

# Spectacle Dispensing, A Study On The Perception Of Educated Population

**Dr. Sai Monisha Jammula**  
Department of Ophthalmology  
Sri Devaraj Urs Medical College  
Kolar, Karnataka, India  
[monisha263@yahoo.com](mailto:monisha263@yahoo.com)

**Dr. Sandhya Ramachandra**  
Department of Ophthalmology  
Sri Devaraj Urs Medical College  
Kolar, Karnataka, India  
[sanchina@rediffmail.com](mailto:sanchina@rediffmail.com)

**Abstract—Purpose:** To assess the preferred mode of dispensing spectacles by the sample population and to analyze the reasons and knowledge for the preferred choice.

**Methods:** This was a cross-sectional semi self-constructed questionnaire-based study. The participants were given a questionnaire, which consisted of the queries regarding awareness, knowledge and source of information regarding spectacle dispensing. The responses were analyzed for each category of questions.

**Results:** 75.78 % (288 of 380) people responded that they got their eye checkup & spectacle prescription from an eye specialist. Majority (37.6%) making the choice due to guidance from friends and family. 60.8 % of the study subjects underwent reexamination with the new spectacles before dispensing by the optician.

**Conclusion:** This study was done to assess the awareness among the educated population regarding the process of scientific refractive correction & resultant subjective satisfaction. Each step of the process of obtaining a good vision – from choosing an eye specialist, to selecting customized lenses, to choosing the right frame, getting adapted to it and having satisfactory vision plays a crucial role. Attention to details at every step of spectacle dispensing is important as it involves precise scientific & technical detailing. It is essential to create awareness among the patients towards the entire process, as it can help in preventing dispensing errors and improving compliance.

**Keywords—***spectacle dispensing, awareness, knowledge, educated population, dispensing errors.*

## **INTRODUCTION:**

Refractive errors are the most common ocular problem affecting all age groups. WHO reports indicate that refractive errors are the leading cause of visual impairment and the second cause of visual loss worldwide as 43% of visual impairments are attributed to refractive errors<sup>1</sup>. Spectacle correction is the simplest, widely accepted and easily available treatment compared to other options like contact lenses or refractive surgeries, thus making spectacle

dispensing a blooming industry involved with ophthalmology services.

Dispensing errors lead to waste of time, resources and money. Most importantly can seriously compromise the vision of the beholder, affect the quality of life & work. These can be avoided by quality checks at all stages of the spectacle dispensing process. A study has shown that dispensing errors were found in some spectacles on rechecking and when refined by the optometrist resulted in a significant decrease in the frequencies of incorrect spectacles and dispensing errors in sphero-cylinder lenses<sup>2</sup>.

Spectacles are a mainstay of treatment in amblyopia and may include prisms in them. The power, axis and alignment of cylindrical and prismatic lenses must be accurate. Or else, there may be worsening of vision and amblyopia may become denser. Also, as the correction is mostly objective in children without subjective confirmation, scientific dispensing of spectacles in children & those with strabismus is extremely important for the management of the condition. Spectacle intolerance & non-compliance to wearing schedules have been found to be the commonest cause of treatment failure<sup>3</sup>.

In India, majority of the opticians do not have personnel certified in spectacle dispensing. Most of the personnel employed for this job have learnt spectacle dispensing just from their seniors most of whom also do not have any certified training. There is a dire need for training and regulation of opticians' practice in spectacle dispensing.

The public's knowledge of differences between ophthalmologists and optometrists was found to be poor in many studies<sup>4</sup>.

In developing country like India, on-the-spot dispensing of spectacles at the campsite ensures uptake and use of spectacles. Often 15-25 per cent of the patients at a camp conducted in rural area will require spectacles and the lens inventory stock must be planned accordingly and at affordable prices<sup>5</sup>.

Due to the commercialization & increasing need of spectacles, there has been an explosive increase in spectacle dispensers. The increasing quantity may not be on par with improved or even expected quality. The

quality of visual rehabilitation provided by the spectacles has not been scientifically documented in the form of a structured study and this is an attempt to do so.

The difference in the use of customized and readymade spectacle on a large scale also has to be understood in order to see which is compatible with the situation of the community on a whole.

The proper knowledge of patients in choosing spectacle dispensing authorities can lead to visual impairment. At the same time there is a requirement in India to promote authentic spectacle dispensers at a large scale which are cost effective to outreach the enormous population. So understanding the perspective of the patients and developing a clear view of what is wanted, why the choices are made and what can be modified to provide a good outcome finally has to be streamlined.

#### **AIM:**

To assess the preference of dispensing mode of spectacle by the population and also the knowledge and reasons behind the choice made.

#### **MATERIALS AND METHODS:**

Cross sectional observational study done in a period of 2 weeks

#### **Inclusion criteria:**

Men & women , Age between 18 to 60

Education above 10<sup>th</sup> standard,

Only those who can read, write and understand English

Students and employed persons residing in Kolar district.

#### **Exclusion criteria:**

Unwillingness to participate in the study

Doctors and medical students

#### **METHODOLOGY :**

Our study included educated adults who were willing to take part in the study age group between 18 and 60. Based on prevalence of awareness on approaching an ophthalmologist for spectacle dispensing or general consultation in a study done by Roy Wilson with absolute error of 5 percent , sample size is estimated as 380. A pre tested semi self-constructed questionnaire was used to assess the knowledge, awareness and source of information. The questionnaire is structured based on the previous related publications. Consent for participation was taken at the beginning of the questionnaire and clearly indicated that the information would be used for research purposes only. The questionnaire was in English.

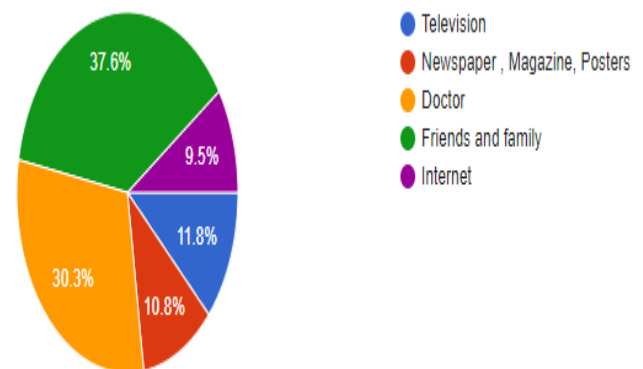
#### **Results**

380 subjects volunteered to participate the study: most of them were with educational background of basic under graduation in engineering, commerce, arts & nursing. Many were around the age of 30 years, with a wide range of 18. Pertaining to the place of getting the spectacle prescription, 75.78 %

(288 of 380) people responded that they got their eye checkup & spectacle prescription from an eye specialist .

Choice	Percent	Count
Eye specialist	75.78	288
Spectacle shop (optometrist )	19.47	74
General practitioner	3.16	12
Online consultation	1.58	6

The choice of obtaining the spectacles was made based on the recommendations of friends/ family , family doctor/ general practitioner, newspaper - magazine - posters, television.

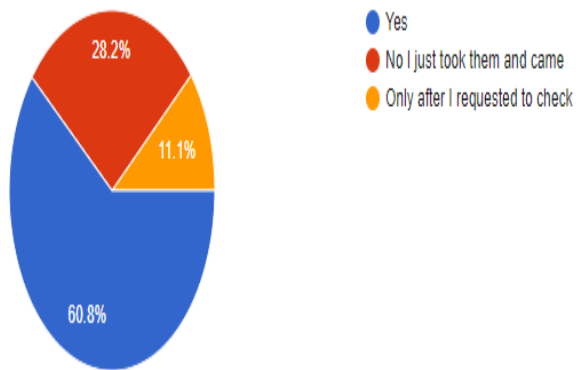


The majority (37.6%) making the choice due to guidance from friends and family and followed by doctors(30.3%),Television (11.8 %), Newspaper-Magazine-posters (10.8%) followed by internet ( 9.5%).

For the query as to whether or not the occupational visual requirement was considered before giving the correction, 299 of the 380 participants recalled being asked about their job before they got their spectacles. 78.68 % (299 out of 380) think that it's necessary to take the job in to consideration which is significant compared to the 21.58 % who didn't think so.

43.16 % of the study subjects selection of the frame was based mainly upon the appearance as decided by the shape and colour. 6.05% made the choice by viewing the online photos. 39.47% received help from the dispensing authority in selection of the frame after few measurements were taken .11.32 % of the study group believe it not necessary to think about the frame size .

60.8 % of the study subjects underwent reexamination with the new spectacles before dispensing by the optician .11.1 % were examined only on request. 28.2% of the study subjects obtained the spectacles without reexamination.



84.7 % of the study group were satisfied with their spectacles .15.3% were not happy with the spectacles.

Out of the study population who were not happy with new spectacles 37.2 percent quit using the spectacles and 62.8 % went back to the eye specialist for correction.

### **Discussion**

Spectacle prescription and dispensing is very important in the treatment of uncorrected refractive errors. The awareness & knowledge regarding the choice of their health care facility among the patients is a significant determinant of the quality and effectiveness of the treatment.

In a study done by Wilson Et al. only 34.2 percent of the study group knew the difference between an ophthalmologist and an optometrist and that only ophthalmologist went to medical school and is trained to treat the eye problems .Out of the people who knew the difference most of them had previously had an ophthalmological examination, or who have taken spectacles or contact lenses <sup>4</sup>.

This study done in Kolar, representing rural Karnataka, among 380 participants 70.53 i.e., 268 got their eye checkup from an eye specialist showing that the educational background on a major basis has helped to take an appropriate choice for health care. Although there are no studies to link the choice of spectacle prescription with educational status, a relatable study on self medication for ophthalmic use by Gabriel et al found no significant association with education <sup>6</sup>.

Their choice was influenced the friends & family circle and doctor implicating that social media , television can be used as more effective platforms to promote rational choice & decision making among people in rural areas thus encouraging people to opt for a specialist for precise spectacle correction .Media plays a vital role in health care in marketing the facilities available for the patients , employment and indirectly in research also <sup>7</sup>.

In the study group 299 participants were given customized spectacles according to their specific needs .The specific needs of spectacle types like anti reflection and anti- scratch coatings depend upon age , visual needs & the type of refractive error <sup>8</sup>.

In this study only 39.4 percent of the population got their frames selected with the help of a measurements done before preparing spectacles which could be the reason for dissatisfaction among the study group .In a study done by Jonathan in a large population it was found that in case of presbyopes residing at a particular geographic area IPD can be taken on an average to prescribe readymade spectacles <sup>9</sup>.But in cases of myopia and astigmatism inter pupillary measurement if taken wrong will cause fatigue and headache .

In our study approximately 16 percent of the population were unsatisfied with failure to actually verify correction after getting the spectacle due to oversight or lack of information / time. In a study by Mohan Et al. it was found that in non tolerant cases the error made in dispensing was in the spherical element and the cylinder axis of spherocylinders <sup>2</sup>.

### **Conclusion**

This study was done to assess the awareness among the educated population regarding the process of scientific refractive correction & resultant subjective satisfaction. In a nutshell, it assesses the acceptance of prescribed correction & improvement in symptoms thus improving the quality of life. Each step of the process of obtaining a good vision – from choosing an eye specialist, to selecting customized lenses, to choosing the right frame , getting adapted to it and having satisfactory vision plays a crucial role. A small deviation and error in any of these steps can be annoying and even dangerous. For example, a wrong cylindrical correction or a wrong fit of the bifocal lenses can trigger a fall that can have far reaching consequences. Headaches resulting from faulty prescription or fit can result in non-compliance and failure of treatment. Also, the time, efforts, money spent on making the spectacles may be in vain and a demotivating factor for further such interactions. Attention to details at every step of spectacle dispensing is important as it involves precise scientific & technical detailing. It is essential to create awareness among the patients towards the entire process, as it can help in preventing dispensing errors and improving compliance.

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