. Your participation in this study is entirely voluntary. Your personal information will remain confidential. Your name will never be connected to your responses and your privacy will be protected to the maximum extent. Your participation is appreciated and this study has no potential risks. With your help, we will have a better understanding of the eye care needs of the Vietnamese community. Do you have any question before we begin?”

APPENDIX B

Survey Questions

1. How old are you?
 1. 18-29
 2. 30-44
 3. 45-64
 4. over 65
2. Are you male or female?
 1. Male
 2. Female
3. a. Where you born in America?
 1. Yes
 2. No

b. If no, how long have you lived in the US?

 1. Less than 3 years
 2. 3-5 years
 3. 5-10 years
 4. 10-20 years
 5. Over 20 years

4. How would you rate your English proficiency?
 1. Fluent like a native
 2. Enough to get by
 3. Little bit
 4. Hardly any

5. Do you have vision insurance?
 1. Yes
 2. No

6. Do you have medical insurance?
 1. Yes
 2. No

7. Do you wear contacts or glasses?
 1. Yes
 2. No

8. When was your last eye exam with an ophthalmologist, optometrist or eye doctor?

1. Within the last 12 months
2. Within the last 2 years
3. Within the last 3-5 years
4. More than 5 years ago
5. Never

9. (If householder has ever had an eye exam) Remembering back to your last eye exam, why did you go to the eye doctor? Please speak slowly, as I will be typing your response word-for-word.

10. (If last eye exam was more than a year ago) Why didn't you see an ophthalmologist, optometrist, or eye doctor in the last year? Please speak slowly, as I will be typing your response word-for-word.