

## Glaucoma, a silent thief of sight: Implication for social work intervention in the prevention of blindness in Nigeria.

Ogechi Cecilia Chukwu<sup>1</sup> & Ugbe Philomena Amokeye<sup>2</sup>

Department of Social Work, University of Calabar, Calabar, Nigeria.

Corresponding author: <sup>1</sup>ogechicecilia7988@gmail.com

### Abstract

Glaucoma, often called the "silent thief of sight," is a leading cause of irreversible blindness worldwide, particularly in Nigeria, where its prevalence among adults over 40 is approximately 5.02%. The disease is insidious, progressing without noticeable symptoms until significant vision loss occurs. This poses a critical social challenge, as many individuals remain undiagnosed and untreated, with only about 10% receiving appropriate care. In Nigeria, the implications for social work intervention are profound. Social workers can play a pivotal role in increasing awareness and understanding of glaucoma through targeted community outreach programs. By educating high-risk populations about the importance of regular eye examinations, social workers can facilitate early detection and intervention. Additionally, social workers can collaborate with eye care providers to improve access to eye care services, particularly in underserved areas. They can advocate for the integration of glaucoma screening into primary healthcare, ensuring that preventative measures are accessible to all. Support and counseling for diagnosed individuals are also essential, as social workers can help patients navigate their treatment options and adhere to prescribed care plans. Furthermore, by engaging with policymakers, social workers can address systemic barriers to eye care access, such as cost and availability. By harnessing their skills and resources, social workers can significantly contribute to the prevention of blindness from glaucoma in Nigeria, ultimately enhancing the quality of life for individuals at risk and fostering healthier communities.

**Keywords:** Glaucoma, Social work intervention, Eye care access, Community outreach, Blindness prevention

### Introduction

Glaucoma is the commonest cause of avoidable and irreversible blindness worldwide (Fatima K, Bola A, Mohammed, Abdullahi Sadiq M and Farouk G, 2018). Glaucoma is a disease that damages the eyes' optic nerve if left untreated and it usually happens when fluid builds up in the front part of the eye. The buildup of this extra fluid increases the pressure in the eye damaging the optic nerve. As a result of this, there is gradual vision deterioration which is usually worse in one eye, and the absence of early or no symptoms at all make it difficult for those affected to be aware of the vision loss until the advanced stages of the disease making the disease to be often referred as the "*silent thief of sight*" (Fatima et al, 2018). This indeed has propelled researchers, social workers alike to focus attention on how glaucoma can be managed with optimal prognosis, through awareness creation and counseling. People with glaucoma often present late, and eye care professionals face many constraints in managing it. Late presentation of glaucoma is a common phenomenon in sub-Saharan Africa, (Kyari, Wormald, Murthy, 2016). There are usually no noticeable early symptoms for glaucoma that may prompt patients to seek an eye examination or treatment. This means that unless regular or periodic eye examinations are done, most patients are diagnosed with very advanced disease in one or both eyes (Kyari et al, 2016). Furthermore, patients' understanding of glaucoma and compliance of treatment is low and the poor people are more likely to become blind from glaucoma (Olawoye, Fawole, Teng, 2013). Risk factors of glaucoma include age, hypertension, drugs, trauma, race/ethnicity, and family history, but the main modifiable risk factor for disease progression is intraocular pressure (Rao, Addepalli, Jonnadula, Kumbar, Senthil, and Garudadri.2013). However, proper management requires close monitoring of optic nerve health and may include complicated medical regimens, which may be more challenging for those with mental health conditions to manage

Global prevalence of glaucoma has been estimated to be 3.54%, though geographic variations exist. Incidence of Primary Open Angle Glaucoma has been found to be highest in African countries (Tham, Li, Wong, Quigley, Aung, Cheng, 2014). The global prevalence rate

of glaucoma calls for concern and interventions especially Social Work Interventions to prevent a greater percentage of people going blind because many of the people with glaucoma are not aware of the disease. Presently, 80 million people are affected with glaucoma, worldwide and this number is expected to rise to almost 111 million by the year 2040 (Tham et al, 2014). A review of blindness and visual impairment surveys in sub-Saharan Africa indicate that glaucoma affects about 4 % of adults aged 40 years and above and accounts for 15 % of blindness (Bastawrous, Burgess, Mahdi, Kyari, Burton, Kuper. 2014). Africa is the region with the highest incidence and prevalence of glaucoma, most of which is open-angle glaucoma (OAG) (tham et al, 2014).

The Nigeria Blindness Survey reported the prevalence of blindness to be 4.2 % (95 % confidence interval 3.8–4.6 %) with 16.7 % being due to glaucoma (Kyari, Abdull, Sallo, Spry, Wormald, Peto. 2015). Primary open angle glaucoma (POAG) is the most common form of glaucoma among Africans (Kyari, Entekume, Rabi, Spry, Wormald, Nolan, 2015) and contributes to 8.4 million cases of bilateral blindness even in developed countries with half of the cases still undiagnosed. In Nigeria, 1,130,000 individuals'  $\geq 40$  years are blind and 4.25 million have moderate to severe visual impairment (Duke, Akinye, Ameh. 2016). About 90% of people who have glaucoma in the developing countries such as Nigeria are not aware that they have this disease (Tham et al 2014). This implies that many may develop severe visual impairment or blindness with its attendant psychological effects.

There have not been studies for the prevalence rate of glaucoma in Cross River State, not until in 2010 when Ekpenyong, B.N, founder of Benita Eye Clinic Calabar carried out a study on the epidemiology of blinding eye diseases in Cross River State. The study found that glaucoma is the third most prevalent blinding eye disease in Cross River State and accounted for 11 % of the total prevalence of blinding diseases and causes 20.3% of total blindness. However, Owing to the slow and silent progression of glaucoma, the disease remains undiagnosed in many individuals until it gets to the very advanced stages after silently cutting off the peripheral visual fields. As the population ages, the prevalence of glaucoma is expected to increase significantly in the coming decades (Ekpenyong, 2010). Effective management of glaucoma is crucial to prevent vision loss and maintain quality of life for those affected. Critical to this prevention is health promotion, awareness and sensitization by not only Eye Care Practitioners, but Social Workers alike.

Vision loss due to glaucoma can have significant negative effects on an individual's social status and functioning. It is associated with a reduced quality of life, including difficulties in reading, restrictions in activities, employment and mobility (Klauke, Sondocie, Fine, 2023). Low vision and blindness are risk factors for anxiety and depression and withdrawal from pleasurable and social activities due to vision impairment can worsen anxiety and depressive symptoms in a bidirectional relationship (Klauke et al 2023). Reduced vision has far-reaching consequences beyond just functional limitations, and can lead to social isolation, mental health issues, and a diminished social status for affected individuals (Retinal Consultants Medical Group, 2023) and so the expertise of social workers can help mitigate these effects through sustained awareness, counseling and sensitization services and health advocacy and support interventions.

The National Association of Social Workers (NASW) cited in (Hark, Madhava, Radakrishnan, Anderson-Quñones, Robinson, Adeghate, Silva, Zhan, Adepoju, Dave, and Fudenberg. 2019) defines social work interventions as purposeful actions taken by social workers to address the needs and challenges faced by individuals, families, groups, or communities. These interventions aim to promote positive change, enhance well-being, and create a more equitable society. Social work interventions can range from one-on-one

counseling to community-wide policy implementations (Fudenberg et al, 2016). The primary goal is to help clients overcome obstacles and achieve their full potential by providing support, resources, linkages and guidance. Social work interventions can play a key role in improving glaucoma care and patient outcomes. Social workers are in the unique position to assess and address the multifaceted needs of patients with glaucoma, including emotional, practical, and social challenges. By working hand in hand with eye care professionals, social workers can help patients overcome barriers to care, adhere to treatment, and adapt to vision changes.

This paper seeks to examine the potential impact of social work interventions in glaucoma prevention and management. It highlights evidence-based strategies for integrating social work practice into glaucoma care services and discusses the benefits for patients, families, and healthcare systems. This paper therefore adopted a theoretical approach to underscore the importance of social work intervention in the prevention and management of glaucoma in Nigeria.

## **Literature review**

### ***Psychological effects of glaucoma and Social Work Intervention***

Glaucoma is a group of eye conditions that damage the optic nerve and can lead to vision loss or even permanent blindness if left untreated and can also significantly affect a person's psychological state. As glaucoma progresses, the gradual loss of vision can lead to feelings of uncertainty, vulnerability, and a reduced sense of independence. Daily tasks that were simple before can become very strenuous thereby leading to a reduction in self-confidence and self-value (Ubochi, Achigbu, Nkwogu, Onyia, & Okeke, 2020). According to the U.S. Centers for Disease Control and Prevention, reduced vision among mature adults has been shown to result in social isolation and depression. (Lundeen, Saydah, Ehrlich, & Saaddine. 2021).

Social interaction for glaucoma patients can change significantly over time due to the progressive nature of the chronic disease and its effects on the patients' daily life. (Kumar, Ichhpujani, Singh, Thakur, Sharma, Nagpal. 2018). Patients experience shock at the first time of diagnosis. Some even deny and reject the disease largely due to their religious and cultural beliefs and often times result to spiritual houses and churches for intervention rather than taking up appropriate medical care and counseling services to help mitigate and or adapt to the situation. For instance, a woman seen at the St Cecilia eye clinic on the 22<sup>nd</sup> of July 2023 insisted that the Holy Spirit instructed her not to touch her eyes nor undergo any surgical procedure in her eyes or else she will be blind. Such beliefs eventually affect the medical treatment outcome / prognosis. Many a times, patients feel overwhelmed by the information and how it can affect their vision and daily life in future. In the early stages, patients hardly notice any changes in their vision and daily activities but they may start noticing some slight changes in their side vision which can trigger stress or anxiety leading to decrease in social interactions. (Sabel, Wang, Cárdenas-Morales, Faiq, Heim. 2018)

As glaucoma progresses to the advanced stages, patients now experience difficulties to carry out their normal day to day activities. (Onwubiko, Nwachukwu, Muomah, Okoloagu, Ngwegu, Nwachukwu, 2020). They experience very obvious and significant reduced vision that may now necessitate them to seek for help to move around from one place to another. They tend to bump into things by their sides. They notice that to see things by the sides, they have to turn to that side. They tend to fully depend on people to bathe, eat, walk around, step out of their houses and even cross roads. At this point, emotional stress and depression sets in for many of them because they can no longer do what they were doing for themselves. (Sabel et al

2018). These changes in their vision leads to reduced social interactions and further leads to isolation, depression and reduced social engagement. (Hark, et al, 2019).

### ***Implication for Social Work Intervention***

There is growing emphasis in health care on the importance of holistic, collaborative care for optimum, patient-centered outcomes and Social work is one profession that can be a fruitful partner to optometry especially throughout the vision rehabilitation process (American Optometric Association, 2019) particularly in counseling services and health promotional services. Patients who would benefit from vision rehabilitation also may benefit from the expertise of a social worker. Social workers can assist glaucoma patients in a variety of ways, particularly regarding providing access to resources, such as food, financial assistance and transportation. They also can be helpful in dealing with a wide variety of issues, such as anxiety and depression or family issues. Social workers not only help patients navigate the health care system; they also provide emotional support, which has been shown to increase appointment adherence (Pizzi, Snitzer, Amos, Prioli, Steele, and Levin. 2015). In one study, a medical social worker in a pediatric ophthalmology setting increased appointment adherence by 45% (Dotan, Truong, Snitzer, McCauley, Martinez Helfman, and Santa Maria. 2015). Social work is a profession and academic discipline that improves the quality of life and wellbeing of individuals, groups and communities by direct practice, policy development; organizing communities and outreach and crisis intervention (Ikpeme, Bassey, Ede & Ikpeme. 2024). They assess the individual needs and circumstances of each patient, considering factors such as emotional well-being, socioeconomic status, family support, and access to resources. Based on this assessment, social workers develop tailored interventions to help patients cope with their diagnosis, adhere to treatment, and maintain independence and quality of life (Leiby, Hegarty, Zhan, Myers, Katz, and Haller. 2021) as well as helping them to adapt to the realities imposed by the disease condition.

A study by Hark et al. (2019) evaluated the effects of a six-month social worker intervention for 40 participants with glaucoma-related diagnoses in an urban ophthalmic setting. The social worker assessed barriers to care and provided assistance with transportation, access to low-vision resources, and supportive counseling. The study found a significant decrease in the number of participants with symptoms of major and moderate depression, and the majority of participants felt that the social worker's support addressed their issues and helped them manage their glaucoma. Fudemberg et al. (2016) investigated the patient response to a medical social worker in a glaucoma clinic. The study included 50 patients with glaucoma referred to a medical social worker over a six-month period. Patients rated their interaction with the social worker as highly positive, and nearly 90% expressed interest in future contact. Most patients reported that the social worker resolved the issues they were facing, supported them in seeing their ophthalmologist, and helped them manage their glaucoma.

### ***Counseling and patient education***

Social work counseling is a form of helping that is focused on the patients' needs as perceived by the patient, and not on what others consider these needs to be. (Hark et al, 2019). The counsellor does his/her best to listen to the patients, work with them to find the best way to understand and resolve their problems. Counseling must be done in a private and confidential setting attentively to understand the patients' perspective. (American Psychological Association, 2019). Counseling helps patients realize that there is a way for them to make a choice or change direction. (Ikpeme, 2016). Counseling is a crucial aspect of glaucoma management, as it helps patients understand their condition, accept their prognosis, and make informed decisions about treatment. (Hark et al, 2019). Ideally, a dedicated counselor should be part of the glaucoma care team, with close communication between the counselor and

clinical personnel. Social workers can be trained as glaucoma counselors, as long as they are approachable, skilled at communicating with patients and their families, and have a good understanding of glaucoma and its treatment. (Fudenberg et al, 2016). The counselor's role includes providing information about the disease, explaining the purpose and importance of treatment and helping patients adapt to their condition and improve their daily living.

Patient education is also essential in glaucoma management (Newman-Casey, Musser, Niziol, Heisler, Kamat, Shah, Patel, & Cohn. 2019). Studies have shown that educational interventions can improve patient knowledge, reduce anxiety, and increase treatment satisfaction. (Oermann, 2001, 2003). Glaucoma Australia conducted a randomized clinical trial evaluating the association between glaucoma education and patient outcomes, finding that education was associated with improved knowledge and treatment satisfaction (Rees, Ponczek, Hassell, Keefe & Lamoureux, 2014).

### ***Peer support and mentoring***

Peer mentoring is a very useful strategy (Fatima, Heiko, Peter, Hannah, Sani and Mohammed 2022). This is where the patient is connected to another person with a similar condition to provide guidance towards developing self-help or personal grooming skills, for example. These are often organized by patients for patients and their relatives, the social worker can help the patients by identifying Support and peer mentoring groups that can be of valuable help for patients with glaucoma. Support groups provide a platform for patients to learn from each other, share experiences, and develop strategies for managing their condition. Peer mentoring connects patients with similar conditions to provide guidance and support in developing self-help skills and adapting to lifestyle changes (Fatima et al, 2022).

A study by Rees et al, (2014), examined the impact of a peer support program for individuals with glaucoma. The program involved monthly support group meetings facilitated by a social worker and attended by patients with glaucoma and their family members. Participants reported increased knowledge about glaucoma, improved coping strategies, and reduced feelings of isolation. The study highlights the potential benefits of peer support in enhancing patient wellbeing and self management.

### ***Overcoming barriers to eye care***

Addressing barriers to eye care is crucial in glaucoma management, as regular visits to eye care providers and adherence to treatment are essential for preventing vision loss. Barriers may include emotional distress, financial constraints, lack of transportation, and difficulties with daily activities as well as cultural and religious belief patterns which prevents patients from accessing health care services. . Social workers can play a key role in helping patients overcome these barriers. In the study by Hark et al (2019), the most common barrier to eye care was emotional distress, which was addressed through supportive counseling. The study by Fudenberg et al (2016) also identified barriers such as cost of office visits and medications, lack of medical insurance, transportation difficulties, poor medication adherence, and impairment of daily activities. By assessing and addressing these barriers, social workers can help patients engage in regular eye care and adhere to treatment recommendations, ultimately improving their prognosis and quality of life.

### ***Theoretical orientation***

Numerous social work theories and models can be effectively applied to glaucoma management but for this study, the theoretical orientation can be grounded in two key social work models that will help social workers understand the complexities of patient experiences and guide effective interventions.

***The task centered model / person centered approach***

The task centered model formulated by Laura Epstein and Williams Reid (1972) was designed to help clients and practitioners collaborate on specific, measurable, and achievable goals. This model helps glaucoma patients set and achieve health goals through a structured four step approach that includes;

- Initial assessment to identify the patients' specific needs, challenges and barriers related to glaucoma management.
- Goal setting to establish realistic and achievable health goals like adhering to prescribed medications, attending regular examinations and implementing lifestyle changes that support eye health such as exercise or dietary adjustments.
- Action / implementation to share the outcomes of the specific tasks that were agreed upon.
- Termination consideration after a successful intervention or another goal setting process if outcome wasn't good.

By applying the task-centered approach, social workers empower glaucoma patients to take an active role in their care, set achievable health goals and navigate through the complexities of managing their condition. This approach not only enhances adherence to treatment but also improves the overall quality of life for patients living with glaucoma.

***Person – Centered Approach:*** This can also be called the Client – Centered Approach or therapy (Ushie and Jonah 2022). This approach was primarily propounded by Carl Rogers, an American psychologist. This approach emphasizes that it is important to understand individual's experiences and so advocates for an empathetic and non-judgmental environment that will help foster growth and self actualization. This approach promotes the idea that clients should be active participants in their own care and decision – making processes. By applying person –centered approach, Social Workers can empower glaucoma patients to take an active role in their care, set meaningful goals and develop the knowledge, skills and confidence needed to effectively manage their condition and achieve optimal health outcomes. (Du Toit, 2015).

***The Health Belief Model (HBM):*** Developed by social psychologists at the US. Public Health Service, including Irwin M. Rosenstock in the 1950s was inspired by the need to understand why individuals often failed to engage in preventive health behaviours. The HBM states that a person's beliefs about health risks, perceived benefits of preventive actions and perceived barriers to those actions significantly influence their behaviour decisions. The Health Belief Model can be a valuable framework for social workers to understand and promote adherence to glaucoma management among patients (Awad K, Awad R, Elkazaz H, et al ....2022). Social workers can use the HBM to assess a patient's perceived susceptibility to vision loss for glaucoma, perceived severity of consequences, perceived benefits of treatment adherence and perceived barriers to using eye drops consistently. This will help to identify areas to target in interventions.

Applying the Health Belief Model will help Social Workers to gain insight into the patient's beliefs about glaucoma and its treatment, tailor interventions to address key determinants of treatment adherence and evaluate the impact of their practice on promoting vision preservation. By leveraging the HBM, Social Workers can significantly improve glaucoma management and promote better health outcome for patients.

## Conclusion

As the prevalence of glaucoma continues to rise, it is essential for eye care providers to adopt a multidisciplinary approach that incorporates social work interventions. Social work interventions have the potential to significantly improve glaucoma management and patient outcomes. By assessing and addressing barriers to eye care, providing supportive counseling, and connecting patients with resources and support networks, social workers can play a crucial role in enhancing patient well-being and preventing vision loss.

## Recommendations

1. **Engagement of Social Workers in Eye Care Facilities:** Social Workers should be engaged in eye care facilities with the aim of improving patient outcomes, enhanced support systems and a more holistic approach to glaucoma management leading to a decent quality of life.
2. **Assessment of the psychological state of the patient should be included as a part of glaucoma management:** Earlier, management for glaucoma was aimed only at preserving the visual function by control of intraocular pressure. Less emphasis was given to psychological impact of the disease as well as its implication on quality of life of the patients. Today, with the data from various studies, we now know the mental, social, financial and psychological implications of the disease. Considering the prevalence of glaucoma, the magnitude of problem is tremendous. Hence, mere treatment of raised intraocular pressure may not be sufficient.
3. **Establish Funding for Social Work Positions:** Government should allocate resources specifically for hiring and training social workers within the government owed ophthalmology departments to address the psychosocial needs of glaucoma patients. This will greatly help to improve care coordination and patient support.
4. **Research and Evaluation:** Future research should focus on developing and evaluating evidence-based social work interventions for glaucoma care, as well as exploring the long-term impact of these interventions on patient outcomes and healthcare costs. By investing in social work interventions, the eye care community can make significant strides in improving the lives of individuals affected by glaucoma.

## References

- Awad, K., Awad, R., Elkazaz, H., et al. (2022). Applying the health belief model to predict preference for surgical intervention versus medical therapy among patients with open-angle glaucoma. *BMJ Open Ophthalmology*, 7, e001113. <https://doi.org/10.1136/bmjophth-2022-001113>
- Bastawrous, A., Burgess, P. I., Mahdi, A. M., Kyari, F., Burton, M. J., & Kuper, H. (2014). Posterior segment eye disease in sub-Saharan Africa: Review of recent population-based studies. *Tropical Medicine & International Health*, 19(5), 600–609.
- Dotan, G., Truong, B., Snitzer, M., McCauley, C., Martinez Helfman, S., & Santa Maria, K. (2015). Outcomes of an inner-city vision outreach program: Give kids sight day. *JAMA Ophthalmology*, 133(5), 527–532.
- Du Toit, R. (2015). How to do a person-centered eye health consultation. *Community Eye Health*, 28(90), 36.
- Duke, R., Akinye, A., & Ameh, S. (2016). Presenting visual acuity and ocular comorbidity in patients with primary open-angle glaucoma in a private tertiary eye center in Nigeria. *Journal of Current Glaucoma Practice*, 7(1), 6–10. <https://doi.org/10.5005/jp-journals-10008-1129>

- Fatima, K., Bola, A., Mohammed, A., Sadiq, M. A., & Farouk, G. (2018). The current status of glaucoma and glaucoma care in sub-Saharan Africa. *Asia-Pacific Journal of Ophthalmology*, 7(6), November/December.
- Fudemberg, S. J., Amarasekera, D. C., Silverstein, M. H., Linder, K. M., Heffner, P. M., Hark, L. A., & Waisbourd, M. (2016). Overcoming barriers to eye care: Patient response to a medical social worker in a glaucoma service. *Journal of Community Health*, 41(4), 845–849.
- Goh, Y. W., Fenwick, E. K., Cheung, C. Y., Lamoureux, E. L., & Sabanayagam, C. (2018). Glaucoma Australia educational impact study: A randomized short-term clinical trial evaluating the association between glaucoma education and patient knowledge, anxiety, and treatment satisfaction. *Clinical & Experimental Ophthalmology*, 46(3), 222–231.
- Hark, L. A., Madhava, M., Radakrishnan, A., Anderson-Quñones, C., Robinson, D., Adeghate, J., Silva, S., Zhan, T., Adepoju, T., Dave, Y., & Fudemberg, S. J. (2019). Impact of a social worker in a glaucoma eye care service: A prospective study. *Health & Social Work*, 44(1), 48–56. <https://doi.org/10.1093/hsw/hly038>
- Ikpeme, B. (2016). *The role of social worker in ophthalmology department, UCTH, Calabar*. (Unpublished manuscript).
- Ikpeme, B. B., Ede, V. I., & Ikpeme, B. B. (2024). *Impact of a social worker in a glaucoma eye care service*. *Journal of Ophthalmology*, 2(1), 15–23.
- Klauke, S., Sondocie, C., & Fine, I. (2023). The impact of low vision on social function: The potential importance of lost visual social cues. *Journal of Optometry*, 16(1), 3–11. <https://doi.org/10.1016/j.optom.2022.03.003>
- Kumar, S., Ichhpujani, P., Singh, R., Thakur, S., Sharma, M., & Nagpal, N. (2018). The impact of primary open-angle glaucoma: Quality of life in Indian patients. *Indian Journal of Ophthalmology*, 66(3), 416–419.
- Kyari, F., Abdull, M. M., Sallo, F. B., Spry, P. G., Wormald, R., Peto, T., et al. (2015). Nigeria normative data for defining glaucoma in prevalence surveys. *Ophthalmic Epidemiology*, 22, 98–108.
- Kyari, F., Entekume, G., Rabi, M., Spry, P., Wormald, R., Nolan, W., et al. (2015). A population-based survey of the prevalence and types of glaucoma in Nigeria: Results from the Nigeria national blindness and visual impairment survey. *BMC Ophthalmology*, 15, 176. <https://doi.org/10.1186/s12886-015-0160-6>
- Kyari, F., Philipppin, H., Shah, P., & Faal, H. (2016). Counselling in a glaucoma care service. *Community Eye Health*, 29(95), 51–53.
- Kyari, F., Wormald, R., Murthy, G. V., et al. (2016). Ethnicity and deprivation are associated with blindness among adults with primary glaucoma in Nigeria: Results from the Nigeria national blindness and visual impairment survey. *Journal of Glaucoma*, 25, e861–e872.
- Leiby, B. E., Hegarty, S. E., Zhan, T., Myers, J. S., Katz, L. J., Haller, J. A., et al. (2021). A randomized trial to improve adherence to follow-up eye examinations among people with glaucoma. *Preventing Chronic Disease*, 18, 200567. <https://doi.org/10.5888/pcd18.200567>
- Lundeen, E. A., Saydah, S., Ehrlich, J. R., & Saaddine, J. (2021). Self-reported vision impairment and psychological distress in U.S. adults. *Ophthalmic Epidemiology*, 29(2), 171–181. <https://doi.org/10.1080/09286586.2021.1918177>
- Newman-Casey, P. A., Musser, J. A., Niziol, L. M., Heisler, M. M., Kamat, S. S., Shah, M. M., Patel, N., & Cohn, A. M. (2019). Integrating patient education into the glaucoma clinical encounter: A lean analysis. *Journal of Glaucoma*, 28(5), 415–422. <https://doi.org/10.1097/IJG.0000000000001192>



- Odberg, T., Jakobsen, J. E., Hultgren, S. J., & Halseide, R. (2001). The impact of glaucoma on the quality of life of patients in Norway: Results from a self-administered questionnaire. *Acta Ophthalmologica Scandinavica*, 79(2), 116-120.
- Oermann, M. H. (2003). Effects of educational intervention in waiting room on patient satisfaction. *Journal of Ambulatory Care Management*, 26, 150-158.
- Oermann, M. H., Needham, C. A., Dobal, M. T., Sinishtaj, L., & Lange, M. P. (2001). Filling the waiting time in the clinic with education about glaucoma. *Insight*, 26, 77-80.
- Olawoye, O., Fawole, O. I., Teng, C. C., et al. (2013). Evaluation of community eye outreach programs for early glaucoma detection in Nigeria. *Clinical Ophthalmology*, 7, 1753-1759.
- Onwubiko, S. N., Nwachukwu, N. Z., Muomah, R. C., Okoloagu, N. M., Ngwegu, O. M., & Nwachukwu, D. C. (2020). Factors associated with depression and anxiety among glaucoma patients in a tertiary hospital South-East Nigeria. *Nigerian Journal of Clinical Practice*, 23, 315-321.
- Pizzi, L. T., Snitzer, M., Amos, T., Prioli, K. M., Steele, D., & Levin, A. V. (2015). Cost and effectiveness of an eye care adherence program for Philadelphia children with significant visual impairment. *Population Health Management*, 18(3), 223-231.
- Rao, H. L., Addepalli, U. K., Jonnadula, G. B., Kumbar, T., Senthil, S., & Garudadri, C. S. (2013). Relationship between intraocular pressure and rate of visual field progression in treated glaucoma. *Journal of Glaucoma*, 22(9), 719-724. <https://doi.org/10.1097/IJG.0b013e318259b0c2>
- Rees, G., Ponczek, E., Hassell, J., Keeffe, J. E., & Lamoureux, E. L. (2014). Persons with glaucoma and their caregivers: Beliefs about glaucoma and its treatment. *Patient Education and Counseling*, 96(2), 240-246.
- Sabel, B. A., Wang, J., Cárdenas-Morales, L., Faiq, M., & Heim, C. (2018). Mental stress as consequence and cause of vision loss: The dawn of psychosomatic ophthalmology for preventive and personalized medicine. *EPMA Journal*, 9(2), 133-160. <https://doi.org/10.1007/s13167-018-0136-8>
- Tham, Y.-C., Li, X., Wong, T. Y., Quigley, H. A., Aung, T., & Cheng, C.-Y. (2014). Global prevalence of glaucoma and projections of glaucoma burden through 2040. *Ophthalmology*, 121(11), 2081-2090.
- The impact of low vision on social function: The potential importance... Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9811370/>
- The social impact of visual impairments. *RCMG Blog*. Retrieved from <https://www.retinalmd.com/blog/the-social-impact-of-visual-impairments-strategies-for-maintaining-a-healthy-social-life>
- Ubochi, C. C., Achigbu, E. O., Nkwogu, F. U., Onyia, O. E., & Okeke, C. J. (2020). The impact of glaucoma on the mental health of primary open-angle glaucoma patients attending a teaching hospital in South East Nigeria. *Journal of the West African College of Surgeons*, 10(2), 17-22. [https://doi.org/10.4103/jwas.jwas\\_59\\_21](https://doi.org/10.4103/jwas.jwas_59_21)
- Ushie, M. A., & Jonah, S. E. (2022). *Basics in social work: Theories and applied*.
- Weinreb, R. N., Aung, T., & Meideiros, F. A. (2014). The pathophysiology and treatment of glaucoma: A review. *JAMA*, 311, 1901-1911.