

## Pragmatic research in ophthalmology: Need of the hour

The dictum “Publish or Perish” urges most of the researchers to frame studies with short follow-up period that have surrogate end points under controlled situations to reduce the variability so that the research can be completed and published in a short period of time. These explanatory studies are limited in terms of generalization of the study results. Pragmatic studies defined as real world studies are the need of the hour, which is used to test the usefulness of interventions in the routine-life practice conditions.<sup>[1]</sup> This issue focuses on few such pragmatic studies in ophthalmology.

An individual is considered to have a low vision (LV) if the permanent visual impairment with best-corrected visual acuity is  $< 6/18$  and the perception of light or central visual field is  $< 10^\circ$  because of any untreatable cause in both eyes.<sup>[2]</sup> Around 250 million worldwide and 50 million in India suffer from LV.<sup>[3,4]</sup> The emerging causes of non-curable visual impairment include retinal diseases such as age-related macular degeneration, diabetic retinopathy (DR), hereditary dystrophies and myopic degeneration, glaucoma, optic atrophy of various forms, amblyopia, corneal disease, endophthalmitis, congenital eye anomalies, and higher visual pathway defects.<sup>[5]</sup> As they are noncorrectable and persists life-long, LV aids (LVA) are a boon for improving the quality of vision and thereby the quality of life (QOL). Many LVA have been made available for individuals with LV such as magnifying spectacles, hand magnifiers, stand magnifiers, telescopes and closed-circuit televisions.<sup>[6]</sup> Considering their pitfalls, in the current era of technology, many gadgets such as E-book readers, smartphones and tablets (applications such as MapQuest, Ariadne GPS, Voice interface, Color ID) can also be used as LVA.<sup>[5]</sup> Despite many such available LVA's, their use invariably requires more knowledge and understanding of the techniques that it may not be of benefit to the rural population thus questioning their usefulness. Do *et al.* in this issue published a study where the authors evaluated the effectiveness of LV services using a validated LVQOL survey questionnaire in a rural population. The authors compared the LVQOL in rural patients who received the LVA service with those who did not and found a significant positive impact on QOL in those who availed LVA services. Additionally, the study failed to establish significant differences in the LVQOL score between those who received LVA free of cost and those who paid, and also between individuals with different socio-economic and educational status. The study throws light on the necessity of continuing the LVA services that are being offered in the country.

Malignant glaucoma, a rare entity described by von Graefe, known as early as 1869 as an aggressive form of postoperative glaucoma, is treatment resistant and results in blindness.<sup>[7]</sup> Occurring in around 0.4–6% of the cases, the intraocular pressure in the affected individuals is more than 21 mmHg but in some cases, it may be normal or even low.<sup>[8]</sup> Conventionally, the initial therapy consists of using medications such as cycloplegics, oral acetazolamide and hyperosmotic diuretics. More recently, laser therapy has been found to be promising<sup>[9]</sup> and in nonresponders, surgical options such as vitrectomy can be considered.<sup>[10]</sup> Considering the paucity of data regarding the long-term outcome following zonulo-hyaloido-vitrectomy (ZHV) in pseudo-phakic patients, Madgula *et al.* published a long-term follow-up results of a series of 10 cases. The authors found a recurrence rate of four out of 10 operated cases (40%) after a 4 year follow-up in case of surgery where other modalities could be used successfully. In addition, four serious sight-threatening complications (one each with macular hole and cystoids macular edema and corneal decompensation in two patients) were reported in the case series following ZHV. The study findings reiterate the fact that patients have to be informed regarding the long-term risk of relapse after ZHV. Another pragmatic study with long-term is published by Sukhija *et al.* The authors studied children (26 eyes of 13 children)  $< 2$  years of age with congenital cataract implanted with primary intraocular lens (IOL) and followed-up for a period of 8 years. They found favorable long-term outcome and also suggested aiming an IOL power of 3–4 D hypermetropia in this age group, performing primary posterior capsular capsulorhexis with endocapsular IOL implantation coupled with the amblyopia management.

Diabetic retinopathy ranks sixth amongst the causes of blindness in the world with a prevalence of 18% in diabetics.<sup>[11]</sup> Even in a rural population, DR has been estimated to prevail at a rate of 10%.<sup>[12]</sup> DR in the current milieu of therapeutic interventions is treatable, and blindness can be prevented. Many reasons have been put forth for late detection of DR in diabetics in India: Low ophthalmologist to patient ratio; poor patient compliance to frequent ophthalmological check-ups; unavailability of a suitable screening technique for early detection of DR. Roy *et al.* in this issue published a diagnostic accuracy study evaluating the usefulness of commercially available automated DR detection device “retmarker” for screening in Indian population. A total of 1445 patients were studied and around one-fifth of the images were found to be of poor quality. The device has been found to be highly sensitive to an extent of 95.9–97.1% for high and medium quality images similar to that from western literature. The promising results of the present study suggest the importance of using this device as a screening technique in Indian set-up as well.

It gives me immense pleasure to convey to the readers that we are organizing a “Research Methodology” workshop on 10<sup>th</sup> and 11<sup>th</sup> January 2015 in Mumbai to instil and spread the enigma of research and publication.

Happy reading!!!

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## References

1. Patsopoulos NA. A pragmatic view on pragmatic trials. *Dialogues Clin Neurosci* 2011;13:217-24.
2. World Health Organization. The Management of Low Vision in Children. Report of a WHO Consultation (Bangkok, July 1992). Geneva: World Health Organization, WHO/PBL/93.27; 1993.
3. World Health Organization. Priority Eye Diseases, Refractive Errors and Low Vision Definition. Geneva: WHO; c1992. Available from: [http://www.who.int/blindness/causes/priority/en/inde\\*5.html](http://www.who.int/blindness/causes/priority/en/inde*5.html). [Last accessed on 2015 Jan 02].
4. Pascolini D, Mariotti SP. Global estimates of visual impairment: 2010. *Br J Ophthalmol* 2012;96:614-8.
5. Natarajan S. Low vision aids: A boon. *Indian J Ophthalmol* 2013;61:191-2.
6. Low Vision Rehabilitation-maximising Visual Potential. Shroff Eye. Available from: <http://www.shroffeye.org/wp-content/uploads/2012/06/Low-vision.pdf>. [Last accessed on 2015 Jan 02].
7. Von Graefe A. Beitrage zur pathologie und therapie des glaukoms. *Arch Ophthalmol* 1869;15:108.
8. Shahid H, Salmon JF. Malignant glaucoma: A review of the modern literature. *J Ophthalmol* 2012;2012:852659.
9. Muqit MM, Menage MJ. Malignant glaucoma after phacoemulsification: Treatment with diode laser cyclophotocoagulation. *J Cataract Refract Surg* 2007;33:130-2.
10. Bitrian E, Caprioli J. Pars plana anterior vitrectomy, hyaloido-zonulectomy, and iridectomy for aqueous humor misdirection. *Am J Ophthalmol* 2010;150:82-7.e1.
11. Raman R, Rani PK, Reddi Racheppalle S, Gnanamoorthy P, Uthra S, Kumaramanickavel G, *et al*. Prevalence of diabetic retinopathy in India: Sankara Nethralaya Diabetic Retinopathy Epidemiology and Molecular Genetics Study report 2. *Ophthalmology* 2009;116:311-8.
12. Raman R, Ganesan S, Pal SS, Kulothungan V, Sharma T. Prevalence and risk factors for diabetic retinopathy in rural India. Sankara Nethralaya Diabetic Retinopathy Epidemiology and Molecular Genetic Study III (SN-DREAMS III), report no 2. *BMJ Open Diabetes Res Care* 2014;2:e000005.

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