PRESBYOPIC CONTENT OF A COMMUNITY BASED ETECARE PROGRAMME IN IMO STATE, NIGERIA.

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ABSTRACT

A community-based eye care programme was carried out in Ikeduru Local Government Area (LGA) of Imo State, Nigeria. This LGA has an estimated population of 150,000. Ocular examinations were carried out on 16,783 (11.19% of total population) mixed population that cut across different ages. The presbyopic content was 7,133 (42.50%). There was higher prevalence of presbyopia with increasing age especially between 45-54years. More females (55.56%) had presbyopia than males (44.44%). By extrapolation, the prevalence of presbyopia in the Nigeria populace is placed at 425,000 per million population. This information provides data for eye care planners in Nigeria.

KEYWORDS: Presbyopia, Accommodative amplitude, Community-based eye care, Prevalence, Extrapolation.

INTRODUCTION

The accommodative amplitude decreases with increase in age, up to the point where clear or comfortable vision at near point is not achievable, leading to presbyopia. The changes in accommodative amplitude with age maybe as a result of subsequent changes in the ciliary muscles, lens, lens capsule and/or changes in the vitreous. The greatest change, however occurs in lens[1,2,3] . Presbyopia typically begins between the ages of 40 and 45, and once presbyopia occurs, it gradually increase over a period of 10 to 12 years and then stabilizes. The accommodative amplitude is almost gone by the age 50 to 55years. Therefore, almost all persons older than 50 years are likely to have presbyopia [5-12]. While the optical extent of presbyopia will be reasonably constant for all individuals of a given refractive status and age, the time of onset of complaints occasioned by presbyopia will vary with the usage of the eyes and the physical attributes of the patient[1].

The correction of presbyopia is relatively easy. It is corrected by the application of a plus lens beyond the lens power used for correction of the refractive state, so determined as to render vision at the desired near point clear and comfortable[1]. Although presbyopia affects a large number of people and is easily treated, it has not gained adequate recognition as a major cause of vision impairment, possibly because current definitions of vision impairment do not account for difficulty in near vision[13].

This community-based eye care programme was therefore undertaken to determine the presbyopic content of this community and extrapolate to get a rough estimate of the prevalence rate of presbyopia in Nigeria.

MATERIALS AND METHODS

A community-based eye care programme was organized in Ikeduru LGA of Imo State, Nigeria. This community is a mixed population of urban and rural dwellers, because of its proximity to the state capital, which comprises workers, business people, traders, students, pupils, farmers among others. The population is 150,000 based on 1991 census projection.

Five distinct autonomous communities were systematically chosen for this programme. Permission was sought and obtained from the chairman of the LGA. General awareness was created on the objective of the eye care programme through the social organizations in the communities like the town unions, age grades, social clubs, churches and schools. The traditional rulers in each of the five communities were visited and co-operation enlisted. Announcements were made in churches, schools and through town criers. Community and village heads were effectively mobilized.

The examination points were chosen in terms of proximity to the populace and standard accommodation for the exercise; hence town halls, schools and health centers were readily available. The manpower comprised three clinic supervisors

and thirty student clinicians, in addition to local heads that were engaged to help in the arrangement of the halls and effective control of the crowd each day. This exercise in these communities lasted ten non-consecutive days, with two days in each community that fell outside their market days.

In the programme, there were a maximum of five points each person would pass through and the clinicians were divide along these points. The points were registration/case history, visual acuity/blood pressure measurement, external eye examination/ophthalmoscopy, static retinoscopy/subjective refraction, and dispensing/counseling. The visual acuity at far was taken with the Snellen's chart and that at near was determined with the Near point card (N card). Blood pressure measurement was indicated only for subjects 40 years and above. The external eye examination was undertaken with the pen torch. Refraction was attempted on all subjects who presented with a visual acuity of worse than 6/6 at distance and N.6 at near in either eye. The presbyopic age was taken as 35 years and above, to accommodate individuals who might not be truthful with their ages.

A person was defined as having presbyopia if the person required an addition to their best corrected distance correction to improve near vision to at least N8.

This study was fraught with various limitations as subjective age declaration, use of manual instruments, which would give varying results depending on the efficiency of the instrument and proficiency of the clinician and census figures in Nigeria, which have been subjected to debate in terms of inaccuracy. Also the fact that more adults responded to the programme may tilt the ratio in favour of the presbyopic age. However, close supervision of clinicians to enhance proficiency, and use of instruments in good working conditions helped to check these limitations.

RESULTS

A total of 16,783 people (of the mixed population across all presenting ages) were examined within the ten days in the five selected communities. This constitutes 11.19% of the total population of the local government area. Nine thousand, eight hundred and fifty-three constituting 58.71% of the sample population fell into the age bracket of 35years and above (the chosen presbyopic age). Out of this, 7,133 subjects constituting 42.50% of sample population were found to be (in the different stages of presbyopia) presbyopic.

The percentage of subjects with presbyopia increased with age upto the 45-54 age range, this percentage leveled off for age range 55-64 and 65-74 (table 1). The percentage of males and females with presbyopia were 44.44% and 55.56% respectively (table 2). The mean age of those with presbyopia was 53.51±71.60years.

By simple extrapolation the number of people examined (16,783) gave a presbyopic content of 7,133, the local government area with a population of 150,000 would elicit a presbyopic content of 63,750, then Imo State would elicit a presbyopic content of 1.62million, it consequently follows, within the limits of human error that Nigeria with an estimated population of 120 million would have a presbyopic content of 51 million, which translates to 425,000 per million Nigeria population.

DISCUSSION

The prevalence of presbyopia in this study population was 42.50%. A population based study carried out in Brazil on a population of adults aged 30years and above showed a prevalence of 54.7%[14], another population-based study carried out in rural Tanzania on persons aged 40years and older reported a prevalence of 61.7%[15], and yet another study carried out in a state in South India on subjects 30years or older gave a prevalence of 55.3%[13]. The lower prevalence given by our study could be because of the age used, while our study examined all ages that presented, these other studies targeted certain ages. The working definition also differed, while our study used the same working definition as the study carried out by Nirmalan et al[13], this working definition differed from the study in Tanzania[15], which defined presbyopia as one line of improvement or a near visual acuity chart with an addition of a plus lens.

Presbyopia showed a higher prevalence with increasing age, and it is more common with females, as had been reported by other similar studies[13,14,15].

The high prevalence presbyopia needs to be translated into programmes and strategies that specifically target presbyopia. The figures obtained provide data for eye care planners in Nigeria since they are comparable to what obtains elsewhere, in consideration of factors that affect onset and progression of presbyopia.

TABLE 1: AGE RANGE OF PRESBYOPIC SUBJECTS

Age Range	Frequency	% Frequency
35 – 44	1893	26.54
45 ï 54	2334	32.72
55 ï 64	1321	18.52
65 ï 74	1365	19.14
75 and above	220	3.08
Total	7,133	100

TABLE 2: SEX OF PRESBYOPIC SUBJECTS

Sex	Frequency	% Frequency
Males	3170	44.44
Females	3923	55.56
Total	7,133	100

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