



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.3594381>Available online at: <http://www.iajps.com>

Research Article

**CLINICAL PROFILE OF PATIENTS PRESENTING TO LOW
VISION CLINIC AT A TERTIARY CENTRE IN ISFAHAN,
IRAN.**¹Dr.Fereshteh Kargar Bafrani, ²Dr.Tannaz Aghaei Badr, ³Dr.Luxhman Gunaseelan,⁴Dr.Abdul Wahab, ⁵Faranak Kargar Bafrani,¹Islamic Azad University, Najaf Abad Branch, Esfahan, Iran.²Tabriz university of medical science, Tabriz, Iran.³Saba University School of Medicine, St Johns, Saba.⁴Medical and Dental College, Karachi, Pakistan.⁵Goethe University, Frankfurt am Main, Germany.**Abstract:**

Objective: - Our present study aims to provide the demographic and clinical traits of the patients presenting to our Low vision tertiary centre in Isfahan, Iran.

Materials and Methods:- - This was a population-based prospective cross-sectional study and included all the patients presenting to our clinic between October-2018 and March-2019. Overall, a total of 790 patients were included in this study after the inclusion criteria are met. We assessed the clinical characteristics of the study populations. The primary presenting complaint in 229 (29%) was impaired distance vision and in 183 (23.1%), it was poor near vision and 378 (47.8%) presented with complaints of both near and distance vision. The most common etiological cause resulting in visual impairment in our study was Age Related Macular Degeneration (ARMD) followed by Diabetic Retinopathy (DR) contributing 176 (22.2%) and 174 (22.0%) respectively.

Results: - A total of 790 patients were included in this study, and it was noted that the mean age of study population was 48.95 (\pm 19.6) years with a range of 5-90 years. Of the total study group, there were 444 (56.2%) males and 346 (43.7%) females.

Conclusion: - Establishing additional Low vision clinics throughout the country to actively identify the individuals with "functional Low vision" through regular screening initiatives is suggested. It was found in our study that majority of the patients visiting our clinic were elderly with Age Related Macular Degeneration and Diabetic Retinopathy. There might be an incongruity between actual number of patients with Low vision and those who seek the medical attention due to multitude of reasons, due to this, it is suggested that multi-centre studies through the country needs to be carried out to build a robust system in diagnosing and treating patients with Low vision and blindness.

Corresponding author:**Dr. Fereshteh Kargar Bafrani,**

Islamic Azad University, Najaf Abad Branch, Esfahan, Iran.

QR code



Please cite this article in press Fereshteh Kargar Bafrani et al., *Clinical Profile Of Patients Presenting To Low Vision Clinic At A Tertiary Centre In Isfahan, Iran., Indo Am. J. P. Sci.*, 2019; 06(12).

INTRODUCTION:

Low vision is defined by World Health Organization (WHO) as visual acuity less than 6/18 and equal to or better than 3/60 in the better eye with best correction. Alternatively, a person is said to have low vision or visual impairment despite undergoing treatment and/or standard refractive correction and still have a visual acuity of less than 6/18 to Light Perception (LP), or a visual field less than 10 degrees from the point of fixation, but uses or is potentially able to use, vision for the planning and/or execution of a task for which vision is essential [1]. It excludes patients whose visual acuity can be improved by surgical and/or medical interventions and refers to functional vision. In the present study, we included patients with functional low vision to avoid ambiguity [2]. Low vision is *per se* not categorised as blindness, and it is thought to have tremendous social and economic implications with regards to economic loss and productivity [3]. It is estimated by WHO that the prevalence of blindness across the globe is approximately around 45 million blind and 135 million with Low vision, with preventable causes of Low vision and blindness contributing 80% of the total global burden [4]. Afshari et al, in their systematic review and Meta-analysis showed that approximately 3% of Iranian population suffer from visual impairment, among which low vision contributed 2.19% (1.60-2.79) and blindness 0.96% (0.60-1.31) [5]. It's worthwhile to notice that 90% of patients categorized as blind retain a certain degree of useable residual vision and are not completely blind. [National Society for the Prevention of Blindness. Vision Problems in the U.S. New York: NSPB; 1980]. Visual impairment is globally recognized as consequential public health problem with provision of low vision services being one of the priorities in the global initiatives, VISION 2020- The Right to Sight. Although there has been a significant progress in identifying and treating the causes of preventable blindness in Iran, with limited available data and studies in this regard along with increasing prevalence of Hypertension, Diabetes, age-related macular degeneration (ARMD), it is expected to further deteriorate the current scenario. Our study aims to gather and assess the clinical data of patients presenting to our clinic with functional low vision so that an updated data on low-vision prevalence is studied and relevant rehabilitation strategies are developed and applied.

MATERIALS AND METHODS:

This was a population-based prospective cross-sectional study and included all the patients presenting to our clinic between October-2018 and March-2019. We included all the study subjects presenting with low vision and those who satisfy the definition of low vision [1]. The study population was examined and assessed with various Low vision devices by an ophthalmologist and/or optometrist with required speciality training at our centre. The patients were administered standardized questionnaire (Functional vision questionnaire). We recorded all the demographic and clinical characteristics of the patients satisfying the inclusion criteria. Colour vision was assessed using Ishihara chart and Visual acuity (VA) using Early treatment diabetic retinopathy study (ETDRS) charts and log MAR for near vision. The distance vision was tested by counting fingers, hand motions and Light perception (LP) and nil light perception (NPL) were given log MAR values of 1.9, 2.3, 2.7 and 3.0 respectively. Overall, a total of 790 patients were included in this study after the inclusion criteria are met.

Statistical analysis was done using the Statistical Program for Social Sciences (Version 25; IBM Corp., Armonk, NY, USA) and MS Excel 2016. Informed consent was obtained priorly from the patients and this study was approved by the Ethics committee of the hospital.

RESULTS:

A total of 790 patients were included in this study, and it was noted that the mean age of study population was 48.95 (\pm 19.6) years with a range of 5-90 years. Of the total study group, there were 444 (56.2%) males and 346 (43.7%) females. The mean age of male patients was 52.6 (\pm 22.8) years whereas it was 45.3 (\pm 25.3) for females. Elderly patient (above 60 years) constituted 35.9% of the patients included followed by 40-60 years age group with 26.2% as presented in the Figure-1. The primary presenting complaint in 229 (29%) was impaired distance vision and in 183 (23.1%), it was poor near vision and 378 (47.8%) presented with complaints of both near and distance vision. The most common etiological cause resulting in visual impairment in our study was Age Related Macular Degeneration (ARMD) followed by Diabetic Retinopathy (DR) contributing 176 (22.2%) and 174 (22.0%) respectively as shown in the Figure-2.

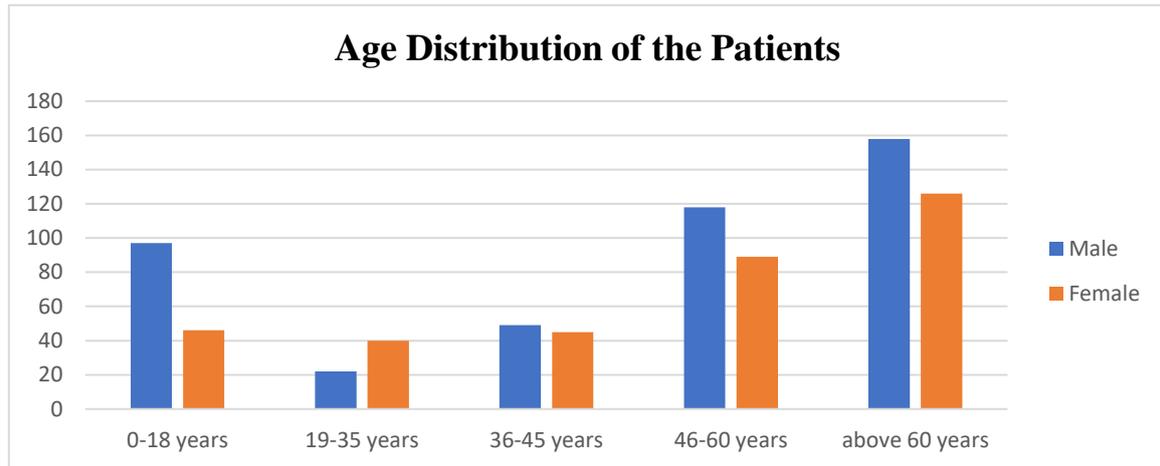


Figure-1 : Age distribution of the study population

Presenting distance visual acuity of the study population (Table-1)

Age group (in years)	0.5-0.8 logMAR	1-1.3 logMAR	<1.3 logMAR
0-18	34	65	44
19-35	17	29	16
36-45	38	31	25
46-60	109	66	32
Above 60	149	84	51

Presenting near visual acuity in the study population (Table-2)

Age group (in years)	N6-N8	N10-N20	N20-N30	N30-N40	>N40
0-18	62	43	27	8	3
18-35	8	10	13	19	12
36-45	12	25	19	20	18
46-60	29	123	27	15	13
Above 60	47	162	31	25	19

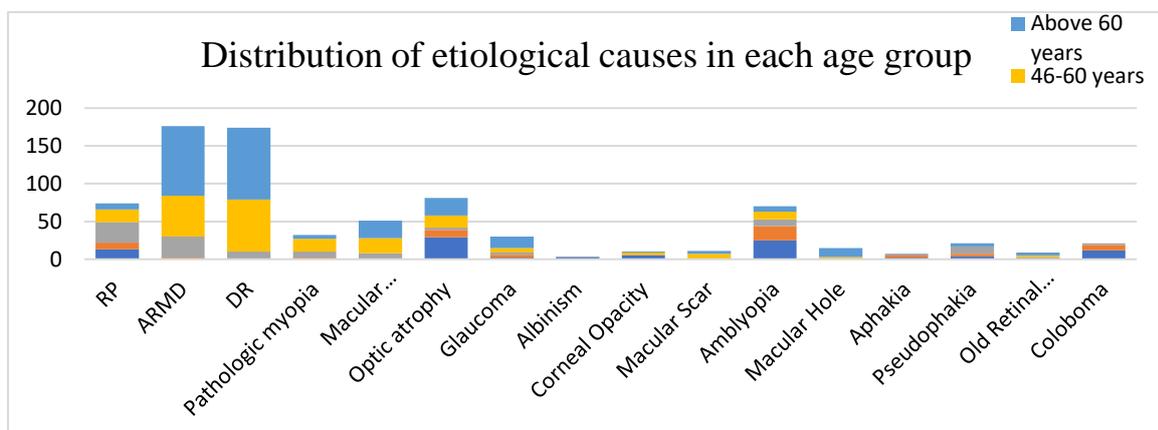


Figure-2: Distribution of etiological causes in each age group

RP: Retinitis Pigmentosa

ARMD: Age Related Macular Degeneration

DR: Diabetic Retinopathy

In the age group 0-18 years, we documented 29 cases of optic atrophy and 25 cases of Amblyopia, which constituted majority of the cases of Low visual acuity in the children and adolescents. In most cases, the patients with Retinitis Pigmentosa (RP) were aged between 36-45 years (36.4%). We noted that the colour vision was normal in 583 (73.7%) patients and rest of the patients (26.2%) with present or earlier diagnosis of Deuteranopia, Protanopia or Tritanopia.

DISCUSSION:

Our present study aims to provide the demographic and clinical traits of the patients presenting to our Low vision tertiary centre in Isfahan, Iran. Although there are multiple various populations surveys, blind school studies and registries across the country, Low vision clinics aids in providing detailed and comprehensive data as compared to the former entities [6,7]. As per the presenting visual acuity, the prevalence of low vision and blindness was 42% and 1.63% respectively. Following the subsequent correction, it was 28.2% and 1.37% respectively. The visual acuity improved in 26% of patients with low vision with the provision of spectacles. This reflects that that the uncorrected refractive errors are the significant cause of low vision. In most cases, the etiological causes of low vision and blindness are treatable, despite that, few studies suggest that grass root level awareness programs and treatment plans against the causes of major preventable infectious diseases and non-infectious conditions has to be undertaken to address the problem caused by low vision and blindness [8]. A study conducted by Khan et al., advocated that lack of awareness and required training in the health care workers and insufficient funding along with non-availability of low vision devices was thought to be major factors in providing inadequate low vision care. As such, the barrier should be studies comprehensively to provide strategic planning [9]. As the rate of low vision and blindness increases with age, the higher prevalence of cataract and ARMD in age group above 60 years in our study is attributed to increasing age. This finding was consistent with other studies carried out across the globe [10-12]. In our study, it was found that a majority of the cases with low vision are attributed to posterior segment disease. In a study done by Mohidin et al., it was noticed that Retinitis pigmentosa was second most common cause of low vision [13]. Similar results were obtained in a study conducted by Sathyan et al., in India [14]. The age distribution in our study differs from the developed nations due to population distribution and increasing middle aged and elderly patient population in western world. In elderly population, routine screening for cataract and regular follow-ups are suggested after undergoing cataract surgery to reduce the burden of the low vision and blindness. The limitation of our study is

that it included patients from only once city, Isfahan in Iran and can't be generalized or may not represent the prevalence across the country.

CONCLUSION:

Establishing additional Low vision clinics throughout the country to actively identify the individuals with "functional Low vision" through regular screening initiatives is suggested. It was found in our study that majority of the patients visiting our clinic were elderly with Age Related Macular Degeneration and Diabetic Retinopathy. There might be an incongruity between actual number of patients with Low vision and those who seek the medical attention due to multitude of reasons, due to this, it is suggested that multi-centre studies through the country needs to be carried out to build a robust system in diagnosing and treating patients with Low vision and blindness.

REFERENCES:

1. World Health Organisation. The management of low vision of childhood. Bangkok: WHO/PBL/93.27; 1993
2. Shah SP, Minto H, Jadoon MZ, Bourne RR, Dineen B, Gilbert CE, Khan MD. Prevalence and causes of functional low vision and implications for services: the Pakistan National Blindness and Visual Impairment Survey. *Invest Ophthalmol Vis Sci.* 2008;49(3):887–893. doi: 10.1167/iov.07-0646
3. Shamanna BR, Dandona L, Rao GN. Economic burden of blindness in India, *Indian J Ophthalmol.* 1998 Sep;46(3):169-72. PMID: 10085631
4. Thylefors B, Negral AD, Pararajasegaram R, Dadzie KY. Global data on blindness. *Bull World Health Organ* 1995; 73:115-21
5. Afshari M, Moosazadeh M, Barzegari S, Abedini E, Salimi SS. Prevalence of Blindness and Low Vision in Iran: A Systematic Review and Meta-Analysis. *Ophthalmic Epidemiol.* 2018 Aug;25(4):288-296. doi: 10.1080/09286586.2018.1451547
6. Elliott DB, Trukolo-Ilic M, Strong JG, Pace R, Plotkin A, Bevers P. Demographic characteristics of the vision-disabled elderly. *Invest Ophthalmol Vis Sci.* 1997;38(12):2566–2575
7. Wolffsohn JS, Cochrane AL. The changing face of the visually impaired: the Kooyong low vision clinic's past, present, and future. *Optom Vis Sci.* 1999;76(11):747–754. doi: 10.1097/00006324-199911000-00023
8. Varma R, Vaieranant TS, Burkemper B, Wu S, Torres M, Hsu C, Choudhury F, McKean-Cowdin R. Visual impairment and blindness in adults in the United States: demographic and

- geographic variations from 2015-2050. *JAMA Ophthalmol.* 2016;134(7):802–9.
9. Khan SA, Shamanna B, Nuthethi R. Perceived barriers to the provision of low vision services among ophthalmologists in India. *Indian Journal of Ophthalmol* 2005; 53:69-75
 10. Bourne RR, Flaxman SR et al., Magnitude, temporal trends, and projections of the global prevalence of blindness and distance and near vision impairment: a systematic review and meta-analysis. *Lancet Glob Health.* 2017 Sep;5(9): e888-e897. doi: 10.1016/S2214-109X(17)30293-0.
 11. Pascolini D, Mariotti SP. Global estimates of visual impairment: 2010. *Br J Ophthalmol.* 2012 May;96(5):614-8. doi: 10.1136/bjophthalmol-2011-300539.
 12. Hsu WM, Cheng CY, Liu JH, Tsai SY, Chou P. Prevalence and causes of visual impairment in an elderly Chinese population in Taiwan: the Shihpai Eye Study. *Ophthalmology.* 2004 Jan;111(1):62-9.
 13. Mohidin N, Yusoff S. Profile of a low vision clinic population. *Clin Exp Optom* 1998; 81:198-202
 14. Sathyan S, Davis J, Antony RC, Mathew S, Jyothi R. Demographic and clinical profile of patients presenting at the low vision clinic of a tertiary eye care facility in Kerala. *Kerala J Ophthalmol* 2016; 28:48-52.