



OCULAR MORBIDITY PATTERN IN A SPECIALITY CLINIC OF RURAL HEALTH CENTRE IN CHITTOOR DISTRICT, AP.

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Article Info	ABSTRACT
<p>Received 15/07/2015 Revised 27/08/2015 Accepted 12/09/2015</p>	<p>The pattern of ocular morbidity varies according to region, age group and gender. Refractive errors, vitamin A deficiency and conjunctivitis are common morbid conditions in school age children while in geriatric age group, the common morbid conditions are cataract, refractive errors, conjunctivitis and glaucoma. In this background, this present study was conducted to find out the ocular morbidity pattern in a specialty clinic of a Rural Health Centre. This cross sectional study was conducted from April 2014 to March 2015 among 440 patients attending a weekly ophthalmology specialty clinic at Rural Health Centre, Chandragiri attached to SV Medical College, Tirupati. It was found that, overall, the common morbid conditions were found to be cataract (60.2%), refractive errors (14.5%) and allergic conjunctivitis (7.1%). The ocular morbidity pattern differed significantly among the age groups of the patients. In 5-15 years' age group, the common morbid conditions were found to be refractive errors (60.8%), allergic conjunctivitis (17.4%) and burning eyes (8.7%). In the 60 & above years' age group, the commonest morbid condition was found to be cataract (82.9%) followed by Aphakia-pseudophakia (10.0%). The common morbid conditions among male patients were found to be cataract (63.5%), refractive errors (1.5%) and allergic conjunctivitis (7.3%). The female patients had almost similar morbidity pattern with cataract (57.6%), refractive errors (16.9%) and allergic conjunctivitis (7.0%) being the common morbid conditions. Thus the pattern of ocular morbidity varies by age group. Attention is to be focused on these common morbid conditions depending on the age group of patients during routine ophthalmic checkups.</p>
<p>Key words: Cataract, Refractive errors, Vitamin A deficiency, Allergic conjunctivitis, Pseudophakia.</p>	

INTRODUCTION

The pattern of ocular morbidity varies by region, age group and gender apart from several other factors. Agarwal et al [1] in a study in Meerut, has found the overall ocular morbidity of all age groups as 53.0% with slightly higher prevalence in females (56.2%). In another study in Nepal [2] by Rizyal et al, refractive errors constituted the majority (22.5%) followed by conjunctivitis (14.9%) and cataract (12.5%).

A survey in school children by Kumar et al [3] has found the common ocular morbid conditions as refractive errors (53.7%), vitamin A deficiency (23.9%) and conjunctivitis (12.7%). A study in geriatric age

patients in Rajasthan by Prakash et al [4] has found the overall ocular morbidity to be 76.0% with slightly higher prevalence in females than that in males. The common ocular morbid conditions were found to be cataract (44.0%), refractive errors (24.7%), conjunctivitis (0.7%) and glaucoma (0.7%).

Thus the pattern of ocular morbidity varies according to region, age group and gender. In this background, the present study was conducted to find out the pattern of ocular morbid conditions among the patients attending a specialty clinic in a Rural Health Centre of Chittoor district, Andhra Pradesh.



MATERIAL AND METHODS

This is a cross sectional study conducted among 440 patients attending a specialty clinic at Rural Health Centre, Chandragiri, Chittoor district which is a field practice area attached to SV Medical College, Tirupati. The Rural Health Centre was established more than 52 years ago and providing the needed health services to the region. Presently it has population coverage of 32,000 with 3 sub-centres attached to it. The specialty clinic services are available since the establishment of the Rural health center but were strengthened since 2nd October 2012. As per these services, one of the specialty clinics is run every week day and specialists from the teaching hospital are posted to Rural health center for rendering specialty clinic services.

The Eye specialty clinic runs every Wednesday of the week and the services are rendered by a qualified ophthalmologist. This present study was conducted over a one year period during April 2014 to March 2015 on the patients attending in the specialty clinic. Examination of eye was done by the same specialist to avoid bias. Detailed eye examination was done including the fundus examination using an ophthalmoscope. Refractive errors were assessed using snellen's chart and the refractive error was determined. The subjects included all age groups and both sexes. Informed consent was taken from the participants and the details of the morbid conditions were recorded. The suitable treatment was provided immediately wherever possible like treatment of infections, removal of foreign body in cornea and glaucoma etc., while those needing specialized surgical services for cataract and other conditions were requested to come to the tertiary care hospital directly for the needed services. These cases were directly posted for surgical treatment after the needed preliminary investigations. The data analysis was done using MS excel and Epiinfo 7.0 version statistical software. The differences in the proportions were estimated using the Chi-square test. A probability value of less than 0.05 was considered to be statistically significant.

RESULTS

It was found that a majority of the patients belonged to 60 & above years' age group (48.5 %) followed by 45-59 years (26.4%). A slightly higher proportion of the patients were females (55.7%) than males (44.3%) (Table 1). In the right eye, the commonest morbid conditions were found to be Immature cataract (38.4%), pseudophakia (15.7%), Myopia (7.7%), allergic conjunctivitis (7.0%) and presbyopia (6.8%). Similar pattern was found in left eye with commonest morbid conditions being Immature cataract (40.9%), pseudophakia (15.0%), myopia (7.7%), allergic conjunctivitis (7.0%) and presbyopia (6.1%) (Table 2).

Overall, the common morbid conditions (both eyes combined) were found to be cataract (60.2%), refractive errors (14.5%) and allergic conjunctivitis (7.1%) (Table 3). The ocular morbidity pattern differed among the age groups of the patients. In 5-15 years' age group, the common morbid conditions were found to be refractive errors (60.8%), allergic conjunctivitis (17.4%) and burning eyes (8.7%). Almost similar pattern was found in 15-44 years with common morbid conditions being refractive errors, allergic conjunctivitis and burning eyes in that order. In 45-59 years' group, cataract was found to be most common condition (67.7%) followed by refractive errors (15.7%) and allergic conjunctivitis (4.4%).

In the 60 & above years' age group, the commonest morbid condition was found to be cataract (82.9%) followed by Aphakia-pseudophakia (10.0%) and allergic conjunctivitis (2.8%). The differences in the morbid conditions by age group were also statistically significant ($P < 0.001$; S) (Table 4).

The common morbid conditions among male patients were found to be cataract (63.5%), refractive errors (1.5%) and allergic conjunctivitis (7.3%). The female patients had almost similar morbidity pattern with cataract (57.6%), refractive errors (16.9%) and allergic conjunctivitis (7.0%). The differences were also not statistically significant ($P = 0.23$; NS) (Table 5).

Table 1. Age and gender distribution of patients (N=440)

S.No	Variable	Number of patients	Percentage
1		Age group (years)	
(a)	Less than 5	6	1.4
(b)	5 - 15	23	5.3
(c)	15 - 45	80	18.4
(d)	45 - 60	115	26.4
(e)	60 & above	211	48.5
2.		Gender	
(a)	Male	195	44.3
(b)	Female	245	55.7



Table 2. Ocular morbidity among patients (N=440)

S.No	Ocular morbid condition	Right eye		Left eye	
		No. of patients	Percentage	No. of patients	Percentage
1.	Normal	18	4.1	18	4.1
2.	Immature cataract	169	38.4	180	40.9
3.	Pseudophakia	69	15.7	66	15.0
4.	Myopia	34	7.7	34	7.7
5.	Allergic conjunctivitis	31	7.0	31	7.0
6.	Presbyopia	30	6.8	27	6.1
7.	Mature cataract	18	4.1	18	4.1
8.	Burning eyes	15	3.4	15	3.4
9.	Posterior capsular cataract	13	3.0	12	2.7
10.	Nuclear cataract	11	2.5	5	1.1
11.	Others	32	7.3	34	7.7

Table 3. Overall ocular morbidity in patients *(N=435)

S.No	Ocular morbid condition	Number of patients	Percentage
1.	Cataract	262	60.2
2.	Refractive errors	63	14.5
3.	Allergic conjunctivitis	31	7.1
4.	Aphakia-Pseudophakia	28	6.4
5.	Burning eyes	15	3.5
6.	Others	36	8.3

* Five (5) patients whose both eyes were normal were excluded

Table 4. Ocular morbidity by age group of patients

Ocular morbid condition	Number of patients in the age group (Years)					Total (%)
	Less than 5	5 – 15	15 - 44	45 – 59	60 & above	
Cataract	0 (0.0)	0 (0.0)	9 (11.3)	78 (67.7)	175 (82.9)	262 (60.2)
Refractive errors	0 (0.0)	14 (60.8)	29 (36.2)	18 (15.7)	2 (1.0)	63 (14.5)
Allergic conjunctivitis	3(50.0)	4 (17.4)	13 (16.2)	5 (4.4)	6 (2.8)	31 (7.1)
Aphakia-Pseudophakia	0 (0.0)	1 (4.4)	2 (2.5)	4 (3.5)	21 (10.0)	28 (6.4)
Burning eyes	0 (0.0)	2 (8.7)	8 (10.0)	2 (1.7)	3 (1.4)	15 (3.5)
Others	3 (50.0)	2 (8.7)	19 (23.8)	8 (7.0)	4 (1.9)	36 (8.3)
Total	6 (100.0)	23 (100.0)	80 (100.0)	115 (100.0)	211 (100.0)	435 (100.0)

Figures in parentheses indicate percentages $\chi^2=188.6$; $P<0.001$; S

Table 5. Ocular morbidity among patients by gender

Ocular morbid condition	Number of patients in		Total (%)
	Males (%)	Females (%)	
Cataract	122 (63.5)	140 (57.6)	262 (60.2)
Refractive errors	22 (11.5)	41 (16.9)	63 (14.5)
Allergic conjunctivitis	14 (7.3)	17 (7.0)	31 (7.1)
Aphakia-Pseudophakia	13 (6.8)	15 (6.2)	28 (6.4)
Burning eyes	3 (1.6)	12 (5.0)	15 (3.5)
Others	18 (9.4)	18 (7.4)	36 (8.3)
Total	192 (100.0)	243 (100.00)	435 (100.0)

Figures in parentheses indicate percentages $\chi^2=6.91$; $P=0.23$; NS

DISCUSSION

Overall, the common morbid conditions found in this study were cataract (60.2%), refractive errors (14.5%) and allergic conjunctivitis (7.1%). Agarwal et al study in

Meerut [1] has found that refractive errors (86.4%) and cataract at (22.5%) are commonest morbid conditions. Rizyal et al [2] has found in a study in Nepal that refractive



errors (22.5%), cataract (17.5%) and conjunctivitis (14.9%) to be the common morbid conditions while a study in Nigeria by Ukponmwan et al [5] had found refractive errors (23.1%), conjunctivitis (21.5%) and cataract (15.9%) to be commonest morbid conditions. Thus the present study findings are in consistency with other studies.

It was found that the ocular morbidity pattern differed among the age groups of the patients. In school age group of 5-15 years' age, the common morbid conditions were found to be refractive errors (60.8%), allergic conjunctivitis (17.4%) and burning eyes (8.7%). Bansal et al [6] study in Kolar had found the overall ocular morbidity in school children to be 13.3% with refractive errors being the commonest (89.6%) followed by allergic conjunctivitis (5.9%) and vitamin A deficiency (5.6%). A hospital based study in Kolkata by Biswas et al [7] had also revealed that refractive errors are commonest morbid condition (23.7%) followed by allergic conjunctivitis (17.2%), infections of eye & adnexa (15.1%). Gupta et al [8] in Shimla has found overall ocular morbidity as 31.6% with refractive errors being commonest morbid condition (31.6%). Kumar et al [3] in Pune had found that refractive errors are the commonest morbid condition (53.7%) followed by vitamin A deficiency (23.9%) and conjunctivitis (12.7%). Mondal et al [9] in Kolkata had also found refractive errors to be commonest (74.8%) ocular morbid condition. Rural Karnataka study by Kamath et al [10] had however found the common morbid condition to be vitamin A deficiency (33.8%) followed by refractive errors (5.6%) and conjunctivitis (2.3%). Mehari et al [11] in Ethiopia has found the conjunctivitis (35.1%) to be common morbid condition followed by refractive errors (11.4%) and keratitis (10.5%). Thus most of the studies conducted among school age group had revealed refractive errors, vitamin A deficiency, conjunctivitis and other infections to be the common morbid conditions with some regional differences. Thus the present study findings were consistent with other similar studies. In the 30-59 years' age group (combined), the common morbid conditions in this study were found to be cataract (53.4%), refractive errors (21.7%) and allergic conjunctivitis (6.8%). Most of the other ocular morbid studies were conducted either in school age children or elderly. There are few studies of ocular morbidity exclusively carried out between the age of 30-59 years and hence no comparison is

possible. In the 60 & above years' age group, the commonest morbid condition in this study was found to be cataract (82.9%) followed by Aphakia-pseudophakia (10.0%) and allergic conjunctivitis (2.8%). In a study in Rajasthan [4] by Prakash et al, the common ocular morbid conditions in elderly population were found to be cataract (44.0%), refractive errors (24.7%) and conjunctivitis and glaucoma (both 0.7%).

In a study in Mysore [12] by Shraddha et al also, the common morbid conditions were found to be cataract (30.2%), refractive errors (14.5%) and infections (3.9%). Similar pattern was also found in Wardha study by Singh et al [13] with refractive errors (40.8%), cataract (40.4%), aphakia (11.1%) and pterygium (5.2%) as the common morbid conditions. A general morbidity survey in Kurnool by Subhaprada [14] has also found that cataract accounted for 10.2% of all morbid conditions. A similar study in geriatric age group by Udoh & Idung [15] revealed overall ocular morbidity to be 10.9%. Thus cataract is found to be the common ocular morbid condition in geriatric age group subjects followed by refractive errors. Thus the findings of the present study are consistent with similar other studies.

CONCLUSIONS AND RECOMMENDATIONS

Thus the pattern of ocular morbidity varies by age group. Refractive errors, conjunctivitis and vitamin A deficiency manifestations are common morbid conditions in school age subjects while cataract, refractive errors and infections are the common morbid conditions in the geriatric age group. Attention is to be focused on these common morbid conditions depending on the age group of patients during routine ophthalmic checkups.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

REFERENCES

1. Agrawal D, Singh J V, Sharma MK, Mitthal S. (2011). Ocular morbidity pattern of an urban population of Meerut. *Indian J Prev Soc Med*, 42(1), 4–8.
2. Rizyal A, Shrestha RK, Shrestha S. (2010). A study of ocular morbidity of patients attending a satellite clinic in Bhaktapur, Nepal. *Nepal Med Coll J*, 12(2), 87–9.
3. Kumar P, Pore P, Dixit AK, Jha AK, Ahmad A, Chauhan N. (2013). Demographic profile of ocular morbidity in school children in India. *Sch J App Med Sci*, 1(5), 645–52.
4. Prakash R, Choudhary SK, Singh US. (2004). A study of morbidity pattern among geriatric population in an urban area of Udiapur Rajasthan. *Indian J Community Med*, 29(1), 35–40.
5. Ukponmwan CU. (2013). Pattern of ocular morbidity in Nigeria. *Asian Pac J Trop Dis*, 3(2), 164–6.



6. Bansal A, Krishnappa K, Datti NP, Guruprasad BS, Guha J. (2012). Ocular morbidity in school going children of Kolar district, south India. *J Clin Biomed Sci*, 2(4), 175–84.
7. Biswas J, Saha I, Das D, Bandyopadhyay S. (2012). Ocular morbidity among children at a tertiary eye care hospital in Kolkata, West Bengal. *Indian J Public Health*, 56(4), 4–7.
8. Gupta M, Gupta BP, Chauhan A, Bhardwaj A. (2009). Ocular morbidity prevalence among school children in Shimla, Himachal, North India. *Indian J Ophthalmol*, 57, 133–8.
9. Mondal A, Chatterjee A, Pattanayak U. (2014). A study on ocular morbidity and its associates among Madrasah students of Kolkata. *Indian J Basic Appl Med Res*, 3(3), 358–62.
10. Kamath BTP, Bengalorkar GM, Prasad BSG. (2013). Comparative study of prevalence of ocular morbidity among school going children of government and private schools in rural Karnataka, south India. *Int J Cur Res Rev*, 5(14), 69–76.
11. Mehari ZA. (2014). Pattern of childhood ocular morbidity in rural eye hospital, Central Ethiopia. *BMC Ophthalmol*, 14(1), 1–6.
12. Shraddha K, Prashantha B, Prakash B. (2012). Study on morbidity pattern among elderly in urban population of Mysore, Karnataka, India. *Int J Med Biomed Res*, 1(3), 215–23.
13. Singh MM, Murthy R, Venktraman SP, Rao S, Nayar M. (1997). A study of ocular morbidity among elderly population in a rural area of central India. *Indian J Ophthalmol*, 45, 61–5.
14. Subhprada CS. (2015). A cross sectional study of morbidity pattern among geriatric patients attending outpatient department of a primary health center, Kurnool. *Int J Curr Med Appl Sci*, 6(1), 39–43.
15. Udoh SB, Idung AU. (2014). Morbidity pattern in geriatric patients attending a general out-patients' clinic in a tertiary hospital in Nigeria : a society with no social support system. *IOSR J Dent Med Sci*, 13(3), 49–54.

