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Letter



Addressing Africa's High Rate of Blindness: The Urgent Need for Ophthalmologists

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Dear Editor,

Blindness is a devastating condition that affects millions of people worldwide (1), and Africa bears a disproportionate burden of this global health challenge (2, 3). Africa struggles with a high rate of blindness due to the diversity of its population and the scarcity of ophthalmologists on the continent (4). This article aims to shed light on the critical issue of blindness in Africa and the indispensable role of ophthalmologists in combating this problem. Africa faces significant challenges in terms of eye health, resulting in an alarming prevalence of blindness (5). According to the World Health Organization (WHO), 36 million people in Africa are estimated to be visually impaired, with around 4.8 million suffering from complete blindness (6-8). In addition, a significant number of these cases are preventable or treatable. Several factors contribute to the high rate of blindness in Africa. Poverty, limited access to quality healthcare, inadequate sanitation and hygiene, infectious diseases, malnutrition, and a lack of awareness about eye health are among the primary drivers (3, 9). Moreover, conditions such as cataracts, trachoma, glaucoma, and refractive errors remain prevalent across the continent, often leading to irreversible vision loss if left untreated (10).

Ophthalmologists are medical doctors specializing in diagnosing, treating, and preventing eye diseases and

conditions (11) who play a crucial role in preserving and restoring vision, contributing significantly to public health initiatives focused on eye care. Ophthalmologists possess the expertise to perform surgeries, prescribe medication, provide vision correction interventions, and offer comprehensive eye care services (12). Despite the pressing need for eye care services, Africa faces a severe shortage of ophthalmologists (13). The ratio of ophthalmologists to the population is meager compared to other regions of the world (14). A study reported that Africa has three ophthalmologists per million people (15), while high-income countries typically have more than 50 ophthalmologists per million (16). Several factors contribute to this scarcity, including the limited number of training institutions and programs for ophthalmologists across the continent (17). Inadequate infrastructure, limited resources, and insufficient funding hinder the establishment and expansion of ophthalmology training centers. Consequently, ophthalmologists face significant challenges accessing the necessary education and training opportunities (18).

Furthermore, brain drain exacerbates the shortage of ophthalmologists in Africa (19). Many trained eye care professionals seek better opportunities abroad, enticed by higher salaries, improved working conditions, and more advanced facilities. This migration of skilled

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healthcare workers further depletes the already limited pool of ophthalmologists available to serve African populations.

Tackling the high rate of blindness in Africa requires a multifaceted approach that includes addressing the scarcity of ophthalmologists. Here are some potential investment solutions: Firstly, in developing ophthalmology training institutions and programs can create a sustainable pipeline of qualified eye care professionals. Collaborations between international governments, and organizations, institutions can help establish comprehensive training programs and raise the number of ophthalmologists across the continent (20). Governments and healthcare institutions should prioritize initiatives to retain ophthalmologists and other eye care professionals. Offering competitive salaries, creating conducive working environments, and providing opportunities for professional growth and development can help reduce the brain drain and retain skilled eye care experts within African countries (21). Leveraging advancements in telemedicine and technology can help overcome geographical barriers and increase access to eye care services. Remote consultations, digital imaging, and diagnostic tools can enable ophthalmologists to reach underserved populations, provide early intervention, and monitor patients' progress efficiently (22, 23). Increasing public awareness about eye health and preventive measures is essential. The prevention of avoidable blindness can be decreased by educating communities about common eye conditions, the importance of regular eye checks, and the importance of good eye hygiene (24). The high rate of blindness in Africa is a significant public health concern that demands urgent attention. Addressing the scarcity of ophthalmologists is a critical step toward combating this issue. Investment in training programs, retention of skilled professionals, adoption of technology, and raising awareness can help African nations reduce blindness and ensure that everyone has access to adequate eye care.

Footnotes

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References

- World Health Organization. Blindness and Vision Impairment. 2022. Available from: https://www.who.int/news-room/fact-sheets/detail/blindness-and-visual-impairment.
- Budenz DL, Bandi JR, Barton K, Nolan W, Herndon L, Whiteside-de Vos J, et al. Blindness and visual impairment in an urban West African population: the Tema Eye Survey. *Ophthalmol.* 2012;119(9):1744-53. eng. [PubMed ID: 22677425]. [PubMed Central ID: PMC3532814]. https://doi.org/10.1016/j.ophtha.2012.04.017.
- 3. Naidoo K. Poverty and blindness in Africa. *Clinical and Experimental Optometry*. 2007;**90**(6):415-21. https://doi.org/10.1111/j.1444-0938.2007.00197.x.
- Graham R. Facing the crisis in human resources for eye health in sub-Saharan Africa. Community Eye Health. 2017;30(100):85-7. eng. [PubMed ID: 29483753]. [PubMed Central ID: PMC5820633].
- 5. World Health Organization. *Eye Health*. 2023. Available from: https://www.afro.who.int/health-topics/eye-health.
- Akudinobi CU, N. Nwosu SN. Prevalence of visual impairment among the destitute in Onitsha, Southern Nigeria. Niger J Clin Pract. 2022;25(8):1211-5. eng. [PubMed ID: 35975365]. https://doi.org/10.4103/njcp.njcp_1310_21.
- Ackland P, Resnikoff S, Bourne R. World blindness and visual impairment: despite many successes, the problem is growing. Community Eye Health. 2017;30(100):71-3. eng. [PubMed ID: 29483748]. [PubMed Central ID: PMC5820628].
- Courtright P, Mathenge W, Kello AB, Cook C, Kalua K, Lewallen S. Setting targets for human resources for eye health in sub-Saharan Africa: what evidence should be used? *Hum Resour Health*. 2016;14:11. eng. [PubMed ID: 26984773]. [PubMed Central ID: PMC4794905]. https://doi.org/10.1186/s12960-016-0107-x.
- Azevedo MJ. The State of Health System(s) in Africa: Challenges and Opportunities. Historical Perspectives State Health Health Systems in Africa, Volume II. 2017:1-73. [PubMed Central ID: PMC7123888]. https://doi.org/10.1007/978-3-319-32564-4_1.
- 10. World Health Organization. *Trachoma*. 2023. Available from: https://www.who.int/news-room/fact-sheets/detail/trachoma.
- Health Direc. The role of an ophthalmologist. 2023. Available from: https://www.healthdirect.gov.au/ophthalmologist[Accessed.
- American Academy of Opthalmology. Ophthalmologists: Physicians Protecting Your Vision. 2023. Available from: https://www.aao.org/eye-health/tips-prevention/ophthalmologists.
- Nentwich MM, Schaller UC, Klauss V. Reasons reported by African ophthalmologists for staying in Africa and for considering migrating. *Int Ophthalmol*. 2014;34(4):887-92. eng. [PubMed ID: 24448908]. https://doi.org/10.1007/s10792-014-9896-x.
- Melamed S. Lessons from the Togo Glaucoma Project. Ophthalmology Times. 2023. Available from: https://www.ophthalmologytimes.com/view/lessons-from-the-togoglaucoma-project.
- Resnikoff S, Felch W, Gauthier TM, Spivey B. The number of ophthalmologists in practice and training worldwide: a growing gap despite more than 200,000 practitioners. Br J Ophthalmol. 2012;96(6):783-7. eng. [PubMed ID: 22452836]. https://doi.org/10.1136/bjophthalmol-2011-301378.
- 16. Resnikoff S, Lansingh VC, Washburn L, Felch W, Gauthier TM, Taylor HR, et al. Estimated number of ophthalmologists worldwide (International Council of Ophthalmology update): will we meet the needs? Br J Ophthalmol. 2020;104(4):588-92. eng. [PubMed ID: 31266774]. [PubMed Central ID: PMC7147181]. https://doi.org/10.1136/bjophthalmol-2019-314336.

- Dean WH, Buchan JC, Gichuhi S, Faal H, Mpyet C, Resnikoff S, et al. Ophthalmology training in sub-Saharan Africa: a scoping review. Eye (Lond). 2021;35(4):1066-83. eng. [PubMed ID: 33323984]. [PubMed Central ID: PMC8115070]. https://doi.org/10.1038/s41433-020-01335-7.
- 18. Cicinelli MV, Marmamula S, Khanna RC. Comprehensive eye care Issues, challenges, and way forward. *Indian J Ophthalmol*. 2020;**68**(2):316-23. eng. [PubMed ID: 31957719]. [PubMed Central ID: PMC7003576]. https://doi.org/10.4103/ijo.IJO_17_19.
- Monsudi KF, Mustapha T, Owoeye JF. Ophthalmologists' Brain Drain:
 A Health Catastrophe in Nigeria. Nigerian J Ophthalmol. 2022;30(3):135-6.
- 20. Williams LB, Prakalapakorn SG, Ansari Z, Goldhardt R. Impact and Trends in Global Ophthalmology. *Curr Ophthalmol Rep.* 2020;8(3):136-43. eng. [PubMed ID: 32837802]. [PubMed Central ID: PMC7306491]. https://doi.org/10.1007/s40135-020-00245-x.

- Dia IA. African health practitioner migration and mobility study. 2022.
 Available from: https://www.ilo.org/wcmsp5/groups/public/--africa/--ro-abidjan/--sro-cairo/documents/publication/wcms_853280.pdf.
- 22. Yuen J, Pike S, Khachikyan S, Nallasamy S. Telehealth in Ophthalmology. *Digital Health*. 2022. p. 1-14. https://doi.org/10.36255/exon-publications-digital-health-telehealth-ophthalmology.
- Dolar-Szczasny J, Barańska A, Rejdak R. Evaluating the Efficacy of Teleophthalmology in Delivering Ophthalmic Care to Underserved Populations: A Literature Review. J Clin Med. 2023;12(9). eng. [PubMed ID: 37176602]. [PubMed Central ID: PMC10179149]. https://doi.org/10.3390/jcm12093161.
- National Academies of Sciences E, Medicine D, Board on Population H, Public Health P; Medicine; Health, et al. The National Academies Collection: Reports funded by National Institutes of Health. Making Eye Health a Population Health Imperative: Vision for Tomorrow. 2016. eng. [PubMed ID: 27656731]. https://doi.org/10.17226/23471.