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A study of awareness of presbyopia among rural female population in Northwest Madhya Pradesh, India

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Abstract

Background: Presbyopia is an inability to focus at near distance as a result of loss of accommodation with age. With age, presbyopia eventually affects everyone but is generally measured and diagnosed only when an individual becomes symptomatic and presents to an eye care provider with need for near-vision correction. In clinical practice, presbyopia is diagnosed by measurements of accommodative amplitude, near subjective refraction, and/or patient's reported symptoms.

Objectives: To determine the awareness of presbyopia in rural females; also, to determine the knowledge levels regarding presbyopia, spectacle coverage and reasons for not wearing spectacles.

Methodology: A hospital based cross-sectional study was conducted at Govt Medical College Ratlam Madhya Pradesh India, on 500 female subjects of age group 35 years and above coming from rural area (around Ratlam MP).Written informed consent was obtained from each patient in their local language. A questionnaire was used to capture all demographic data and assessment findings.

Result: In this study, 500 female subjects were examined. More than one third of subjects were in the age group of 40-44 years and 45-49 years, each with 187 subjects (37.3%) and 180 subjects (36%) respectively. Level of literacy among the study subjects showed that illiterates constituted 247(49.5%) whereas literates constituted 253(50.5%) of vision.Near vision was diminished in 68.4% (342) subjects while both near vision and distant vision were impaired in 13.6% (68) subjects. Remaining 90 subjects were emmetropic.

Conclusion: From our study we would be like to conclude that Prevalence of presbyopia is high among rural females. In our study population, literacy was not found to be associated with the awareness of presbyopia (p=0.46) Most of the women do not wear spectacles because of poor quality glasses and difficulty in maintaining spectacles while working.

Keywords: Presbyopia, near vision, Reading glasses, Visual acuity

Introduction

Presbyopia is a progressive optical condition where the ability to focus on near objects gradually decreases as part of the natural aging process. Presbyopia tends to manifest itself around the age of 40 to 45 years of age. Its improper correction will compromise a person's work performance with the economic loss too[1]. It has also been described as "an irreversible optical failure, an unexplained evolutionary blunder that comes as a psychological shock[2].

Presbyopia (literally, an old eye) is the most common ocular problem worldwide. Presbyopia is defined as progressive decrease in the accommodative amplitude leading to discomfort and difficulty for near work [3]. It is due to the progressive decrease in the accommodative amplitude [4].

The changes in accommodation are related to changes in the ciliary muscles, lens, and its capsule and/or changes in the vitreous. The onset of presbyopia varies between 40 and 45 years of age however, some individual and geographic variations are present [5,6]. Women from rural area are more likely to report difficulty with near tasks than men because they are more occupied with near work such as sewing and cleaning grains. Symptoms of presbyopia are characterized by complaints of requiring more light to read, difficulty in reading fine print of newspaper and eyes taking too long to focus at near point. Uncorrected near vision will have negative impact on activities of daily living like reading newspaper, seeing mobile numbers and also upon self-esteem [7,8]

Material & Methodology

This Prospective study will be conducted at Department of Ophthalmology, Govt Medical College Madhya Pradesh, India.

Study duration: 3 Month, from 01/08/2020 to 31/10/2020

No of patient included in study: 500

Inclusion Criteria: We included all the females >35 years of age, coming from rural area (around Ratlam MP), who attended Ophthalmology OPD.

Exclusion Criteria: We excluded subjects with best corrected visual acuity less than 20/40 due to cataract or other causes.

A hospital based cross-sectional study will be conducted at Govt Medical College Ratlam Madhya Pradesh India, on 500 female subjects of age group 35 years and above coming from rural area (around Ratlam MP).

Written informed consent was obtained from each patient in their local language.

A questionnaire will be used to capture all demographic data and assessment findings [Table/Fig-1]. They will be examined and open-ended questionnaire will be used to record subject's awareness and knowledge about presbyopia and their responses will be analysed.

Ocular examination included measurement of Best Corrected Visual Acuity (BCVA) for distant vision with Snellen's charts or illiterate E chart at 6 m in a well-lit room. Refraction will be done on all subjects who presented with a visual acuity worse than 6/6 in either eye. Objective refraction will be performed with a streak retinoscopy and further refined with subjective

refraction. Near vision will be assessed in all subjects using a Snellen's near vision chart or illiterate E near chart at working distance of 33 cm after correcting their distance vision. Each person who could not read N8 vision after best distance correction will be checked for improvement by adding appropriate increments.

Slit lamp examination of anterior segment and posterior segment, pupillary reaction and Intraocular Pressures (IOP) will be performed in all study subjects and was within normal limits in all the subjects.

Demographic details and literacy levels of all the subjects will be obtained.

Social parameters related to presbyopia like age group, literacy was described in terms of rates and ratios. Refractive status will be similarly described. Various symptoms of presbyopia were elucidated and tabulated according to responses and enumerated in terms of rates and percentages. Same questions changed into attitude and practice and the responses will be classified according to questionnaire, elicitation of KAP.

Name : age:
Place:
Level of literacy: primary/middle/high/pre-university
University
House hold income: <10,000 /10,000-25000/>25000

Visual Acuity:

Refraction:

Questionnaire :

Are you having difficulty in?
Reading news print [ ] Seeing small objects in food [ ]
Cleaning the grains [ ] Threading the needle [ ]
Headache [ ] Other household work [ ]
Recognising the denomination of coins [ ]

Ashamed/distressed/embarrassed with your problem

Have you heard of near vision loss – [ ]
Duration between onset of symptom and first consultation?-
Why people may lose their near vision after 35 years?
Cataract /nerve problem/glaucoma /age related/ curse from god/ don't know
What treatment do you think will correct near vision loss?
Glasses/ surgery/ tablets/drops/not correctable/
Don't know
Reason for not using glasses?
Lack of awareness/felt ashamed to wear/ lack of
felt need /not affordable/difficult to access/lack of compliance/ difficult to maintain while working/image distortion while walking/ headache/lack of accompanying person/laziness
How often have you been following up with ophthalmologist after you were once diagnosed as having near vision problem?
As and when required /not necessary/once in a year/every month

Table 1: Questionnaire used for demographic data and assessment findings

Results

In this study, 500 female subjects were examined. [Table 2] shows the demographic characteristics of the subjects. More than one third of subjects were in the age group of 40-44 years and 45-49 years, each with 187 subjects (37.3%) and 180 subjects (36%) respectively.

The remaining age groups were 35-39, 50-54, 55-59 and 60-69 years, constitute 2.2%, 12.70%, 9.2%, and 2.5% cases respectively

Age Group(yr)	Number	Percentage (%)
35-40	11	2.2
40-45	187	37.3
45-50	180	36
50-55	64	12.7
60-65	46	9.2
65-70	12	2.5

Table 2: Age wise distribution of study subjects

Literacy status	Number	Percentage
Illiterate	247	49.5
Primary school	58	11.5
Middle school	71	14.2
High school	77	15.5
Pre university	40	7.9
University	07	1.4

Table 3: Education wise distribution of study subjects

Level of literacy among the study subjects showed that illiterates constituted 247(49.5%) whereas literates constituted 253(50.5%) of vision. (Table 3)

Near vision was diminished in 68.4% (342) subjects while both near vision and distant vision were impaired in 13.6% (68) subjects. Remaining 90 subjects were emmetropic [Table 4].

Visual acuity	Number	Percentage
Normal distance and near vision	90	18
Reduced near and distant vision	68	13.6
Near vision, N8	342	68.4

Table 4: Refractory status wise distribution of study subjects

Questions	Response		
	Yes	No	Sometimes
Reading news print	246 (49.2%)	215(43%)	38(7.7%)
Small font in mobile	302(60.4%)	153(30.6%)	45(9%)
Cleaning the grains	285(87%)	125(25%)	90(18%)
Threading the needle	345(69%)	115(23.1%)	39(7.9%)
Recognizing the denomination of coins	122(24.5%)	302(60.5%)	75(15%)
Head ache	165(33%)	159(31.8%)	176(35.2%)
Other household work	159(31.8%)	245(49.1%)	95(19.1%)
Distressed/embarrassed with your problem	120(24.2%)	318(63.7%)	62(12.1%)

Table 5: Response of the questionnaire eliciting response symptoms of presbyopia

Discussion

Prevalence of presbyopia in our study is 82% which is higher than in African study by (63.4%) Patel IP et al., and Marmamula S et al., (63.7%) [9]. The higher prevalence may be attributed to the fact that our cohorts

are from tertiary eye care hospital unlike the other two studies which were examined in the community.

Presentation of presbyopia is higher in 40-50 years age group, which is comparable to other studies like Andhra Pradesh Eye disease study and African studies [10].

In rural female population, presbyopia affects near work like sewing, picking rice and winnowing grain. Presently in rural areas there is an increase in use of mobiles. According to recent studies, presbyopia affects women more than men, both in prevalence and severity due to the differences in tasks performed and viewing distances [11]

Similar studies conducted at Ghana [12], Zanzibar [13] and Indonesia [14] among high school teachers. In their study, the major barriers for the use of glasses were poor quality of glasses [15], cost of spectacles and perception that their vision was normal. The barriers that contributed to not wearing spectacles were mainly due to lack of awareness and the modality of correction in the form of glasses as reported by Ramke J et al., from Timor Leste [16], In our study, the major reason for not wearing spectacles was difficulty in maintaining glasses while working which is similar to a study done at Timor-Leste In other studies (African and Andhra Pradesh Eye Disease Study) [17], the barriers were high cost, low priority and lack of awareness. Nowadays, mobile phone is increasingly used in rural India and it requires good near vision to use them. Among our cohorts, there was statistically not significant effect of literacy and awareness of presbyopia (p=0.46). Provision of low cost, high quality reading glasses, with education about their use can be given during our regular cataract screening camps .

Conclusion

From our study we would be like to conclude that Prevalence of presbyopia is high among rural females. In our study population, literacy was not found to be associated with the awareness of presbyopia (p=0.46) Most of the women do not wear spectacles because of poor quality glasses and difficulty in maintaining spectacles while working.

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