

PATIENT AWARENESS OF CONTACT LENS MODALITIES AND THE VARIOUS
OPTIONS AVAILABLE

by

Ramon Yalldo and Robert Watters

This paper is submitted in partial fulfillment of the
requirements for the degree of

Doctor of Optometry

Ferris State University
Michigan College of Optometry

May, 2015

PATIENT AWARENESS OF CONTACT LENS MODALITIES AND OPTIONS

by

Ramon Yalldo
Robert Watters

Has been approved

May 2015

APPROVED:



Faculty Advisor

ACCEPTED:



Faculty Chair

Ferris State University
Doctor of Optometry Senior Paper
Library Approval and Release

PATIENT AWARENESS OF CONTACT LENS MODALITIES AND OPTIONS

We, Ramon Yalldo and Robert Watters, 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

5/1/14

Date

Doctoral Candidate

5/1/14

Date

ABSTRACT

Background: As the contact lens industry continues to grow and change, practitioners need to find ways to adequately educate patients on these advancements. This study explored the level of contact lens knowledge amongst patients of all ages and backgrounds. This information will help establish a baseline for awareness and allow practitioners to develop new strategies to implement in order to improve patient contact lens awareness. *Methods:* 165 primary care and contact lens patients were presented with an optional survey prior to their scheduled ocular exam. The population consisted of patients from and around the cities of Detroit, West Bloomfield, and Big Rapids, Michigan. The data was collected from August 2014 through February 2015. The data was analyzed with regards to age, gender, and current vision correction modality. *Results:* 150 surveys completed by patients were analyzed. 86% of the patients had some form of correction, with the majority being glasses at 54% and contact lenses at 35.3%. 16.7% of the patients had not heard of any of the types of contact lens options and modalities listed. Soft contact lenses were the most commonly recognized option/modality at 76%. 56.7% of the patients had previously discussed contact lenses with their eye care provider. 5.3% of the patients were previously told that they could not wear contact lenses. 59.3% of patients felt they had an adequate understanding of contact lenses and the various options available. Finally, 93.3% of the patients would consider contact lenses if their eye care practitioner felt it were the best option for them.

Conclusions: The focus of this project was to establish a baseline of patient knowledge pertaining to contact lenses and the various options and modalities associated with them. This information was used to determine whether or not more patient education should be integrated into contact lens exams/primary care exams.

TABLE OF CONTENTS

		Page
CHAPTER		
1	INTRODUCTION.....	1
2	METHODS.....	3
3	RESULTS.....	5
4	DISCUSSION.....	7
APPENDIX		
A.	IRB APPROVAL LETTER.....	12
B.	CONTACT LENS AWARENESS SURVEY.....	14

CHAPTER 1

INTRODUCTION OF CONTACT LENSES AND PUBLIC AWARENESS

The ability to see the world clearly is a very important factor in determining the quality of life of people. There are approximately 153 million people in the world that have uncorrected refractive errors that result in visual acuities less than 20/60.¹ The value that people put into clear vision is remarkable. In fact, one 2007 study, determined that people with 20/30-20/50 visual acuity were willing to give up 19% of their estimated lifetime to have normal vision, while blind people were willing to give back a staggering 60% of their lifetime.² Thus, showing the ultimate importance that people put behind clear, normal vision.

The world of eye care and vision correction is constantly changing. Not only are there many different types of vision correction, such as spectacles, refractive surgery, and contact lenses, but also each type of correction is highly specialized and specific. There are many types of contact lenses, including lenses to help limit the progression of myopia, correcting vision in keratoconic patients and other irregular corneas, combating dry eyes, multifocal correction for presbyopes, sports-specific correction, etc. However, with all the different contact lens modalities available, there is still a large disconnect between patients and providers as to what options might work best for the patient. In

study performed to look at the awareness and attitude toward refractive error correction, 80.3% of patients had no prior knowledge of the possible use of contact lenses in place of spectacle lenses. They also later found that 23% of the spectacle wearing participants were interested in trying contact lenses once they were properly explained¹ This lack of contact lens awareness is a disservice to the patient and the doctor. The patients have the right to know all of their vision correction options, while the doctor has the duty to provide the best care possible to their patients. It is the eye care practitioner's duty to try and determine the level of need for contact lens use and help reassure the patient of this mode of vision correction. In a study examining the factors for choosing refractive surgery over contact lenses, inconvenience, over-wear of lenses, and dry eyes were the main reasons for choosing refractive surgery over contact lenses at 79%, 22%, and 20% respectively.³ These are all factors that practitioners need to be aware of and should try to help minimize, in order to keep contact lens patients happy once they do begin using them as their main vision correction method.

In order to encourage a greater general knowledge of contact lenses and the different options, a study was developed to help determine an initial awareness of contact lenses and the amount of background information that patients have regarding what is possible for their visual correction needs. This paper highlights who is aware of contact lenses, and to what extent they have been educated into the specifics of contact lenses. It also helps to provide a future outlook into improving patient education and awareness of contact lenses, in order to provide the best possible eye care to patients.

CHAPTER 2

METHODS

A contact lens awareness survey and study was developed in order to look at the dynamics of contact lens awareness among patients. The information obtained will be used to develop future strategies to better inform patients about their potential contact lens options. The survey did not collect any patient identifying information and thus will be anonymous.

The contact lens survey was developed by Robert Watters and Ramon Yalldo in order to fulfill requirements of the Michigan College of Optometry Senior Project. Dr. Lotoczky, a professor at the Michigan College of Optometry at Ferris State University, provided guidance as the project advisor. 165 primary care and contact lens patients were presented with an optional survey prior to their scheduled exam (See Appendix B). Ramon Yalldo, and participating 2nd and 3rd year optometry students, verbally informed every potential participant that the survey is completely anonymous and a voluntary survey; with this information also found in the opening paragraph at the top of the survey. The population consisted of patients from the cities of Detroit, West Bloomfield, and Big Rapids, Michigan. The location in Detroit was the Kresge Eye Institute and was approved

by Dr. Elizabeth Yates. The location in West Bloomfield was Henry Ford Optimeyes and was approved by Dr. Robert Finlay. The location in Big Rapids was at the University Eye Center at the Michigan College of Optometry, and was distributed by 2nd and 3rd year optometry students with the approval of Dr. Lotoczky. The data was collected from August 2014 through February 2015.

Surveys began with a brief discussion of the survey's goals, patient anonymity reassurance, and explained how the information would be used. The patient was then asked to specify their gender and check their appropriate age range. Following, were eight questions with the first two asking about current vision correction and past experience with different modalities of contact lens corrections. The third question was whether or not their eye care practitioner has discussed contact lenses in the past. Questions four and five related to if the patient had been told they could not wear contact lenses, and the reason for being told that. Questions six and seven asked whether the patient felt they have an adequate understanding of the various contact lenses options available, and if they had an interest in knowing more about contact lenses. Lastly, the patient was asked if they would consider trying contact lenses if they were recommended by their eye care practitioner as a good vision correction option. Data was then analyzed with regards to age, gender, and current vision correction modality and used to determine better approaches to contact lens patient awareness.

CHAPTER 3

RESULTS

Of the 150 surveys that were analyzed, 62% were completed by females and 38% by males. The age groups were broken down into ranges of decades. The age group that participated the most in this survey was the 18-30 group, encompassing 34.7% of the surveys. The 30-40 age group accounted for 12.7% of the participants. The 40-50 age group made up 14.7% of the patients. The 50-60 age group was the second largest with 16.7%. The 60-70 age group included 14.7% of the patients. The 70+ age group made up just 6% of the participants. 1 patient did not list their age.

Only 14% of the patients were uncorrected. The other 86% had some form of correction, with the majority being glasses at 54%. 35.3% of the patients were contact lens wearers. Of the contact lens wearing participants, 67.9% identified themselves as soft contact lens wearers and only 11.3% as gas permeable wearers. Only 1 patient used scleral lenses for vision correction. 5.3% of the patients reported that they had reading glasses.

16.7% of the patients had not heard of any of the various types of contact lens options and modalities listed. 76% of the patients had at least heard of soft contact lenses, which was the most commonly known option among the patients. The second most

commonly identified option was daily wear lenses, with 56% recognition. The next highest were extended wear lenses (41.3%), astigmatism correcting lenses (36%), cosmetic lenses (34.7%), and gas permeable lenses (32%). Less than a quarter of the participants recognized multifocal lenses (22%), monovision lenses (22%), and sports lenses (16%). Finally, the least recognized options were keratoconus corrective lenses (5.3%), orthokeratology lenses (2.7%), and scleral lenses (2%).

Only 56.7% of the patients had previously discussed contact lenses with their eye care provider. 42.7% of the patients had not previously discussed contact lenses with their eye care practitioner. However, 35.2% of the patients that reported no were new patients. 1 participant did not report whether or not their eye care practitioner had previously discussed contact lenses with them. Only 5.3% of the patients were told that they could not wear contact lenses. From these individuals, 3 of them were told this because of dry eye, 2 because of astigmatism, 1 due to allergies, 1 because of keratoconus, 1 due to poor insertion and removal, and 1 because of noncompliance.

59.3% of patients felt they had an adequate understanding of contact lenses and the various options available. 44.7% of the participants wanted to know more information about contact lenses and the various options available. Finally, 93.3% of the patients would consider contact lenses if their eye care practitioner felt it were the best option for them.

CHAPTER 4

DISCUSSION

Of the 165 patients that participated, 150 surveys were analyzed, due to 15 of the surveys not being properly completed; most likely due to not being aware of the continued survey on the back of the handout. There was a good distribution of participant age ranges among the various groupings by decade. It was not unexpected to see the largest response was from the 18-30 age group considering one third of the surveys were from the Big Rapids office, located within Ferris State University.

It was expected that glasses would be the most common form of visual correction, but it was interesting to see that glasses corrected only 60.4% of the patients who had correction. It was also predictable that soft contact lenses would be the most common form of contact lens correction among the patients, as they tend to be the most popular type of contact lenses prescribed. It was, however, interesting that given the large number of patients that were at least 40 years old, so few had a pair of reading glasses. This begs the question of the type of spectacle lenses these patients were using, such as bifocals, trifocals, progressive lenses, etc.

Even though 12.7% of the patients were new, it was still surprising to see that 16.7% of the patients had not heard of any of the various types of contact lens options

and modalities listed in the survey. Part of this disappointment may stem from the fact that optometry students conducted this project, and expect more from the patient population. While it was encouraging to see that three quarters of the participants had at least heard of soft contact lenses, it was disappointing to see how few recognized the other options and modalities. These various contact lens options and modalities offer a wide array of uses and benefits. It is incumbent upon eye care practitioners to educate their patients on this vast assortment of options available to patients in the contact lens industry.

The fact that a large number of participants were at least 40 years old, but so few recognized multifocal and monovision lenses, is unacceptable. There is a large population of patients that aren't being treated at the level that they deserve to be treated. While it is not of surprise that keratoconus corrective lenses, scleral lenses, and orthokeratology lenses are the least recognized, these specialty lenses are incredibly valuable and appreciated by the patients that have used them. Therefore, it is important to emphasize that these patients are not adequately educated and the onus falls on the eye care providers to properly educate their patients.

It can be misleading when seeing that only 56.7% of the participating patients had previously discussed contact lenses with their eye care provider. However, when taking into account the number of new patients, 65.4% of the patients that had previous eye exams had also discussed contact lenses with their eye care provider. While this makes the number more respectable, nearly half (44.7%) of the patients wanted more information about contact lenses, which means that their eye care providers are failing in

providing them with the knowledge they seek.

It was encouraging to see that a very small portion (5.3%) of the participants had previously been told that they could not wear contact lenses. Of the various reasoning given, dry eye, allergies, poor insertion and removal, and noncompliance are reasons that most likely hold merit in why their eye care provider told them they are not contact lens candidates. However, when astigmatism and keratoconus are mentioned as reasons, they offer more questions. It is hard to take this information at face value, without being a part of the conversations that actually took place between the patients and their providers.

Rather than rely on the word of the patient, it is best to conduct a thorough examination, including case history, to determine whether or not a patient is a contact lens candidate. More than likely, a vast majority of the patients will be candidates who simply require good education and conversation with their eye care provider. It was also encouraging to see that a vast majority (93.3%) of the patients would consider contact lenses if their eye care provider felt it was the best option for them. This speaks to the respect that the patients have for the opinion of their eye care provider.

Reflecting on the survey, it would probably have been beneficial to include whether or not patients had undergone some type of refractive surgery prior to the exam. It would also have been wise to note on the front that there was a back side to the survey. Finally, a comments section for the patients to include their thoughts on the survey and any questions sparked by the survey would also have been a good addition to the survey.

The results of this study offer a revealing look into the dynamics of the patient perspective. It provides an outlook as to what they may or may not know when it comes

to their vision correction. Many people hold a high value in their doctor's opinion and trust the doctor to make the most appropriate decision in their health care. It is obvious that many people are aware of contact lenses, however, the scope of that awareness is very superficial. It is the eye care practitioner's job to know all of the possibilities that are out there in the industry, and to decide which can help their patients achieve the best vision possible. In the future, more research should be performed to begin developing more efficient and encompassing ways to educate all patients on the possible vision correction modalities that would best fit their visual/pathological needs. As this study shows, an overwhelming majority of patients are willing to try contact lenses if their practitioner recommends them, it is up to the doctor to spark the conversation and ensure patient awareness.

REFERENCES

1. Saber Moghaddam Ranjbar AK, Pourmazar R, Gohary I. Awareness and attitude toward refractive error correction methods: a population based study in Mashhad. *Patient Saf Qual Improv.* 2013; 1(1): 23-29.
2. Knauer C, Pfeiffer N. The Value of Vision. *Graefes Arch Clin Exp Ophthalmol.* 2008; 246(4): 477-482.
3. Gupta N, Naroo, SA. Factors influencing patient choice of refractive surgery or contact lenses and choice of centre. *Cont Lens Anterior Eye* 2006; 29: 17-23.

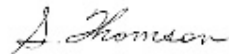
APPENDIX A
IRB APPROVAL FORM

To: Dr. Josh Lotoczky, Ramon Yalldo and Robert Watters
From: Dr. Stephanie Thomson, IRB Chair
Re: IRB Application #140704 (Title: *Patient Awareness of Contact Lens Modalities and Options*)
Date: August 29, 2014

The Ferris State University Institutional Review Board (IRB) has reviewed your application for using human subjects in the study, "*Patient Awareness of Contact Lens Modalities and Options*" (#140704) and determined that it meets Federal Regulations *Exempt-1C*. This approval has an expiration date of three years from the date of this letter. **As such, you may collect data according to the procedures outlined in your application until August 29, 2017.** 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 protocol has been assigned a project number (#140704), which you should refer to in future correspondence involving this same research procedure.

We also wish to inform researchers that the IRB requires annual 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 note the continuation of this project or to complete the final report. 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

CONTACT LENS AWARENESS SURVEY

MICHIGAN COLLEGE OF OPTOMETRY - CONTACT LENSES AWARENESS STUDY

Please take a moment to share your experience with contact lenses. This survey is completely voluntary and will not affect your future eye care service. No personal/identifying information is being collected; therefore your participation is anonymous. The results will be collected and analyzed as a Michigan College of Optometry student senior project. The information obtained will be analyzed with the goal of understanding and developing the doctor- patient relationship, with a focus on contact lens awareness. Thank you for your participation.

CHECK ALL THAT APPLY:

SEX:

- Male Female

AGE:

- 18-30 30-40 40-50
 50-60 60-70 70+

1. CURRENT VISION CORRECTION:

- Glasses Contact Lenses
(Type: _____)
 Uncorrected Reading Glasses Only

2. HAVE YOU HEARD OF, OR HAVE EXPERIENCE WITH, ANY OF THE FOLLOWING CONTACT LENS MODALITIES?

- Soft Lenses Gas Permeable
 Orthokeratology Lenses (Ortho-K)
 Multifocal Lenses Scleral Lenses Daily Wear Lenses
 Monovision Lenses Sports Lenses Extended Wear Lenses
 Keratoconus Corrective Lenses Astigmatism Correcting Lenses
 Cosmetic Lenses

3. HAS YOUR EYE CARE PRACTITIONER EVER DISCUSSED CONTACT LENSES WITH YOU?

- Yes No No, I am a new patient

4. HAVE YOU EVER BEEN TOLD THAT YOU CANNOT WEAR CONTACT LENSES?

- Yes No

5. IF YES TO THE PREVIOUS QUESTION, WHAT WAS THE REASON FOR NOT BEING A GOOD CANDIDATE FOR CONTACT LENSES?

- Age Dry Eye Ocular Disease
 Astigmatism
 High Prescription Allergies Unsure Cost
 Other _____

6. DO YOU FEEL LIKE YOU HAVE AN ADEQUATE UNDERSTANDING OF CONTACT LENSES AND THE VARIOUS OPTIONS AVAILABLE?

- Yes No

7. DO YOU HAVE AN INTEREST IN KNOWING MORE ABOUT THE POSSIBLE CONTACT LENS OPTIONS FOR YOU?

- Yes No

8. WOULD YOU CONSIDER TRYING CONTACT LENSES IF YOUR EYE CARE PRACTITIONER FELT IT WAS THE BEST CHOICE FOR YOUR VISION CORRECTION?

- Yes No

Thank you for your time and participation.