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AMBASSADOR FOR EYE CARE PROGRAM IN 18 DISTRACTS IN CHHATTISGARH INDIA

Ophthalmology

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ABSTRACT

Aim and Objective- a) Examine maximum school going children in 18 districts will get the advantages of primary eye care treatment. b) Examine and training at least one teacher per school for primary screening, primary treatment of eye cares health education and referrer to specialist doctors. c) To provide treatment to all suspected or identified children, and d) To create awareness among school teachers, parents, children, adolescence about primary care of eye. **Materials and Methods:** A sample of 1653113 school going children age 6 to 18 years studying in different school in 18 districts of Chhattisgarh were examined by 47449 ambassadors, 334 ophthalmic assistant officers, 72 eye doctors of government sector and 14 eye doctors from private sectors during 16 September 2011 to 30 June 2012 in four phases. **Result:** Myopia boys mean 1.00±SD.000, girls mean .56±SD .496, t value 78.299, hyperopia problem boys mean .50±SD.500, girls mean .65±SD .477, t value -36.397, and astigmatism disorder boys mean .80 ±SD .403, girls mean .67±SD .469, t value -33.216 is statistically significant at 0.05 levels. Cataract was responsible for 206 out of 1653113 children (0.012%) of different visual impairment. The barrier for cataract surgery was financial issues (16.20%), lack of awareness (23.40%), lack of facilities (11.65%), lack of good doctors (0.54%), accessibility due to distance (12.84%), fear of surgery (6.8%), fear of losing eye sight after surgery (10.28%), waiting for camp for surgery (13.26%) and other illness (4.9%). **Conclusion:** Ambassador for eye care Scheme of National Programme for Control of Blindness (NPCB) and Rajeev Gandhi Shiksha Mission (RGSM), programmed success of patients Satisfaction, which may be attained by providing quality of services, utilization of updated technology, accessibility and effective counselling at various vision centres in Chhattisgarh. To trained school teachers for primary screening, primary treatment, eye care, health education and referral. Provided successful treatment to all suspected or identified children, Ambassador for eye care created and understanding of the community structure, their cultural and social beliefs, level of awareness spread among school teachers, parents, children, adolescence about primary care of eye.

KEYWORDS

Blindness, cataract, low vision, prevalence, visual disability

INTRODUCTION-

Primary eye care (PEC) is an integral part of comprehensive eye care. It is targeting to serve peoples for better services to redress ocular morbidity of blindness and visual impairment. It is fact that Large number of children in India suffering from blindness or visual impairment.

Blindness prevalence in India was 1.1% in 2001-2002 and 1% in 2006-2007. [1] Number of blind person in India would increase to 24.1 million in 2010 and 31.6 million in 2020. [2] The visual impairment prevalence in children is to the tune of 7.3% in North India and 6.37% in South India. [3, 4] Visual impairment and blindness hampers all aspects of a person's personal life, social life and very important education life.

The major causes of blindness in India are malnutrition, vitamin- A deficiency [5], retinopathy of prematurity (ROP) [6], vascular disease involving the retina or optic nerve including stroke, Malignancies of the eye [7], Congenital abnormalities [8], Hereditary diseases of the eye [9] , Glaucoma [10, 11, 12], diabetes [13, 14, 15], Macular degeneration [16, 17], Traumatic injuries [18], Infection of the cornea [19], Myopia and Cataract [10].

Day by day the number of eye problems are increasing in India many places where people did not reach and getting the proper eye care services like- lack of eye care services, with including shortage of proper trained eye health workers, and centres .Other reason people still unaware about the eye care services and awareness, maximum people did not reach for their poor financial condition.

Many government projects since 1976 National programme for control of blindness in India.[1] In 1994 to 2001 cataract blindness control program by The World Bank assisted .[20] In 2004 “Vision 2020”; the right to sight initiatives launched in India for avoidable blindness.[21] But the major factors for high burden of blindness have been the poor awareness about prevention of eye diseases and available eye care services.

Ambassador for eye care program, providing care and identifying disease before it becomes a serious medical condition. Ambassador for eye care program is delivered in many different ways. However, it all aims at making eye care services available within reach of all 18 distracts in Chhattisgarh India. In Ambassador for eye care provides awareness to school teachers, parents, children and social, arrange training one teachers per school in all 18 district in Chhattisgarh India , screenings eye diseases, diagnosis and treatment of most eye conditions, referral to specialists, and coordination with other aspects of medical care. While it is the Ambassador for eye care ophthalmologist's responsibility to perform the comprehensive medical eye evaluation, certain aspects of data collection may be conducted by trained individuals under the supervision of the professional ophthalmologist.

Materials and Methods

Aim and Objectives

a) Examine maximum school going children in 18 districts will get the advantages of primary eye care treatment.
b) Examine and training at least one teacher per school for primary screening, primary treatment of eye cares health education and referrer to specialist doctors.
c) To provide treatment to all suspected or identified children.
d) To create awareness among school teachers, parents, children, adolescence about primary care of eye.
Sample

A sample of 1653113 school going children studying in different school in 18 districts of Chhattisgarh were examined by 4709 ambassadors, 334 ophthalmic assistant officers, 72 eye doctors of government sector and 14 doctors from private sector during 16 September 2011 to 30 June 2012.

Inclusion Category

- Children (boys and girls) (Age group 6 to 18 years)
- Cover all school going children from 18 districts of Chhattisgarh

Exclusion

- Children (boys and girls), above 18 years are not including in this study.

PROCEDURE OF DATE COLLECTION

Ambassador for eye care program was done by NPCB (National Programme for Control of Blindness) decision with the help of RAJIV GANDHI SHIKSHA MISSION, Chhattisgarh, India. Study was done in four (4) phases –

Phase I- (15th July 2011 to 15th September 2011)- Planning, training of school teachers and arrangement.

Phase II- (16th October 2011 to 15th December 2011)- Primary screening –ambassadors recorded vision of every students and registered all students with either diminished vision or eye problem.

Phase III- (16th December 2011 to 15th May 2012) -Camp arrangement for all referred cases by Para Medical ophthalmic Asstt. (PMOA) and non-school going children referred by health workers. Eye specialist with team provided treatment, refraction and minor operation.

Phase IV- (16th May 2012 to 30th June 2012)- Specialized treatment and follow-up, expected cases were sent to medical colleges and private hospitals for specialized treatment

RESULT

The characteristics of the sample are presented in Table 1. Total 1653113 school going children from 18 districts in Chhattisgarh, India. Children between the age ranges of 6-18 years. Social economic status 785788 (47.53%) children 464532 (48.57%) male and 321256 (46.09%) female subjects from belong to low social economic status, 559994 (33.87%) children 327542 (34.25%) male and 232452 (33.35%) female subjects from medium social economic status, and 307331 (18.59%) children 164147 (25.01%) male and 143184 (20.54%) female subjects from high economic status. 1145713 (69.30%) children 658954 (68.91%) male and 486759 (69.84%) female subjects are stay in a joint family and 507400 (30.69%) children 297267 (31.08%) male and 210133 (30.15%) female subjects stay in nuclear family. Around 430779 (26.05%) children parents 245125 (25.63%) male and 185654 (26.64%) female subjects parents from below 10th STD , 469896 (28.42%) children parents 315654 (33.01%) male and 154242 (22.13%) female subjects parents from 10th STD, 157904 (9.55%) children parents 82659 (8.64%) male and 75245 (10.79%) female subjects parents from 12th STD , graduate passed parents 133702 (8.08%) , 76848 (8.03%) male and 56854 (8.15%) female ,post graduate parents 138612 (8.38%) , 54356 (5.68%) male and 84256 (12.09%) female subjects and other educational background parents 322220 (19.49%) ,181579 (18.98%) male and 140641 (20.18%) female subjects .

Table- 1- Demography Profile of Children in Ambassador for Eye Care Program.

AREAS	MALE	FEMALE	TOTAL COUNT
Gender	956221 (57.84%)	696892 (42.15%)	1653113 (100%)
Age Range			
6-8 Years	96530 (10.09%)	75425 (10.87%)	171955 (10.40%)
9-10 Years	184211 (19.26%)	94254 (13.52%)	278465 (16.84%)
11-12 Years	213957 (22.37%)	201245 (28.87%)	415202 (25.11%)
13-14 Years	223481 (23.37%)	210452 (30.19%)	433933 (26.24%)
15-16 Years	195885 (20.48%)	84588 (12.13%)	280473 (16.96%)
17 and Above	42157 (4.40%)	30928 (4.43%)	73085 (4.42%)
Social Economic Status			
Low	464532 (48.57%)	321256 (46.09%)	785788 (47.53%)
Medium	327542 (34.25%)	232452 (33.35%)	559994 (33.87%)
High	164147 (25.01%)	143184 (20.54%)	307331 (18.59%)
Family Type			
Joint	658954 (68.91%)	486759 (69.84%)	1145713 (69.30%)
Nuclear	297267 (31.08%)	210133 (30.15%)	507400 (30.69%)
Patients Educational Background			
Below 10th	245125 (25.63%)	185654 (26.64%)	430779 (26.05%)
10th	315654 (33.01%)	154242 (22.13%)	469896 (28.42%)
12th	82659 (8.64%)	75245 (10.79%)	157904 (9.55%)
Graduate	76848 (8.03%)	56854 (8.15%)	133702 (8.08%)
Post Graduate	54356 (5.68%)	84256 (12.09%)	138612 (8.38%)
Others	181579 (18.98%)	140641 (20.18%)	322220 (19.49%)

During phase I- School teachers, management they know the importance of primary care of eye but they didn't know how they operate it. Under ambassadors for eye care program , professionals and trainers trained more than 600 teachers (Trained one teacher in every school 18 district in Chhattisgarh) , after training or practical sessions, 375/600 (62.5%) of teachers are very satisfied, 164/600 (27.33%) teachers are satisfied , 41 (6.83%) teachers are uncertain and rest of the 20 (3.33%) teachers are not filled feedback form. Maximum teachers accepted the importance of training and the way of training and benefices for all school children and school management see table no.2.

Table No 2. School Teachers Feedback of Ambassador for Eye Care Program Training

No of teachers trained (Feedback)	Very Satisfied	Satisfied	Uncertain	Not filled by teachers
600 (100%)	375 (62.5%)	164 (27.33%)	41 (6.83%)	20 (3.33%)

Phase II- On phase II Ambassador for Eye care program plaining team provided vision chart or analysis referral book and booklets on common eye-diseases and patient referral slips, given verbal and practical sessions for every teacher to know and handle patients in school and do primary care, developing awareness in school and critical patient's referral after screening. All ambassadors recorded vision of every school going children and registered all children with either diminished vision or eye problem. Total 47449 ambassadors, 334 ophthalmic assistant officers, 72 eye doctors of government sector and 14 eye doctors from private sectors treated all children at Sankul level, checked for spectacle. Gave spectacles and referred to block level camp around 89726 school going children examined at Community health centre (CHC) and 6817 children are examined at district hospital.

Table No. 3- Program Team Involve in Ambassador for Eye Care Program

Team Total	ambassador	ophthalmic assistant officers	eye doctors of government sector	doctors of private sectors
47896	47449	334	72	14

Phase III- on this phase camp arranged for two days at block level wise, for all referred cases by Para Medical ophthalmic Asstt. (PMOA) and non- school going children referred by health workers trained teachers. Eye specialist with their term provided proper treatment, counselling and guidance about primary care, refraction and doing minor operation. 9817 school going children examined in district hospital on the day fixed for each block for further investigation, treatment and cataract surgery was done in district hospital , cases from districts hospital were referred to medical hospital Raipur, Bilaspur, and Jagdlpur on fixed days for districts.

The incidence and prevalence of age related cataract is increasing world wise .In developing countries the lack of awareness of cataract and the treatment options available is one of important factors for the increased prevalence of cataract. According to Minassian DC, Mahre [22] study showed in India alone 3.8 million people become bind from cataract each year. In present study cataract was .012 % showed more exposure to accidents, possibly agricultural village and forest life factors. The present study noted refractive errors around 32722 children. Gender and family history of refractive errors was found to be significantly associated with the refractive errors.[23]

Table 4– Mean and SD of Myopia, Hyperopia and astigmatism in School Going Children Along With Their Statistical Significance of Difference between Mean

Paired Samples Test												
					Paired Differences					t	df	Sig. (2-tailed)
			Mean	SD	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
								Lower	Upper			
Pair 1	Myopia	Boys	1.00	.000	.439	.496	.006	.428	.450	78.299	7820	.000
		Girls	.56	.496								
Pair 2	Hyperopia	Boys	.50	.500	-.145	.352	.004	-.153	-.137	-36.397	7820	.000
		Girls	.60	.477								
Pair 3	Astigmatism	Boys	.80	.403	-.124	.329	.004	-.131	-.116	-33.216	7820	.000
		Girls	.67	.469								

As it shown in table no.4-Screening Myopia problem boys mean 1.00±SD.000, girls mean .56±SD .496, t value 78.299 is statistically significant at 0.05 level. Genetic factors, and attributable to enlivenment and lifestyle play major role in the development of myopia [24], its affect near work activities like reading, writing, arithmetic. Although near work is considered as a risk factor for increased myopia.[25] Other study shows higher incidence of myopia was found in school children (4.79%) and urban population (6.9-12.2%) in comparison to rural population (2.77%) in Chandigarh.[26]. According to the World Health Organization (WHO)-NPCB survey 1.49% population in India is blind of which 7.35% is due to refractive errors. [27]The Present study shows high myopia more prevalent among boys than girls, similar study also found the same.[28]

Hyperopia a condition in which visual images come to a focus behind the retina of the eye and vision is better for distant than for near objects in present study Hyperopia problem boys mean .50±SD.500, girls mean .65±SD .477, t value -36.397 is statistically significant at 0.05 level. Most children with hypermetropia of less than +3.00 D experience a reduction in hyperopic refractive error over time and will outgrow any need for corrective lenses. In our study, increasing education load and children spending less time in outdoor activities were associated with hyperopia. The prevalence of hyperopia was significantly higher in the urban population (52.27%) [29]. Hyperopia found to be significantly higher among girls than boys. This female preponderance has also been reported in other studies. [30, 31]

Astigmatism occurs to most people today. Astigmatism problem boys mean .80 ±SD .403, girls mean .67±SD .469, t value -33.216 is statistically significant at 0.05 level. Astigmatism disorder was the most frequent among the school going children and it's significantly increased with age. Previous studies have also shown that astigmatism increases with age. [32]

Table no. 5 -Counts of Cataract Cases and other refractive errors

CASES	NO. OF COUNTS	CASES	NO. OF COUNTS
Congenital /developmental	123	Retinal Detachment (RD)	17
Traumatic	83	Lebers	1
Refractory Errors	32722	Rhinosporidiosis	17
Amblyopia	324	Dacryocystitis	49
Low Vision	146	Congenital Anomalies	60
Squint	195	Corneal Opacity	21
Conjunctivitis	317	Glancoma	11
Allergic Conjunctivitis	33	Blepharitis	7
Posterior Segment Disorder	24	Ptosis	5
Retinopathy of Prematurity (ROP)	3	Chalazion	2
Retinitis Pigmentosa (RP)	3		

*Total cataract cases 206 out of 1653113 children (0.012%).

Ambassador for eye care project numbers of cataract cases seen by doctors like Congenital / developmental cataract around 123 is significant causes of severe visual impairment and blindness in children. Congenital cataract is hereditary in 8.3%–25% of cases, with 75% being autosomal dominant in inheritance.[33], have systemic association (33%), or may be idiopathic (33%) [34]. 70.5 % of patients had bilateral cataracts.[35] Of 243 children with newly diagnosed congenital or infantile cataract, 160 (66%) had bilateral disease. [36].

Our study showed that about 83of ocular traumas occurred in paediatric age group. One out of five patients of ocular trauma admitted to hospital were children <15 years of age.[37] and found the highest incidence of ocular trauma in the very young age group. [38, 39] The Refractive Error in Children 32722 reported population (children aged 5 to 15 years) presenting visual acuity ≤ 20/40 in both eyes. According to Vision 2020 45 million cases of blindness, approximately 60% were due to either cataract (16 million people) or refractive errors. [40].

Amblyopia 324 the prevalence of amblyopia ranges from 1 to 3% depending on the population [41],and refractory errors are second most common causes of paediatric amblyopia. [42] 146 cases of low vision were given low vision aids through Rajeev Gandhi Shiksha Mission (RGSM). Screening and provision Low vision Aid was done for the first time in Chhattisgarh State. Squint 195 burden of ophthalmic disorder among Indian children leading to squint because of eye health illiteracy.[43]Its significant higher burden in present in the paediatric population.[44] Elston study shows one in fifty children have a squint.[45]

Conjunctivitis 317 and Allergic conjunctivitis conduction around 33 children are suffering and it's a most common comorbidity of ocular allergy is allergic rhinitis. In paediatric outpatient clinic allergic conjunctivitis was reported high 97%. [46] Allergic conjunctivitis disease is more common in hot days. Other study is supported. [47, 48] Posterior segment eye disease (PSED) – 24 children are affected. Some Indian studies shows increase in the prevalence of posterior segment disorders. [49, 50]

Present study noted 3children with Retinopathy of prematurity (ROP) are from history of preterm and present history of children with birth weights of between 1.500 gm and 2000 gm. and its developing retinal blood vessels of the preterm infant, may lead to poor visual acuity or

blindness. 15 million preterm children born worldwide, about 53,000 develop sight-threatening ROP requiring treatment, and 20,000 suffering from blindness or severe visual impairment. [51] According to India accounts 3.5 million preterm births in the world.[52]

Present study noted 3 and Retinitis pigmentosa (RP). Parents with Retinitis pigmentosa gradually lose night vision and side vision, and then experience late central vision loss because of progressive loss of rod and cone photoreceptor cells. [53, 54]

17 are retinal detachment (RD) of the retina is a serious event, which may result in complete blindness. According to Gonin [55], the retinal break is considered to be the crucial factor in the development of a retinal detachment, which occurs as a result of a full-thickness retinal break [56]. According to Okun E. [57] 5-10% of post-mortem eyes shows the presence of a full-thickness retinal break but no retinal detachment.

In present study Leber's noted 1 of population. Less than 10% of patients are 12 years old or younger [58,59]. 17 cases of rhinosporidiosis ,Rhinosporidiosis is strongly associated with male gender, young and middle aged adults, agricultural occupations peoples.[60] Other factors like Dacryocystitis 49 cases, some studies have suggested an increasing frequency in gram negative organisms [61,62,63].Congenital Anomalies 60 children are affected. Tupe [64] study found that 40% of the congenital anomalies caused severe visual impairment or blindness. Corneal opacities are eye problems that can lead to scarring or clouding of the cornea, which decreases vision. The Present study found 21children affected.

The present study noted Glaucoma 11 in children , The estimated prevalence for India was 11.9 million.[65, 66] The Present study noted 7 children are suffering from Blepharitis dry eye disease, young children occasionally being afflicted with a severe form of blepharitis.[67]

Children with history of ptosis associated with developmental delay or a systemic disorder. Present study noted 5 children are present history of Ptosis. Congenital ptosis and the underlying chromosomal alterations, genetic syndromes, and neurological disorders.[68] and children with Chalazion 2, other study found 0.24% among general population incidence of chalazion in India and found more in females (68%) as compared to males (32%).[69] Other study found more in male children as compare to female .[70,71]

Phase IV – During May 2012 to June 2012 all critical cases were sent to respected medical colleges and private hospitals for specialized treatment (See list of Medical College Allotted for District Wise), All operations were done after school examination, After phase three received the list of children for operation, state coordination cell fixed up the places and date in consultation with the surgeon and private doctors participated at Rashteey Swasth Beema Yojana (RSBY) rates, as a service to mankind. The surgical fee was paid by Rajeev Gandhi Shiksha Mission (RGSM) norms.

DISCUSSION

Ambassador for eye care program conduct 18 district in Chhattisgarh India, Large number of school going children 1653113 participate had taken advantages of program. All 18 distract in Chhattisgarh are inaccessible and hence are likely to have a huge backlog of curable causes of visual conjunctivitis, and total cataract cases 206 out of 1653113 children (0.012%).

Ambassador for eye care services outcomes will help in better planning of eye care in Chhattisgarh. It also trained teachers of primary eye care and given information of blinding eye diseases and barriers to cataract services in the rural and urban areas. The barrier for cataract surgery in our study, Financial Issues (16.20%), Lack of Awareness (23.40%), Lack of Facilities (11.65%), Lack of Good Doctors (0.54%), Accessibility due to distance (12.84%), Fear of Surgery (6.8%), Fear of losing Eye sight after surgery (10.28%), waiting for Camp for surgery (13.26%) and other illness (4.9%). Proper guidance and counselling before severity level of child surgery by using success story could be strategies to address these barriers in our study area.

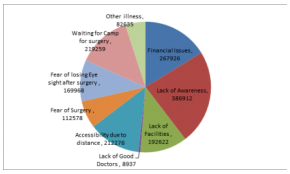

Figure No. 1- Barrier for cataract surgery

Evidence-based information makes the Ambassador for eye care health program is more effective. The estimates of visual disabilities also should be used as baseline and for preparing an action plan. In absence of sufficient resources, diagnostic and surgical camps could be planned as short-term solutions.

Ambassador for eye care Scheme of National Programme for Control of Blindness (NPCB) and Rajeev Gandhi Shiksha Mission (RGSM), programmed success of patients Satisfaction, which may be attained by providing quality of services, utilization of updated technology, accessibility and effective counselling at various vision centres in Chhattisgarh. To trained school teachers for primary screening, primary treatment, eye care, health education and referral. Provided successful treatment to all suspected or identified children, Ambassador for eye care created and understanding of the community structure, their cultural and social beliefs, level of awareness spread among school teachers, parents, children, adolescence about primary care of eye.

LIMITATION -

The results of this study "Ambassador for Eye Care Program in 18 Distracts in Chhattisgarh India" were the statistically significant, means shows high risk of visual conjunctivitis and cataract and area based study.

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