BOCA
BOLETIM DE CONJUNTURA

SOCIAL ENTREPRENEURSHIP IN OPHTHALMOLOGY: HOW VISION HEALTH OUTREACH PROGRAMS TRANSFORM AND SAVE LIVES

EMPREENDEDORISMO SOCIAL EM OFTALMOLOGIA: COMO PROGRAMAS DE ALCANCE EM SAÚDE VISUAL TRANSFORMAM E SALVAM VIDAS

EMPRENDIMIENTO SOCIAL EN OFTALMOLOGÍA: CÓMO LOS PROGRAMAS DE ALCANCE EN SALUD VISUAL TRANSFORMAN Y SALVAN VIDAS

https://doi.org/10.56238/bocav25n74-042

Data de submissão: 15/12/2025 **Data de publicação:** 26/01/2026

Rodrigo Eduardo Fontes

ABSTRACT

Social entrepreneurship in ophthalmology combines a social mission, organizational innovation, and financial sustainability to expand access to eye care. This article examines how social enterprises, community vision centers, mobile clinics, outreach programs, educational interventions, and digital technologies can reduce the economic, geographic, and informational barriers faced by vulnerable populations. A narrative literature review was conducted using 17 scientific articles published between 2016 and 2025. The reviewed studies demonstrate that socially oriented models can increase the availability and affordability of refractive services, train local workers, subsidize spectacles, and bring screening closer to communities. Evidence from Kenya, India, the United States, Zanzibar, and Malaysia also indicates that the strongest outcomes are achieved when screening is accompanied by structured referral, treatment, and follow-up mechanisms. Although teleophthalmology, mobile applications, and community education offer substantial potential, these strategies do not replace permanent care networks. Social entrepreneurship can contribute to the prevention of avoidable visual impairment when innovation, community participation, sustainable financing, workforce development, and continuity of care are integrated.

Keywords: Social Entrepreneurship. Ophthalmology. Eye Health. Health Equity. Visual Impairment.

RESUMO

O empreendedorismo social em oftalmologia combina uma missão social, inovação organizacional e sustentabilidade financeira para expandir o acesso ao cuidado oftalmológico. Este artigo examina como empresas sociais, centros comunitários de visão, clínicas móveis, programas de alcance comunitário, intervenções educacionais e tecnologias digitais podem reduzir as barreiras econômicas, geográficas e informacionais enfrentadas por populações vulneráveis. Uma revisão narrativa da literatura foi realizada utilizando 17 artigos científicos publicados entre 2016 e 2025. Os estudos analisados demonstram que

modelos socialmente orientados podem aumentar a disponibilidade e a acessibilidade de serviços refrativos, treinar trabalhadores locais, subsidiar óculos e aproximar a triagem das comunidades. Evidências do Quênia, Índia, Estados Unidos, Zanzibar e Malásia também indicam que os melhores resultados são alcançados quando a triagem é acompanhada por mecanismos estruturados de encaminhamento, tratamento e acompanhamento. Embora a teleftalmologia, aplicativos móveis e educação comunitária ofereçam potencial substancial, estas estratégias não substituem redes de cuidado permanentes. O empreendedorismo social pode contribuir para a prevenção da deficiência visual evitável quando inovação, participação comunitária, financiamento sustentável, desenvolvimento da força de trabalho e continuidade do cuidado são integrados.

Palavras-chave: Empreendedorismo Social. Oftalmologia. Saúde Ocular. Equidade em Saúde. Deficiência Visual.

RESUMEN

El emprendimiento social en oftalmología combina una misión social, innovación organizacional y sostenibilidad financiera para ampliar el acceso a la atención oftalmológica. Este artículo examina cómo las empresas sociales, centros comunitarios de visión, clínicas móviles, programas de alcance comunitario, intervenciones educativas y tecnologías digitales pueden reducir las barreras económicas, geográficas e informacionales enfrentadas por poblaciones vulnerables. Se realizó una revisión narrativa de la literatura utilizando 17 artículos científicos publicados entre 2016 y 2025. Los estudios revisados demuestran que los modelos orientados socialmente pueden aumentar la disponibilidad y asequibilidad de servicios refractivos, capacitar trabajadores locales, subsidiar gafas y acercar el cribado a las comunidades. La evidencia de Kenia, India, Estados Unidos, Zanzíbar y Malasia también indica que los mejores resultados se logran cuando el cribado va acompañado de mecanismos estructurados de derivación, tratamiento y seguimiento. Aunque la teleoftalmología, las aplicaciones móviles y la educación comunitaria ofrecen un potencial sustancial, estas estrategias no reemplazan las redes permanentes de atención. El emprendimiento social puede contribuir a la prevención de la deficiencia visual evitable cuando se integran la innovación, la participación comunitaria, el financiamiento sostenible, el desarrollo de la fuerza de trabajo y la continuidad de la atención.

Palabras clave: Emprendimiento Social. Oftalmología. Salud Ocular. Equidad en Salud. Deficiencia Visual.

1 INTRODUCTION

Visual impairment is a public health problem associated with educational limitations, reduced productivity, loss of independence, and poorer quality of life. The Lancet Global Health Commission on Global Eye Health reported that a substantial proportion of vision loss could be prevented or treated through interventions that are already available. Nevertheless, access to these services remains unequally distributed, particularly in low- and middle-income countries, rural regions, and socially marginalized communities [1]. In these populations, the formal availability of a service does not necessarily mean effective access because costs, distance, transportation difficulties, limited health literacy, and workforce shortages may prevent people from seeking and continuing care [2,3].

Social entrepreneurship has emerged in this context as an approach that combines health objectives with mechanisms for operational sustainability. Unlike an isolated charitable intervention, a social enterprise seeks to address a collective problem through a model that generates revenue, mobilizes partnerships, or employs cross-subsidization while maintaining a social mission. In ophthalmology, this approach may include community vision centers, mobile clinics, subsidized spectacle production or sales, screening programs, local workforce development, and telemedicine platforms [4-9].

These models should not be understood as replacements for public health systems or specialized ophthalmic services. Their main contribution lies in their capacity to fill access gaps, test locally adapted solutions, and connect underserved communities with permanent services. This article examines the mechanisms through which social entrepreneurship can expand access to eye care and discusses its main strategies and challenges related to equity, continuity of care, and sustainability.

2 METHODOLOGY

A narrative review of the scientific literature was conducted. The search focused on articles published between 2016 and 2025 and consulted through PubMed/MEDLINE, PubMed Central, and official journal platforms. The English terms “social entrepreneurship,” “social enterprise,” “ophthalmology,” “eye health,” “community eye care,” “mobile eye clinic,” “refractive error,” “teleophthalmology,” “community engagement,” and “health inequities” were used in different combinations.

Peer-reviewed studies addressing social enterprises in eye health, community ophthalmology programs, mobile screening, vision centers, health education, telemedicine, referral pathways, and the social determinants of access were included. Case studies of established social entrepreneurship models were also considered when they had direct implications for the organization of ophthalmic services. Duplicate publications, exclusively opinion-based papers, and materials without a direct relationship to access, continuity, or sustainability were excluded. Seventeen articles were ultimately selected for the narrative synthesis.

3 LITERATURE REVIEW

Social entrepreneurship in ophthalmology is based on the integration of social value and operational viability. The Aravind system in India became a prominent example by combining free or low-cost care, high service capacity, standardized processes, and revenue from paying patients. Analysis of this model demonstrates that economic sustainability does not necessarily conflict with a social mission when efficiency is used to expand care rather than exclusively maximize financial returns [16]. Its experience also shows that scale, workforce development, and organized patient flows are as important as the clinical procedure itself.

Studies conducted in Kenya further developed this discussion by examining social enterprises involved in refractive error correction. Among representatives of these organizations, 93.1% identified effects related to the accessibility, availability, and affordability of services. Trainees reported benefits involving skills development, economic empowerment, community sensitization, and perceived improvements in quality of life [6]. These findings suggest that the contribution of social enterprises extends beyond spectacle provision and includes the development of local capacity and economic opportunities.

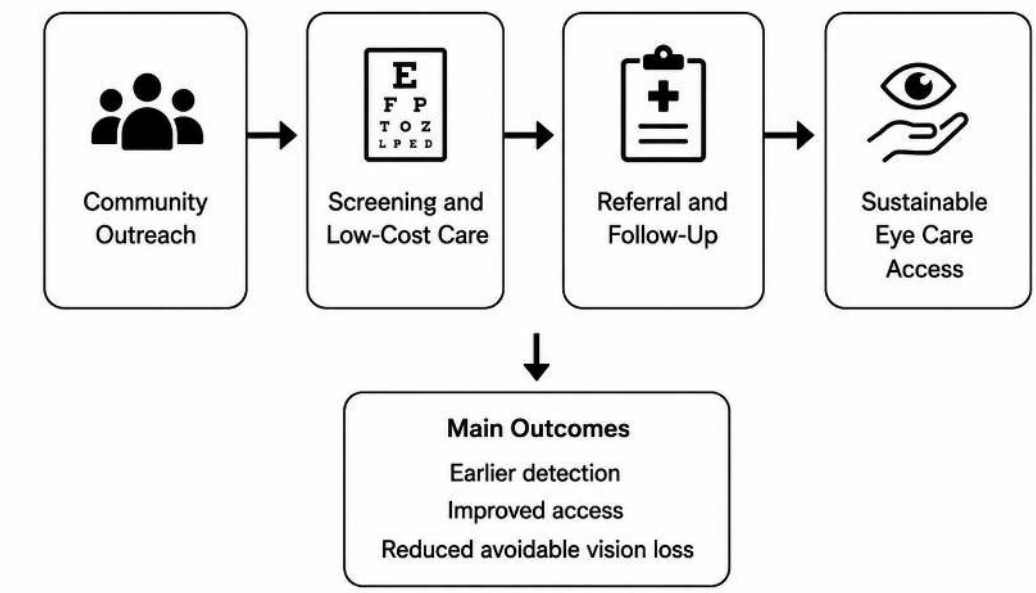
A SWOT analysis of the models used by Kenyan social enterprises identified community proximity, operational flexibility, and innovation potential as relevant strengths. Limitations included workforce shortages, dependence on partners, competition among organizations, and the absence of specific recognition policies [7]. A subsequent situational analysis confirmed that these enterprises could complement the commercial sector, but their

integration into the eye health ecosystem requires regulatory structures, government coordination, and clearly defined referral pathways [9].

The framework proposed by Muma, Naidoo, and Hansraj combines vision centers, workforce development, technology, partnerships, referral mechanisms, and cross-subsidization. The experts consulted in the study recognized skills development, partnerships, and technology as essential components for expanding effective refractive error coverage. Telemedicine was considered particularly relevant for connecting community points of care with professionals located at secondary or tertiary centers [8]. Collaboration between social and commercial enterprises may also allow the sharing of equipment, supply chains, managerial competencies, and infrastructure, although differences in objectives and operational models need to be managed [10]. As illustrated in Figure 1, social entrepreneurship in eye care connects community-based access strategies, sustainable operational mechanisms, and continuity of care to produce broader and more equitable health outcomes

Figure 1

Integrated Pathway of Social Entrepreneurship in Eye Care



Source: Created by author.

Geographic proximity is one of the main advantages of community initiatives. Mobile clinics and outreach programs can identify refractive errors, cataracts, retinal abnormalities,

suspected glaucoma, and other conditions among people who would be unlikely to seek ophthalmic care independently. In the United States–based Guerrilla Eye Service, 114 of 360 screened participants were referred for specialized care, and 72% attended the recommended follow-up appointment [12]. This outcome demonstrates that mobile strategies can result in continuity of care when a formal partnership with a referral clinic is available.

The benefits of eye screening may extend beyond ophthalmology. In a multicenter study conducted in rural India, 29.5% of patients considered medically unfit for cataract surgery had a systemic comorbidity detected for the first time through the outreach program. Following screening, 86.5% visited a primary care physician, while 76% adhered to the prescribed medication [11]. These findings indicate that a well-organized eye health program may serve as an entry point into the broader health system, supporting the detection of hypertension, diabetes, and other conditions that affect both general health and surgical safety.

Screening without follow-up, however, may have limited clinical impact. Identifying a disease does not ensure that patients can afford transportation, understand the seriousness of the diagnosis, schedule an appointment, or reach treatment. Socially responsible models should therefore include individualized counseling, referral registration, communication with receiving services, follow-up of missed appointments, and financial support mechanisms when necessary [2,5,12].

Community participation is another determining factor. A review of 73 studies conducted in 28 low- and middle-income countries identified community engagement in education, medication distribution, screening, surveillance, and care navigation. However, the involvement of volunteers or local leaders alone does not guarantee trust, participation, or sustainability. Better results depend on defined responsibilities, culturally appropriate communication, training, and meaningful community participation in intervention planning [4].

In Zanzibar, the participatory development of an arts-based educational strategy demonstrated the importance of adapting messages to the community's cultural and linguistic context. Music, theater, and materials developed with community members can make eye health information more understandable and socially legitimate [13]. In India, a social media–based intervention increased the exposure of a disadvantaged community to information about prevention, symptoms, and care-seeking [14]. These experiences demonstrate that

health education should be dialogical, contextualized, and linked to available services. Isolated information transmission is unlikely to be sufficient.

Digital technologies further expand the possibilities of social entrepreneurship. Mobile applications may support visual acuity assessment, image registration, cataract screening, and communication between community workers and specialists. In an experience conducted in Malaysia, an application used in residential facilities for older adults achieved accuracy exceeding 90% in cataract screening, indicating its potential in locations with limited professional availability [15]. Performance in controlled settings, however, does not eliminate the need for clinical validation, data protection, workforce training, and referral protocols.

A review of interventions intended to reduce eye health inequities concluded that outreach services and teleophthalmology could increase screening attendance and some referral outcomes, particularly among rural residents. Nevertheless, teleophthalmology did not consistently improve subsequent treatment adherence, while education alone produced limited results. Financial interventions may increase cataract surgery acceptance, but their effects vary according to context [5]. Technology, education, and financing should consequently be combined rather than treated as independent solutions.

Social determinants must guide the design of every initiative. Income, gender, age, education, geographic location, transportation, and institutional trust influence both exposure to risk and service utilization [2,3]. Women, older adults, and rural residents may encounter specific barriers that will not be resolved simply by opening a clinic. Flexible schedules, active outreach, female community leadership, care closer to the home, and transportation subsidies are examples of potentially necessary adaptations [5].

The global ophthalmology literature emphasizes that sustainable programs should strengthen local systems, train professionals, and integrate different levels of care [17]. Social entrepreneurship offers instruments for this integration, but it may also fragment care when organizations operate independently, adopt incompatible indicators, or discontinue activities after funding ends. Sustainability should therefore be evaluated not only according to revenue generation but also according to continuity of care, clinical quality, equity, local capacity, and incorporation into health networks.

4 CONCLUSION

Social entrepreneurship can play a strategic role in expanding access to eye care, especially in rural, low-income, and marginalized communities. Its most relevant contribution is not limited to conducting outreach events, distributing spectacles, or introducing applications. Rather, it lies in developing models capable of connecting screening, diagnosis, treatment, referral, education, and follow-up.

Evidence indicates that community vision centers, mobile clinics, cross-subsidization, local workforce development, participatory education, and teleophthalmology can reduce important barriers. None of these strategies, however, guarantees a lasting impact when used in isolation. Preventing avoidable vision loss requires integration with public and specialized services, predictable financing, quality indicators, referral mechanisms, and active community participation.

Social entrepreneurship should therefore be understood as part of a people-centered eye care ecosystem. When coordinated with public policies and permanent care networks, it can transform episodic screening into effective access, strengthen local capacity, and contribute to a more equitable distribution of the benefits of ophthalmology.

REFERENCES

1. Burton MJ, Ramke J, Marques AP, Bourne RRA, Congdon N, Jones I, *et al.* The Lancet Global Health Commission on Global Eye Health: vision beyond 2020. Lancet Glob Health. 2021;9(4). doi:10.1016/S2214-109X(20)30488-5.

2. Williams AM, Sahel JA. Addressing social determinants of vision health. Ophthalmol Ther. 2022;11(4):1371-1382. doi:10.1007/s40123-022-00531-w.

3. Gai MJ, Reddy VG, Xu V, Noori NH, Beckler MD. Illuminating perspectives: navigating eye care access in Sub-Saharan Africa through the social determinants of health. Cureus. 2024;16(6). doi:10.7759/cureus.61841.

4. Lee L, Moo E, Angelopoulos T, Yashadhana A. Integrated people-centered eye care: a scoping review on engaging communities in eye care in low- and middle-income settings. PLoS One. 2023;18(1). doi:10.1371/journal.pone.0278969.

5. Cardona M, Alwenya K, Rehman AU, Olalo SP, Thai A, Rangi M, *et al.* Eye care interventions that reduce access inequities for women, rural residents and older people in low-middle-income countries: a scoping review. Front Public Health. 2025;13:1578848. doi:10.3389/fpubh.2025.1578848.

6. Muma SL, Naidoo KS, Hansraj R. Perceived impacts of social enterprises in scaling effective refractive error coverage in Kenya. Soc Enterp J. 2024;20(1):91-110. doi:10.1108/SEJ-08-2023-0095.

7. Muma S, Naidoo KS, Hansraj R. SWOT analysis of the models used by social enterprises in scaling effective refractive error coverage to achieve the 2030 In Sight in Kenya. Sci Rep. 2024;14:3750. doi:10.1038/s41598-024-54493-z.

8. Muma S, Naidoo KS, Hansraj R. Proposed framework for the integration of refractive error services into the eye health ecosystem in Kenya via social enterprise. Sci Rep. 2025;15(1):1515. doi:10.1038/s41598-024-85006-7.

9. Muma S, Naidoo KS, Hansraj R. Situation analysis of the social enterprises engaged in refractive error services delivery in Kenya. BMC Health Serv Res. 2025;25:644. doi:10.1186/s12913-025-12831-5.

10. Muma S, Naidoo KS, Hansraj R. Social enterprises and stakeholder's views regarding collaboration with commercial enterprises in the provision of eye care services in Kenya. Soc Enterp J. 2025;21(5):937-950. doi:10.1108/SEJ-05-2024-0085.

11. Bhat A, Murali K, Paritekar P, Fathima N, Gudimetla J, Thulasidas M, *et al.* Role of eye screening camp in detecting systemic diseases and promoting health-seeking behaviour in the rural population: a multi-centre study. J Family Med Prim Care. 2025;14(2):556-559. doi:10.4103/jfmpc.jfmpc_1228_24.

12. Williams AM, Botsford BW, Mortensen P, Park D, Waxman E. Delivering mobile eye care to underserved communities while providing training in ophthalmology to medical students: experience of the Guerrilla Eye Service. Clin Ophthalmol. 2019;13:337-346. doi:10.2147/OPTH.S185692.

13. Chan VF, Belluigi D, Yong AC, Mulewa D, Poonsamy-Govender P, Graham C, *et al.* Co-creating an arts-based eye health education strategy in Zanzibar: process, outcomes and lessons learnt. BMJ Glob Health. 2022;7(9). doi:10.1136/bmjgh-2022-009317.

14. Maitra C, Rowley J. Using a social media based intervention to enhance eye health awareness of members of a deprived community in India. Inf Dev. 2022;38(3):438-451. doi:10.1177/02666669211013450.

15. Ramlan LA, Wan Zaki WMD, Abdul Mutalib H, Mat Daud M, Mustapha A. The impact of mobile application for ocular disease screening in community outreach program. J Kejuruteraan. 2025;37(2):721-729. doi:10.17576/jkukm-2025-37(2)-13.

16. Virmani A, Lépineux F. Aravind Eye Care System as transformational entrepreneurship: spiritual roots, multi-dimensional impact. Philos Manag. 2016;15(1):83-94. doi:10.1007/s40926-016-0032-z.

17. Philippin H, Morny EKA, Heinrich SP, Töws I, Maier PC, Guthoff RF, *et al.* Globale Ophthalmologie: aktueller Stand. Ophthalmologie. 2024;121(2):157-170. doi:10.1007/s00347-023-01983-6.