MULTIPLE RATIONALITIES AND THE REALITIES OF DIABETIC RETINOPATHY SCREENING STRATEGIES IN CAMEROON: A LITERATURE REVIEW

FRANCIS VICTOIRE TANGA DOUMBE[1*]
School of Health Sciences/Catholic University of Central Africa

DANIEL ETYA'ALE ESSI[2]
School of Public Health University of Cape Town

LUC ONAMBELE[3]
School of Health Sciences/Catholic University of Central Africa

***Corresponding Author : FRANCIS VICTOIRE TANGA DOUMBE**

ABSTRACT

Diabetic retinopathy (DR) is a microvascular complication of diabetes characterized by damage to the retinal blood vessels, which can lead to vision impairment and blindness. It typically progresses through stages, starting with mild non-proliferative changes and potentially advancing to proliferative diabetic retinopathy, where new, abnormal blood vessels form on the retina. The condition is often asymptomatic in its early stages, making regular screening essential for early detection and intervention. In Cameroon, the rising prevalence of diabetes necessitates early detection and intervention to avert vision loss. This study evaluates the feasibility of implementing DR screening strategies in Cameroon, focusing on unique economic, legal, ethical, social, and organizational challenges. A comprehensive literature review was conducted to assess the effectiveness, costs, ethical considerations, and organizational aspects of various DR screening strategies. The review included studies published between 2014 and 2021, emphasizing the involvement of social workers or paraprofessionals in diabetes management. Findings underscore the necessity of addressing socioeconomic and cultural barriers to enhance community engagement in DR screening. Recommendations include targeted outreach initiatives, financial assistance for screening services, and culturally tailored communication strategies.

Keywords: *Diabetic retinopathy, screening, rationalities, Cameroon.*

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INTRODUCTION

Diabetic retinopathy (DR) represents a significant public health challenge, affecting millions globally. According to the World Health Organization (WHO), DR is a leading cause of preventable blindness worldwide, affecting millions of individuals with diabetes (World Health Organization, 2019; International Diabetes Federation, 2021). Diabetic retinopathy is a leading cause of preventable blindness globally, impacting approximately 4.8 million individuals with diabetes. The International Diabetes Federation (IDF) and the International Agency for the Prevention of Blindness (IAPB) report that an estimated 4.8 million individuals with diabetes experience vision loss due to DR. This prevalence is projected to escalate as diabetes rates continue to rise. Early detection and treatment are essential to prevent vision impairment and sustain quality of life.

In Cameroon, the burden of diabetes is increasing, with approximately 2.5 million individuals diagnosed. Despite commitments to achieve health targets by 2030, progress in diabetes care and prevention remains insufficient. This literature review aims to evaluate the feasibility of implementing effective DR screening strategies in Cameroon, taking into account specific economic, legal, ethical, social, and organizational factors. The focus is on identifying efficient DR screening methodologies based on international best practices and assessing their adaptability to the Cameroonian context.

Methodology

A systematic literature review was conducted to evaluate the effectiveness, costs, ethical considerations, and organizational aspects of DR screening strategies. The review included studies published between 2014 and 2021 that met the following criteria:

- Studies involving social workers or paraprofessionals engaged in diabetes management.
- Research highlighting the contributions of these personnel to health-related objectives.

The review process entailed:

1. Identification: Sourcing relevant articles from databases such as Hinari, PubMed, and Google Scholar.
2. Eligibility: Excluding duplicates and articles that did not meet inclusion criteria.
3. Inclusion: Analyzing selected articles to ensure alignment with study objectives.

Results

1. Overview of Effective DR Screening Strategies

The literature review identified several DR screening strategies employed globally:

- Direct and Indirect Ophthalmoscopy: These methods utilize specialized instruments for visual examination of the retina.
- Retinal Photography: This technique captures high-resolution images of the retina, facilitating detailed analysis and detection of DR.
- Telemedicine Approaches: Remote screening via digital imaging allows for broader accessibility, particularly in underserved areas.
- Community-Based Screening Initiatives: Engaging local healthcare workers to conduct screenings can enhance outreach and participation.

2. Economic Considerations

The cost-effectiveness of various screening strategies was assessed, revealing that:

- Retinal Photography tends to be more resource-intensive but offers comprehensive data for diagnosis.
- Importance of the diabetic retinopathy: Assessing the prevalence and severity of diabetic retinopathy in the target population. The IDF-IAPB estimates that 4.8 million people with diabetes worldwide are living with vision loss due to DR.
- Performance of Diagnostic Methods: Evaluating the accuracy and reliability of screening tools.
- Efficiency and Effectiveness of the Program: Assessing the program's impact on reducing vision loss and improving health outcomes.
- Social, Ethical, and Organizational Considerations: Addressing the ethical implications, cultural sensitivity, and logistical challenges of implementing a screening program.

2. Multiple Rationalities and Barriers to Participation

The review identified several factors influencing individuals' decisions to participate in DR screening programs, categorized using Max Weber's typology of action:

• Tradition: Individuals' decisions were influenced by established practices and beliefs.
• Affect: Emotional factors, such as fear of vision loss, played a role in decision-making.
• Value: Individuals prioritized certain values, such as seeking quality healthcare, even if it came at a cost.
• Instrumental Rationality: Individuals made decisions based on a calculated assessment of costs and benefits.

Key themes emerged from the qualitative analysis:
• Trust in the Healthcare System: Individuals expressed trust in their healthcare providers, often citing long-standing relationships with their doctors.
• Perceived Risk: Participants acknowledged the potential for vision loss and expressed a desire to prevent this outcome.
• Financial Constraints: Financial barriers, including transportation costs and examination fees, were frequently cited as obstacles to participation.
• Cultural Practices: Cultural beliefs and practices influenced some individuals' decisions, with some individuals reporting that their parents never underwent eye examinations.
• Access to Care: The distance to screening centers and limited availability of services were significant barriers for some participants.

3. Reality of DR Screening in Cameroon
The review highlighted the need to address both socioeconomic and cultural barriers to enhance community engagement in DR screening strategies in Cameroon. The study aligns with recommendations from the International Diabetes Federation and the International Agency for the Prevention of Blindness (IDF-IAPB) regarding the need for culturally sensitive and accessible DR screening programs.

Recommendations
• Targeted Outreach Initiatives: Develop outreach programs tailored to specific communities and address their unique needs and concerns.
• Financial Assistance: Provide financial assistance for screening services, including transportation and examination fees, to reduce financial barriers.
• Culturally Tailored Communication Strategies: Develop communication materials and strategies that are culturally sensitive and resonate with the target population.
• Strengthening the Healthcare System: Invest in training and education for healthcare professionals, particularly in rural areas, to improve the quality of care and increase access to screening services.
• Collaboration with Community Leaders: Engage with community leaders and organizations to promote awareness and encourage participation in DR screening programs.

Limitations
The review was limited by the availability of published research on DR screening in Cameroon. Further research is needed to explore the specific challenges and opportunities for implementing effective DR screening programs in the country.

Conclusion
This literature review highlights the importance of addressing both socioeconomic and cultural barriers to enhance community engagement in DR screening programs in Cameroon. The findings underscore the need for a multi-faceted approach that addresses both socioeconomic and cultural barriers to enhance community engagement and improve eye health outcomes for individuals with diabetes. Further research is needed to explore the specific challenges and opportunities for implementing effective DR screening programs in the country.

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