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Original Article

Presbyopia among Health Workers in a Tertiary Hospital in North Western Nigeria

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ABSTRACT

Objective: The aim was to determine the prevalence of presbyopia among workers at Federal Medical Centre (FMC) in Birnin-Kebbi, Nigeria. **Materials and Methods:** A cross-sectional survey of 145 persons at FMC Birnin-Kebbi, Nigeria. Subjects were selected by random sampling technique from the two directorates of the hospital, clinical, and administrative. Visual acuity was measured with the Snellen's chart while persons with subnormal vision were examined using pinhole and correction if required. Near vision was tested at a distance of 40 cm with a near vision chart. Subjects not using correction were asked on their perceived barrier for not using correction. **Results:** The age range was from 35 to 57 years (mean age 44.7 years), including 65.5% males and 34.5% females. The prevalence of presbyopia was 42.1%. Spectacle coverage was 51.5% with 48.5% of persons needing correction not using correction. Lack of awareness and no felt need were the major barriers to non-use of the spectacles. **Conclusions:** Many of the cohorts remained uncorrected despite their presbyopic errors. There is a need to create more awareness among health workers about presbyopia and its correction. Ensuring adequate treatment of presbyopia among health workers can impact positively on the quality of life and productivity of health personnel.

Keywords: Awareness, health workers, presbyopia, presbyopia correction coverage

INTRODUCTION

Presbyopia is an age-related loss of lens accommodation that result in the inability to focus at near distance.[1] It is the most common physiological change occurring in the adult eye and it is thought to cause universal near vision impairment with advancing age.[1] People are defined as presbyopic if they are unable to read the N8 optotype with distance correction in place if needed, or they are able to read at least one more line with the addition of a plus lens.[1,2]

People who have presbyopia may complain of headache and eye strain, and have to hold the object progressively further away from their eye in order to be able to focus on them.[1] Presbyopia is universal and occurs as a result of age-related physiological change that occur in the proteins of the crystalline lens of the eye.[3,4] The lens becomes harder and less elastic with age making it progressively difficult for an individual to focus on near objects.[4]

A simple pair of corrective spectacle lenses will correct refractive error including presbyopia, yet there still exists a high prevalence of uncorrected refractive errors, especially in developing countries.[5] Presbyopia affects quality of life of people in high-income countries where reading and writing are the main near vision related tasks undertaken. For example, Donnell at al[6] showed that presbyopia was associated with substantial negative effect on health-related quality of life in a US population.[6] In Nigeria, a study in Plateau State showed presbyopia presents early and is a problem that cuts across social strata and impact negatively on near vision related tasks

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both in formal workplace and among artisans such as tailors.[7] Economic consequences are likely to be considerable as uncorrected prebyopia affect people in working age group.[7-9]

The objective of this study was to determine the prevalence of presbyopia among health workers and to know the reasons for the lack of wearing corrections. This is with a view to advocate the use of glasses among subjects detected to have presbyopia. To the best of our knowledge, this is the first time a research is conducted among health workers in a tertiary health facility in Birnin-Kebbi Northwest, Nigeria.

MATERIALS AND METHODS

This was a prospective cross-sectional study conducted among staff of Federal Medical Centre Birnin-Kebbi, Nigeria. The study was conducted over a period of 2 months from May to June, 2014. Simple random sampling technique by balloting was used to recruit subjects for the study. One hundred and forty-five persons 35 years and above who consented were included and examined.

Demographic details of all eligible participants were recorded on a proforma. The authors measured the visual acuity (VA). Distance VA was tested at a distance of 6 meters within the hospital premises in a well-illuminated area using Snellen's chart. Persons with VA less than 6/6 in either eye were re-tested with a pinhole and if there was improvement a plus or minus lens was used subjectively to determine their correction. All persons with subnormal VA (less than or equals to 6/9 in either eye and for those without improvement with pin hole or available correction) were later referred to eye unit of Federal Medical Centre (FMC) for detailed eye examination by ophthalmologist and objective refraction by the optometrist. All subjects had their near vision tested with a near vision chart at a distance of 40 cm. Convex lenses were used to determine any improvement and the power that gave N5 correction was taken as the needed power for correction.

The study was approved by the Research Ethics committee of the FMC, Birnin-Kebbi. Individual consent was obtained from all the study participants. Training and pilot survey were conducted prior to the study to ensure standardization and data quality. Data were entered into SPSS 17.0 (IBM Corp., NY, USA) and analyzed using simple frequencies. Categorical variables were compared using Chi-square test, $P < 0.05\%$ was considered as statistically significant.

RESULTS

A total of 145 persons were examined. Ninety-five persons (65.5%) were males while 50 (34.5%) were females. The age range of the participants was 35-57 years with a mean age of 44.7 years (6.59 standard deviation) [Table 1]. The VA was 6/6 in the right eye and left eye of 129 and 128 persons, respectively [Table 2]. The prevalence of presbyopia was (61) 42.1% among the studied cohort. The prevalence of uncorrected presbyopia was (28) 19.3% as only 33 persons that needed glasses were found to be wearing spectacles. Majority of persons with presbyopia required spectacle correction (near correction) with powers in the range of 2.25DS to 3.00DS [Figure 1]. Among 28 persons with uncorrected presbyopia, 15 (53.6%) reported not being aware of the error or its correction [Figure 2]. Persons working in the administrative directorate were more likely not to be using correction, but the result was not statistically significant ($P = 0.629$).

DISCUSSION

Majority of the cohorts were between 35 and 50 years of age, an age range where presbyopic correction

Table 1: Demography, directorate and ability to read N8 optotype among participants

Demographic variable	Number (%)
Age range (years)	
35-40	87 (60.0)
41-45	26 (17.9)
46-50	18 (12.4)
51-55	10 (6.9)
56-60	4 (2.8)
Total	145 (100.0)
Sex	
Male	95 (65.5)
Female	50 (34.5)
Total	145 (100.0)
Directorate	
Clinical	89 (61.4)
Administration	56 (38.6)
Total	145 (100.0)
Ability to read N8	
Able to read	84 (57.9)
Unable to read	61 (42.1)
Total	145 (100.0)

Table 2: Unaided VA among study participants

VA	Right eye	Left eye
	n (%)	*n* (%)
6/6	129 (89.0)	128 (88.2)
6/9	6 (4.1)	10 (6.9)
6/12	6 (4.1)	3 (2.1)
6/18	3 (2.1)	3 (2.1)
6/60	1 (0.7)	1 (0.7)
Total	145 (100.0)	145 (100.0)

VA = Visual acuity

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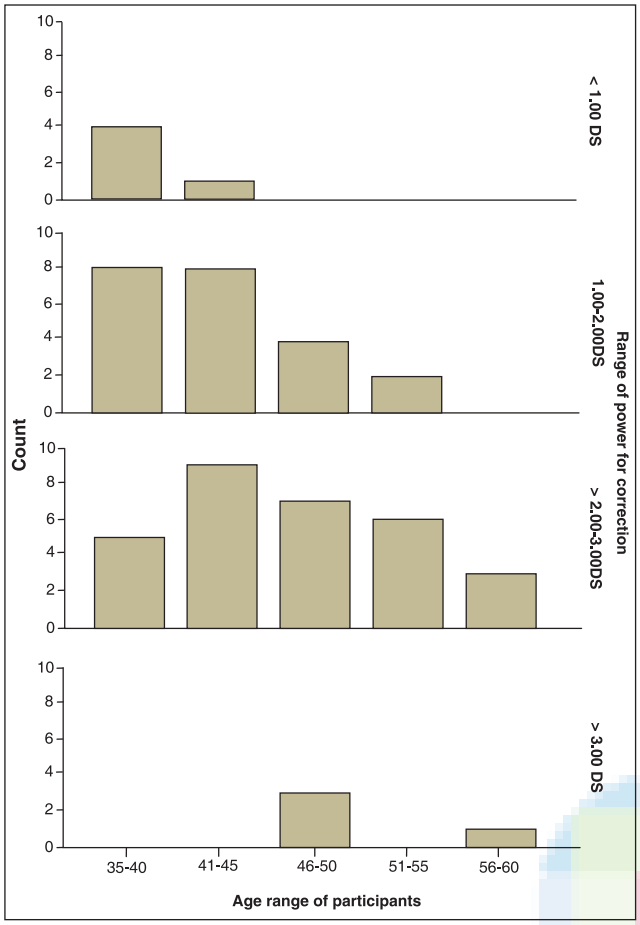


Figure 1: Age of respondent with the amount of near correction required among subjects with presbyopia

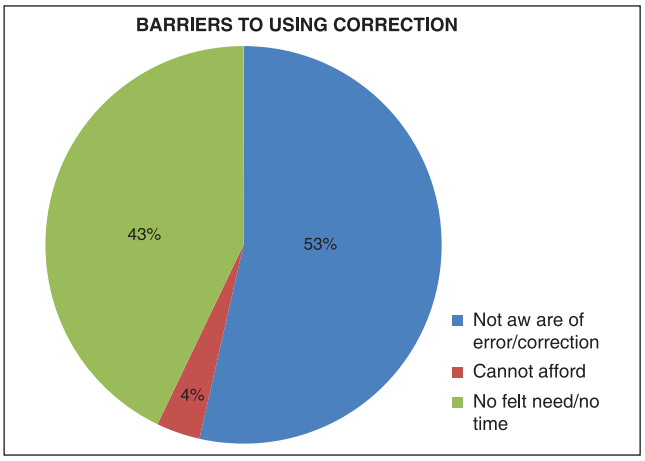


Figure 2: Reasons for lack of wearing correction among participants with presbyopia

would be most desired and also in keeping with productive age in our environment. It was noted from the study that presbyopic needs of those in age group 35-40 years was from 1.00DS to 2.00DS. This finding is in keeping with the report that Africans had a younger age of onset and a more severe form of presbyopia.[10,11] This might be the environment related as people living in hot climates such as tropics where the study was conducted were reported to have an early age of onset of presbyopia.[10] Presbyopia was statistically significantly (P = 0.03) present in all participants 50 years and above, and they also required higher power for correction. Even though there were more males in the study, women 25 (50%) were proportionally more presbyopic. Studies have shown age-matched women, and hyperopes present earlier and with a more severe form of presbyopia.[2]

The prevalence of presbyopia in this study was 42.1% and this compares favorably to other studies conducted in Northern Nigeria,[7,12] which are much higher than those reported from the southern part of Nigeria.[9,13] Global estimates of the number of people with uncorrected presbyopia are very limited. In 2005, WHO estimated that 1.04 billion people were presbyopic out of whom 517 million had no correction.[2] In a presbyopia study conducted in India[14] the presbyopia correction coverage (PCC) was found to be 17.6%. This is much lower than the 51.5%, we obtained in our study. This might be related to the fact that our studied cohort were more likely to be educated since they were staff of a tertiary health facility. Individuals working in the administrative directorate were more likely not to use glasses compared with those working in the clinical directorate though, the result was not statistically significant (P = 0.066). The younger age group were significantly (P = 0.019) more likely not to use correction compared with older age groups.

The barriers to lack of wearing correction were mainly due to lack of awareness of the errors or the modality of correction as reported by Ramke *et al*. from Timor Leste.[15] Persons in the administrative directorate were more likely to report the barrier, but the result was not statistically significant.

In view of the fact that there was a low PCC coupled with the lack of awareness of presbyopia and the modalities for its correction among health workers in this study; there is a need to create more awareness among staff as there is the need to involve non-eye care health workers in reducing the burden of disability arising from lack of presbyopia correction. Often, non-eye care health workers are the first point of contact for patients. For them to effectively educate patients regarding presbyopia, they require a good understanding of the entity and the modality for its treatment.

Ensuring adequate treatment of presbyopia among health workers would not only impact positively on the quality of life and productivity of health personnel, but also ensure a positive attitude toward presbyopia and its treatment. This would also reduce the burden

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of uncorrected presbyopia and promote the realization of the objectives of Vision 2020; right to sight the initiative.

CONCLUSIONS

Wearing corrective glasses if required would improve the quality of services rendered by health personnel and promote a positive attitude toward eye health.

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