

**Original article:**

## **Study of Ophthalmic Morbidity among School Children in Tribal Area of Ahmednagar District (M.S.)**

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**Abstract:**

**Introduction:** Vision is the most important source of information about one's environment and has significance in one's progress. Visual impairment is a worldwide problem that has great socioeconomic impact. Childhood blindness is a priority area as it is associated with consequences not only for individual child but also for the family and community

**Methodology:** This Cross sectional, community based study was done at RMC at center Ashram shalaRajur / shendi

**Results:** Out of 170 students , only one student was wearing spectacle and was known case of refractive error. So it is noteworthy that only one student was able to correct his visual acuity in time. From this it proves that there is scholastic backwardness among school going children of tribal area.

**Conclusion:** The present study focuses on need of screening of school going children is important as timely recognition and prompt treatment would reduce ocular morbidity in that particular age group. Further we recommend such screening programmes to be extended to the remote tribal areas and that too at regular intervals.

**Keywords:** Ophthalmic morbidity, tribal population

**Introduction :**

Vision is the most important source of information about one's environment and has significance in one's progress. Visual impairment is a worldwide problem that has great socioeconomic impact. Childhood blindness is a priority area as it is associated with consequences not only for individual child but also for the family and community.<sup>[1]</sup> Considering the fact that around 19 million visually impaired children , 12 million children are due to refractive errors while 1.4 million are irreversibly blind for the rest of their lives.<sup>[2]</sup> Most of the children adjust to the poor sight by sitting near blackboard, holding books closer to their eye, squeezing the eyes and even avoiding work requiring visual concentration.<sup>[3]</sup> Children in the school-going age-group (6-16years) represent 25% of the population in developing countries. They offer significantly representative study population as most of these conditions are preventable.<sup>[4,5]</sup> Refractive error if not corrected in time could affect the vision and hamper development. Both genetic and environmental factors influence the progress of refractive error.<sup>[6]</sup> Hence consequences related to blindness are not only health related but social, economical and psychological too.<sup>[7]</sup> This demands early detection and treatment to prevent permanent disability. In India, most of the data are from

urban area and very few from rural area that too tribal area. Hence, the present study is planned with objective of estimating the prevalence of ocular morbidity among secondary school children in tribal area of Ahmednagar district of the Western Maharashtra.

**Aims and Objectives:**

1. To study the prevalence of ocular morbidity among tribal secondary school students .
2. To find out the most prevalent ocular morbidity.
3. To study the relation of demographic factors with ocular morbidity.
4. To impart knowledge regarding eye care.

**Methodology:**

- Study design: Cross sectional, community based
- Study setting; Ashram shalaRajur / shendi
- Study population:Tribal school going children 5<sup>th</sup> to 10<sup>th</sup> standard
- Based on study references in rural area<sup>[7]</sup>, required sample size is calculated by formula  $n = \frac{4pq}{L^2}$  works out to be 150

Where

P=40% :prevalence

Q=100-P =60%

L = 20% of P:allowable error

- Study material:prestructured case record form, Snellen's chart , Ishihara's colour chart , torch , pinhole
- Data collection :Data collection with predesigned proforma □ Inclusion criteria:
  - 1.Children studying in 5<sup>th</sup> to 10<sup>th</sup> standard,
  2. Ready to undergo ophthalmic examination
  - 3.Student ready to participate question based study ,
  - 4.Student of either gender
- Exclusion criteria:Students not willing to participate.
- Study conduct: All the students satisfying the above inclusion and exclusion criterion were studied .

**Observations and results:**

**Table No 1. Distribution of Students According to Age**

Student Age	Total No.
10	8
11	38
12	33
13	42
14	20
15	10
16	14
17	4
18	1
<b>Total</b>	<b>170</b>

Most common age group of student participants was 13years (42) followed by 11 years (38), 12 years (33) and least common was 18 years(1) followed by 17 years(4).

**Table No 2. Distribution of Students According to Standard**

Standard	Total No. of Students
5th	44
6th	34
7th	44
8th	20
9th	10
10th	18
<b>Total</b>	<b>170</b>

Most common students participants were from Standard 5th and Standard 7th ( both 44) and least common were from standard 9th(10)

It was observed that Out of 170 students 57 students were with Ocular Morbidity and 113 students were normal (without Ocular morbidity).

It was evident to see that among 170 students only one student was wearing spectacles .

**Table No 3. Distribution of students having ocular morbidity according to Age**

Age	Number of students having ocular morbidity (N=57)	Percentage
10 years	3	5.26%
11 years	17	29.82%
12 years	8	14.03%
13 years	13	22.80%
14 years	7	12.28%
15 years	4	7.01%
16 years	3	5.26%
17 years	2	3.5%
18 years	0	0%

**Table No 4. Distribution of Students According to Visual Acuity**

Distant Vision	Right Eye	Left Eye
6/6	135	123
6/9	31	40
6/12	2	6
6/18	2	1
<b>Total</b>	<b>170</b>	<b>170</b>

**Table No 5. Gender wise distribution of Ocular Morbidity**

Total Student	Male (N= 107)	Female(N= 63)	Total (N=170)
Ocular Morbidity	37	20	57
Percentage	34.57%	31.74%	33.52%

Gender wise distribution of ocular morbidity showed as male (34.57%) and Female (31.74%).

**Table No 6.Distribution of Students according to Ocular Morbidity**

Ocular Morbidity	ICD Code	Boys =107	Girls N=63	Total N= 170
		No(%)	No(%)	No(%)
Refractive error	H 52.7	30(28.03)	20(31.74)	50(29.41)
Squint	H 50.9	3(2.8)	0	3(1.76)
Congenital Cataract	H 26	1(0.93)	0	1(0.58)
Traumatic Cataract	H 26	1(0.93)	0	1(0.58)
Ptosis	H 02.409	1(0.93)	0	1(0.58)
Known error	-	1(0.93)	0	1(0.58)

**Discussion :**

The present study which was carried out in secondary school going children in tribal area of Ahmednagar District , Maharashtra. The required sample size was 150 but we could get 170 students participants. Gender wise distribution showed 63%of male and 37% of female. Our study is comparable to Niti et al ,Jayant deshpande et al and R K Shreshtha et al studies. <sup>[1,4,10]</sup> In present study male participants were slightly higher may due to in one of the school we could get male participants only.

Most common age group of student participants was 13years (42) followed by 11 years (38), 12 years (33) and least common was 18 years(1) followed by 17 years(4). In the present study prevalence of ocular morbidity was 33.52% among secondary school going children, which is comparable to the different studies in India and abroad

Place	Age group	Prevalence
<b>Abroad</b>		
Nepal , Kathmandu <sup>[10]</sup>	5-16years	34.2%
Nigeria <sup>[13]</sup>	4-15years	19.9%
Baluchistan <sup>[19]</sup>	6-15years	22.84
Sudan <sup>[20]</sup>	6-15 years	3.03%
<b>India</b>		
Shimla <sup>[3]</sup>	6-16Years	31.6%
Delhi <sup>[21]</sup>	5-15 Years	40%
Ahmadabad <sup>[1]</sup>	2 m -15 Years	21.2%
Central India <sup>[17]</sup>	5-16 Years	14.5%
North Maharashtra <sup>[4]</sup>	6-16 Years	27.65%
West Uttar Pradesh <sup>[16]</sup>	5-15years	29.35%

In the present study ocular morbidity is higher than the different studies at various places in India and abroad owing our selection of tribal school going children population, which is residing far-off from urban facilities.

Distribution of ocular morbidity showed refractive error (29.41%) as commonest cause in the present study. Prevalence of refractive error is slightly higher comparable to result of study done by M Gupta et al as 22%, Das et al in Kolkata and Desai et al in Jodhpur also reported prevalence of 25.11% and 20.8% respectively.<sup>[3,18,22]</sup> The highest prevalence is reported by Harpal Singh in Bhopal as 47.91%.<sup>[17]</sup> Ocular morbidity was more prevalent among male students (64.9%) female students (35.1%) which is comparable to study by Deshpande et al in North Maharashtra.<sup>[4]</sup>

Second commonest ocular morbidity was squint (1.76%) which is comparable to studies done by Nepal B P et al (1.63%), Veer Singh et al (0.27%) and Harpal Singh (2.08%).<sup>[11,16,17]</sup> In the present study one case of each ptosis, congenital cataract and traumatic cataract were found. Though ptosis cases are reported by Deshpande et al and Khalil A et al in their studies.<sup>[4,19]</sup> Khalil A. et al observed prevalence of cataract as (0.17%) and Harpal Singh reported it as (0.51) which comparable to the present study (1.17%).<sup>[20,9]</sup> This may be due to unawareness of students of eye vision and eye health. Also negligence on parts of parents and guardians. Pankaj Kumar et al found association between literacy status of father and ocular morbidity.<sup>[5]</sup> In the present study one cataract case was found to be congenital and another one traumatic. Though congenital diseases cannot be prevented, but if diagnosed at right time and treated, can save eye vision and child gets a healthy life.

Out of 170 students, only one student was wearing spectacle and was known case of refractive error. So it is noteworthy that only one student was able to correct his visual acuity in time. From this it proves that there is scholastic backwardness among school going children of tribal area.

The present study focuses on need of screening of school going children is important as timely recognition and prompt treatment would reduce ocular morbidity in that particular age group. Further we recommend such screening programmes to be extended to the remote tribal areas and that too at regular intervals.

#### Conclusions:

- It was observed that Out of 170 students 57 students were with Ocular Morbidity and 113 students were normal (without Ocular morbidity).
- It was evident to see that among 170 students only one student was wearing spectacles
- It is evident that refractive error(29.41%) was common overall .
- Conditions like refractive errors if not detected early can lead to amblyopia.
- Prevalence of ocular morbidity also causes reduction of interest and performance in school.
- Early intervention like screening eye programs for children should be carried out.
- We can enlight knowledge of kids regarding eye hygiene and care.
- This research data will assist in forming and improving plans and policies for school going children in tribal areas.

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