



ORIGINAL ARTICLE

Visual impairment attributable to uncorrected refractive error and other causes in the Ghanaian youth: The University of Cape Coast Survey



Samuel Abokyi^{a,*}, Alex Ilechie^a, Peter Nsiah^a, Charles Darko-Takyi^a, Emmanuel Kwasi Abu^a, Yaw Jnr Osei-Akoto^b, Mathurin Youfegan-Baanam^b

^a Department of Optometry, School of Physical Sciences, University of Cape Coast, Cape Coast, Central Region, Ghana

^b Our Lady of Grace Hospital, Breman Asikuma, Central Region, Ghana

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KEYWORDS

Refractive error;
Youth;
Visual impairment;
Eye screening;
Spectacles

Abstract

Purpose: To determine the prevalence of visual impairment attributable to refractive error and other causes in a youthful Ghanaian population.

Methods: A prospective survey of all consecutive visits by first-year tertiary students to the Optometry clinic between August, 2013 and April, 2014. Of the 4378 first-year students aged 16–39 years enumerated, 3437 (78.5%) underwent the eye examination. The examination protocol included presenting visual acuity (PVA), ocular motility, and slit-lamp examination of the external eye, anterior segment and media, and non-dilated fundus examination. Pinhole acuity and fundus examination were performed when the PVA \leq 6/12 in one or both eyes to determine the principal cause of the vision loss.

Results: The mean age of participants was 21.86 years (95% CI: 21.72–21.99). The prevalence of bilateral visual impairment (BVI; PVA in the better eye \leq 6/12) and unilateral visual impairment UVI; PVA in the worse eye \leq 6/12) were 3.08% (95% CI: 2.56–3.72) and 0.79% (95% CI: 0.54–1.14), respectively. Among 106 participants with BVI, refractive error (96.2%) and corneal opacity (3.8%) were the causes. Of the 27 participants with UVI, refractive error (44.4%), maculopathy (18.5%) and retinal disease (14.8%) were the major causes. There was unequal distribution of BVI in the different age groups, with those above 20 years having a lesser burden.

Conclusion: Eye screening and provision of affordable spectacle correction to the youth could be timely to eliminate visual impairment.

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* Corresponding author at: University of Cape Coast, Dept. of Optometry, University of Cape Coast Street, Cape Coast, Ghana.
E-mail address: samyomah22@yahoo.com (S. Abokyi).

PALABRAS CLAVE

Error refractivo;
 Juventud;
 Deficiencia visual;
 Exploración ocular;
 Gafas

Deficiencia visual atribuible a error refractivo no corregido y a otras causas en los jóvenes de Ghana: Estudio de la Universidad de Cape Coast

Resumen

Objetivo: Determinar la prevalencia de la deficiencia visual atribuible al error refractivo y a otras causas en una población de jóvenes de Ghana.

Métodos: Estudio prospectivo de todas las visitas consecutivas realizadas por estudiantes terciarios de primer año que acudieron a la Clínica de Optometría entre Agosto de 2013 y Abril de 2014. De los 4.378 estudiantes de primer año registrados, de edades comprendidas entre 16 y 39 años, 3.437 (78,5%) se sometieron a un examen ocular. El protocolo del examen incluyó la revisión de la agudeza visual (AV), la motilidad ocular y la biomicroscopía del ojo externo, segmento anterior y medio, y el examen del fondo de ojo sin dilatación. Los exámenes de la agudeza con agujero estenopeico y del fondo de ojo se realizaron en aquellos casos de AV \leq 6/12 en uno o ambos ojos para determinar la causa principal de la pérdida de visión.

Resultados: La edad media de los participantes fue de 21,86 años (95% IC: de 21,72 a 21,99). La prevalencia de la deficiencia visual bilateral (BVI; AV en el mejor ojo \leq 6/12) y la deficiencia visual unilateral (UVI; AV en el peor ojo \leq 6/12) fue del 3,08% (95% IC: de 2,56 a 3,72) y el 0,79% (95% IC: de 0,54 a 1,14), respectivamente. En 106 participantes con BVI, las causas principales fueron el error refractivo (96,2%) y la opacidad corneal (3,8%). De los 27 participantes con UVI, el error refractivo (44,4%), la maculopatía (18,5%) y la enfermedad retiniana (14,8%) fueron los principales motivos. Se produjo una distribución desigual de la BVI en los diferentes grupos de edad, habiendo un menor impacto en aquellos participantes con edades superiores a 20 años.

Conclusión: La exploración ocular y la adaptación de una corrección en gafa asequible en los jóvenes podría eliminar a tiempo la deficiencia visual.

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Introduction

Visual impairment is recognized as a public health problem worldwide and has devastating effect on the quality of life of individuals.¹ According to World Health Organization, 285 million people are visually impaired, with 90% of this population living in developing countries.² Visual impairment caused by refractive error, cataract and glaucoma is increasingly being recognized worldwide as a significant cause of avoidable visual disability, as evidenced by their inclusion in the priority areas of the global initiative – ‘‘VISION 2020: The Right to Sight’’ to eliminate avoidable blindness.

It has been reported that majority of persons with visual impairment could be encouraged to be self-dependent and to perform the activities of daily living simply by the provision of the requisite spectacles or other optical aids.³ But as was reckoned by the WHO, a major limitation in the elimination of avoidable visual impairment is the insufficient data on the prevalence and avoidable causes of visual impairment in different populations and age groups.⁴

Data on the prevalence of visual impairment in Ghana is lacking since a national survey of blindness and visual impairment is yet to be conducted. Any available estimate on the burden of visual impairment in the country is extrapolated from the findings by surveys conducted on sub-populations including children and the aged, therefore having little or no applicability on the youthful population. Such an information is crucial for resource allocation, planning, and the development of health and educational policy interventions

to ameliorate the burden of visual impairment in the youth. According to the 2010 population census, the youth constitute about 41% of the total Ghanaian population estimated at 24 million.⁵ The male-to-female distribution in the youthful strata is almost equal with a greater proportion of this population (56.1%) living in the urban areas.

The tertiary institutions offer a suitable setting for the study of visual impairment among the youth in Ghana. This is because the tertiary student population shares similar demographic and socioeconomic characteristics as the general Ghanaian youth. Evidence of the youthful nature of the tertiary student population is obvious from the age range for entry of the majority into the tertiary institutions which is between 18 and 21 years to pursue programs having a 3 or 4-year duration. In addition, the socioeconomic variations in the tertiary students in the country depict the diversity existing in the Ghanaian population. This is partly due to the implementation of the less endowed admission (LEA) policy by the public universities,⁶ which ensures that the less privileged students, usually from the rural areas of the country, are given a quota for admission. Also, the implementation of the inclusive educational policy by the tertiary institutions has allowed for proper integration of the visually impaired into mainstream education.⁷ In effect, the outcome following an assessment of visual status of the tertiary students could provide reliable information on visual impairment in the youth. For this reason, this study was conducted to determine the prevalence of visual impairment attributable to refractive error and other causes in students attending

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