DOI 10.5935/0034-7280.20210001

Glaucoma, collective health and social impact

Glaucoma, saúde coletiva e impacto social

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Visual disability and blindness have significant individual repercussions, since vision is the prevalent sense used by humans at all life stages. [1–3] The impact of these conditions on individuals' families, caregivers, health systems and, finally, on society as a whole, is also significant. According to the World Health Organization (WHO), it is estimated that more than 2 billion individuals worldwide have some visual disability type and that at least 1 billion of these cases could have been prevented. [1] Most visual disability and blindness cases affect individuals older than 50 years. [1]

The Global Burden of Disease study conducted by WHO (2017) has identified visual disability as the 3rd main cause of long--term disabilities experienced by individuals. The social repercussions of visual disability comprise impact on the jobs, quality of life and care needs of the disabled ones. In addition, such repercussions encompass significant economic impact caused by direct medical, non-medical and indirect costs. [1]

Glaucoma stands out as the main cause of blindness and irreversible visual disability in Brazil and abroad. Studies have estimated that 76 million individuals worldwide would have glaucoma by 2020 and that this number should reach 95.4 million by 2030. [4–6] Primary open-angle (POAG) and closed-angle (CAG) glaucomas are the most frequent types of the disease. [6–8] The distribution of these glaucoma types is influenced by geographical area and population ethnicity. POAG is certainly the most common glaucoma type in Brazil - it accounts for approximately 80% of cases in the Western world. [4,9]

Glaucoma prevalence and incidence rates increase as individuals age and they are strongly influenced by individuals' ethnicity. Schoff et al. have shown the influence of aging on glaucoma incidence. Forty-year-old individuals account for approximately 1.6 new glaucoma cases per 100,000 inhabitants on a yearly basis, whereas 80-year-old individuals account for 94.3 of cases per 100,000 inhabitants. [10] According to Friedman et al., glaucoma prevalence among white and black individuals in the age group 73-74 years is 3.4% and 5.7%, respectively. These rates increase to 9.4% and 23.2% for these same groups if one takes into consideration the age group 75 years or older. [11,12]

Studies about glaucoma prevalence and incidence in Brazil remain scarce in the literature. Sakata et al. have conducted a pioneering population study in Southern Brazil and found glaucoma prevalence of 3.4% in the population older than 40 years. [13] If one takes into consideration glaucoma prevalence rates recorded by Friedman et al, it is possible inferring that 10% to 20% of the population older than 75 years would have glaucoma, which, according to IBGE, corresponds to 809,000 to 1,600,000 Brazilian citizens with glaucoma by 2020.

Increased glaucoma prevalence is expected in the coming years as the population grows and life expectancy increases. Consequently, the economic and social impacts of such a prevalence are expected to significantly increase. Actions at individual, collective and social levels must be planned to enable facing this reality.

The action field of Collective Health goes beyond public health measures. Public Health focuses on health issues defined as diseases, injuries, risks and deaths, whereas Collective Health incorporates the broader concept of "health need", i.e., all conditions required not only to avoid the disease and prolong individuals' life, but also to improve their quality of life and enable the exercise of human freedom in pursuit of individual and collective happiness. In order to do so, Collective Health incorporates Social and Human Sciences' knowledge to the Health field. [14]

Fight against glaucoma in Collective Health comprises several fronts, namely: health promotion, prevention (secondary, tertiary and quaternary), treatment and rehabilitation. [1,15]

Health promotion in glaucoma cases involves awareness campaigns focused on its early diagnosis through full eye examinations, as well as on publicizing the main risk factors for its emergence. Awareness campaigns should focus on populations at the greatest risk, such as individuals older than certain age groups (for example: older than 60 years) and family members of glaucoma patients. [15,16] Campaigns aimed at using primary healthcare professionals to instruct their patients about the importance of undergoing eye examination on a regular basis, as well as about the main risk factors for glaucoma, may be more effective and important.

Since glaucoma is a genetic origin disease, its primary prevention (preventing its onset from happening) remains impractical. Thus, the only way to prevent its progression into blindness lies on secondary (early diagnosis and effective treatment), tertiary (limiting disease's sequelae and performing rehabilitation) and quaternary prevention (avoiding inappropriate, iatrogenic or ethically questionable diagnostic and/or therapeutic interventions).

Secondary prevention comprises the active search for glaucoma cases in the population, based on targeted screening approaches, in order to identify the disease at its earlier stages. Glaucoma is often diagnosed at advanced stage, when the resources necessary for disease treatment and control are overall more costly. [17]

It is known that campaigns focused on screening the population for glaucoma are not cost-effective. [18] Screenings carried out in specific populations at greater risk of developing the disease are the most efficient ones. Opportunistic case detection - i.e., the active

search for glaucoma cases in patients who resort to ophthalmology services for routine examinations - is also cost-effective. [19] In this case, routine eye exams should be encouraged, since evidence has shown that costs decrease and patients' quality of life improves when glaucoma is diagnosed and treated at early stages.

The prevention of visual disability due to glaucoma also requires fighting social inequalities, as well as making it easier for glaucoma patients to have access to effective and safe diagnostic and therapeutic resources. The National Policy for Ophthalmological Care - Glaucoma Care - in Brazil has established reference healthcare centers where glaucoma patients have access to specialized consultations, complementary exams and eye drop distribution within the scope of the Brazilian Unified Health System (SUS). This important public policy, which is encouraged and supported by both ophthalmological entities and society, favors many glaucoma patients.[21] According to estimates, approximately 140,000 patients were registered in the program in 2020 (source: DATASUS). If one compares this number to the likely prevalence of glaucoma in Brazil (more than 1 million individuals), it is possible seeing the extent of healthcare coverage yet to be expanded.

The glaucoma program implemented by the Brazilian government has developed the Clinical Protocol and Therapeutic Guidelines (PCDT - Protocolo Clínico e Diretrizes Terapêuticas) for Glaucoma to guide reference centers focused on glaucoma diagnostic and therapy procedures. However, unfortunately, PCDT is restricted to establishing guidelines for clinical treatment based on eye drops and leaves aside laser therapy and surgeries. [21]

It is now known that several patients undergoing clinical treatment keep on progressing to visual disability due to limitations in chronic eye drop using such as low fidelity, impact on patients' quality of life and drug toxicity. Studies have shown remarkably low adherence to treatment (approximately 50%) among patients registered at SUS glaucoma reference centers.[22] The larger the number of drugs used by patients and the greater the frequency of adverse effects, the worse their quality of life. [23] Increasing evidences in the literature have proved the toxicity of eye drop preservatives to superficial and deep ocular tissues. [24]

PCDT should be updated by including guidelines for laser trabeculoplasty and anti-glaucoma surgeries (micro-invasive and traditional). Data available in the literature have proven that glaucoma patients treated early with therapeutic techniques capable of removing the main role played by them in the treatment presented better disease control and decreased disease progression rate, as well as spent lesser resources. Laser surgeries have drawn great attention as primary cost-effective therapy for POAG. [25,26] Micro-invasive surgeries, such as trabecular implants, have proved to be cost-effective in the long-term treatment of early-to-moderate glaucoma, [27] whereas filtration surgery is the most cost-effective option in advanced glaucoma cases. [28]

The rehabilitation of visually disabled patients also plays key role in weakening the social impact of glaucoma. Several resources can help minimizing the impact of visual disability on individuals, their family members, caregivers and on society. Public policies should be encouraged to make people and health professionals aware of the possibility of rehabilitation.

Finally, measures focused on fighting glaucoma at Public Healthcare scope should include actions to be taken at community, primary, secondary and tertiary care levels.

Awareness raising actions for regular eye exams in local populations, as well as for community, school and church leaders' involvement, among others, can significantly contribute to spread the knowledge about this pathology.

Primary care would work as guide for overall eye health promotion, as well as would take actions aimed at raising awareness about, and preventive measures focused on, the main causes of blindness (in the case of glaucoma, by recommending annual examination with the ophthalmologist and by instructing patients about the correct way to use eye drops, among others).

On the other hand, secondary and tertiary care should strengthen and expand the coverage of care provided by glaucoma reference centers at SUS, as well as constantly update the guidelines for glaucoma diagnosis, monitoring and treatment.

The impact of glaucoma goes far beyond the individual scope. Therefore, fighting it means involving the whole society in this venture. Although there have been important advancements in this field, several opportunities to improve the care provided to glaucoma patients, as well as to reduce the impact of this terrible cause of blindness on health systems and on society, are still there.

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