

## ROLE OF PARENTS AND EYE CARE PROVIDERS DURING AMBLYOPIA THERAPY

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### ABSTRACT

**PURPOSE:** To evaluate the cooperation of parents and eye care providers' guideline during the treatment therapy results in improvement of vision in amblyopic eye.

**METHOD:** A cross-sectional study was conducted on 45 amblyopic patients, who visited the department of Ophthalmology Mayo Hospital Lahore. All patients were aged less than 20 years. Consent was taken from all the parents/guardians of the patients. A self-design questionnaire was distributed among parents. The confidentiality was maintained. The study was conducted between September to December 2020.

**RESULTS:** A total of 45 questionnaires were distributed. Among those 89% mothers were doing supervision of their children's occlusion therapy. 60% of total could manage their time easily. They did not feel any embarrassment related to treatment therapy. Screen time was 28% and near work was 78% during occlusion therapy. 78% eye care providers guided them properly about treatment procedure.

**CONCLUSION:** Parents of amblyopic patients especially mothers pay full attention to the treatment plan. Most of the eye care providers (ECP) guided them properly about treatment method. Occlusion therapy with near work resulted in improvement of vision.

**KEY WORDS:** occlusion, visual acuity, blindness, strabismus

### INTRODUCTION

Amblyopia is defined as the reduced visual acuity which cannot be improved by optical correction. It does not cause by any structural ocular and visual pathway anomaly. Amblyopia is a relatively common disorder, affecting 1-4 percent of the general population.<sup>1</sup> It is the most common cause of binocular vision problems in many age groups including child and middle age adults.<sup>2</sup>

Amblyopia in children is one of the major problems that should be diagnosed as soon as possible and start the treatment therapy for good results. Treatment therapy greatly depends upon the parent's cooperation with children. The reason for embarking on this study was to assess parent's role in treating amblyopia and their effect on the final outcome. Amblyopia occurs when the loss of visual acuity cannot be explained by visual anomalies, or due to some other disease that might cause amblyopia.<sup>3,4</sup>

The best way of amblyopia treatment is by restricting the function of better eye by patching. Parental cooperation and stimulation are critical because treatment is long-term and some degree of deterioration may occur if interrupted prematurely.<sup>5</sup> The maintenance of orthoptic treatment of strabismus in Europe since the 1950's using the principle that, during the course of treatment of occlusion, providing amblyopia with the appropriate type of visual stimulation or imposing specific functional requirements on it, may accelerate the improvement in its vision.<sup>6</sup>

The purpose of this consecutive compatible patient series, which was studied retrospectively, was to suggest the possibility of improving amblyopia with the help of osteopathic stimulation using synoptophore. It can improve vision, in the first stage, to a certain degree for babies to accept patching and

resume their usual daily lives. Thus, it is possible to comply with the treatment can be achieved.

Amblyopia treatment is not easy to perform especially in young children and is usually associated with a certain degree of distress. However, no effect on the child's well-being or global behavior was observed during or after the treatment period. Parents role is very important aspect of treatment plan in control of emotions and behavior of child during treatment.<sup>7</sup> Many people with amblyopia, especially those who have only a mild form, do not even realize they have the condition until they are tested at an older age, because vision in their stronger eyes is normal. However, people with severe amblyopia may have related visual disturbances, most notably impaired depth. Patients with amblyopia may have impaired spatial acuity or a reduced sensitivity to contrast.<sup>8</sup> Consistency of medical treatment is very important and non-consistency affects many areas of medicine and in the treatment of amblyopia occlusion therapy is no exception. Many studies revealed that the consistency is very important factor in determining the effectiveness of occlusion therapy.<sup>9</sup> There is still confusion that non-consistency decrease with the age<sup>10</sup>, increase with age, or it is totally not linked to age.<sup>11</sup>

One of the treatment options for amblyopia is to enhance the use of amblyopia by restricting better eye function (blockages that can last from a few hours to throughout the day), which has proven to be the best way to treat amblyopia. The duration of treatment for obstruction depends on the degree of amblyopia. Parental cooperation and stimulation are critical because treatment is long-lasting and some degree of deterioration may occur in early interruption.<sup>12,13</sup>

Whether there is visual impairment (including high refractive error) during the sensitive period of visual development. Clinically, the definition of an amblyopia is the difference between the visual acuity of two eyes by more than one line.<sup>14</sup> Although, unocular vision functions including grating vision, color vision, and contrast sensitivity will also be affected. Amblyopic eyes can likewise have faulty

accommodation and can show oculomotor deficit, including unstable fixation and incorrect tracking; the following of the non-amblyopic eye can likewise be less accurate than in age-coordinated control.<sup>15</sup>

The effects of amblyopia related to a healthy quality of life are specifically related to the treatment of amblyopia, the effect on family life, social interactions, difficulties in carrying out daily activities, as well as feelings and behavior. At present, the outcome measurement reported by patients is amblyopia in both eyes, which is inconsistent with the current method or instrument management recommended in the development process. A study of children from 4 to 7 years of age aims to generate complete patient reports of strabismus and use children's responses to developmental stages.

There is no study that has investigated the role of parents and eye care provider during amblyopia therapy among Pakistani parents using a self-design Performa, therefore, this study aimed to investigate the role of parents and practitioners in during amblyopia therapy in Pakistan.

## MATERIALS AND METHODS

A cross-sectional study was performed among the parents of amblyopic patient to determine their role in occlusion therapy during amblyopia treatment. Total of 45 participants were included in this study. Data was collected by non-probability purposive sampling method in a self-made proforma, in which several questions were asked. Data was entered and analyzed on SPSS version 25.0. Qualitative variables like gender was presented as frequency and percentages and for other variable suitable statistical techniques applied. Descriptive statistics was used to represent the results like graphs. All the data was presented in forms of frequencies, percentages and appropriate pie and bar charts. The statistical significance level P was taken less than 0.05.

## RESULTS

A total of 45 questionnaires were distributed. Among those 89% mothers were doing supervision of their children's occlusion therapy. 60% of total could manage their time easily (Table 1). Mothers did not feel any embarrassment related to treatment therapy. Screen time was 28% and near work was almost 78% during occlusion therapy (Graph 1). 78% eye care providers guided them properly about treatment procedure. 42% of the mothers were government employee and 58% were housewives. During the occlusion therapy 78% parents let their child to perform near work, 11% did not do near work and 11% did not know about this. 67% of children faced mocking during therapy. 31% of parents stopped patching due to mocking. 75% parents considered amblyopia therapy a good treatment (Graph 2).

## DISCUSSION

In almost 45 million people around the world are blind most of them lost their vision due to diseases that are treatable or can be prevented. Amblyopia is one of them, which is non-optical and non-pathological decrease in vision. It is also treatable and its onset is first decade of life mostly, but its effect can last until death.

There were 45 questionnaires filled by parents of amblyopic children on follow-up in pediatric optometry clinic Mayo Hospital Lahore. The main focus was to assess the cooperation of parents in treatment therapy and eye care providers' guideline about the appropriate treatment method. Among those 89% of the parents were mothers, who were supervising their child during therapy 60% could manage their time easily.

Near work is one of very vital aspect of amblyopia therapy because during amblyopia therapy good eye is occluded so during near work patient has to use the bad one for work, in this way vision improved. Near work during therapy is 88% which is quite good response by the parents.<sup>11</sup> Screen time during patching was 38%. They mostly 82% patch without intervals, which is very good method. Most of the

children 78% were irritated at the start of therapy but after one week their behavior becomes better. 51% showed good behavior after one week.

Method of patching is very important in occlusion therapy that's why parents have a great role in this regard. About 83% use appropriate method of patching. 87% perform therapy for proper time. Most of the patients were using tissue paper patch for occlusion. 67% cases of mocking, of those 71% of child feel bad about this. 27% Does not feel any embracement of the therapy. Only 31% stop the patching of child due to mocking and due to bitterness of their child.

Eye care professionals play a very important role in guidance and education of treatment plan and follow-up. 78% eye care providers and doctors guide the parents properly about treatment procedure. 76% parents thought this therapy a good treatment and 63% cases are of improved vision. 87% of total parents take this seriously and do their follow-ups at proper time.

## CONCLUSION

Parents of amblyopic patients especially mothers pay full attention to the treatment plan. Most of the eye care providers (ECP) guided them properly about treatment method. Occlusion therapy with near work resulted in improvement of vision.

## RECOMMENDATIONS

Proper screening of children must be done to rule out amblyopia in early age before visual plastic period is over. Both parents and children should be aware of importance of treatment of occlusion therapy. Both parents and children should be properly council about the benefits of occlusion. Social issues can be resolved by doing patch at home while doing near work, so that there will be minimum interaction of child with society. Modified patch type should be used according to interest of children. Pharmaceutical penalization should be used in case of poor compliance. There should be a separate councilor for parents during amblyopia therapy. Teachers should encourage amblyopic child for treatment therapy and do not change their behavior while therapy. Such sort of study must be conducted at broad level to get better result as Mayo Hospital is center of excellence

in the field of optometric eye care in Pakistan now a days.

**Table-1:** Patient supervision during therapy? and Caretakers' occupation? Cross-tabulation.

	Caretaker	Govt. Employee	House wife	Total
Who supervise the occlusion therapy?	Mother	17	23	40
	Other (Aunt or Sister)	2	3	5
<b>Total</b>		<b>19</b>	<b>26</b>	<b>45</b>

## REFERENCES

1. Alsaqr AM, Masmali AM. The awareness of amblyopia among parents in Saudi Arabia. *Therapeutic Advances in Ophthalmology*. 2019 Aug;11:2515841419868103.
2. Ebeigbe JA, Emedike CM. Parents' awareness and perception of children's eye diseases in Nigeria. *Journal of optometry*. 2017 Apr 1;10(2):104-10.
3. Alatawi A, Alali N, Alamrani A, Hashem F, Alhemaidi S, Alreshidi S, Albalawi H. Amblyopia and Routine Eye Exam in Children: Parent's Perspective. *Children*. 2021 Oct;8(10):935.
4. Lee H-J and Kim SJ. Effectiveness of binocularity-stimulating treatment in children with residual amblyopia following occlusion. *BMC Ophthalmol* 2018; 18: 253
5. Aljohani M, Alorabi S, Alrajhi Z, et al. Awareness, attitudes and practices regarding common eye diseases among general population in Saudi Arabia. *Ann Int Med Den Res* 2018; 4: ME01–ME4.
6. Webber AL. The functional impact of amblyopia. *Clin Exp Optomet* 2018; 101: 443–450.
7. Singh A, Rana V, Patyal S, et al. To assess knowledge and attitude of parents toward children suffering from strabismus in Indian subcontinent. *Indian J Ophthalmol* 2017; 65: 603–606
8. Ebeigbe JA and Emedike CM. Parents' awareness and perception of children's eye diseases in Nigeria. *J Optom* 2017; 10: 104–110.
9. Pehora C, Gajaria N, Stoute M, Fracassa S, Serebale-O'Sullivan R, Matava CT. Are parents getting it right? A survey of parents' internet use for children's health care information. *Interactive journal of medical research*. 2015 Jun 22;4(2):e3790.
10. Evans JR, Morjaria P, Powell C. Vision screening for correctable visual acuity deficits in school-age children and adolescents. *Cochrane Database of Systematic Reviews*. 2018(2).
11. Przybylski AK, Weinstein N. Digital screen time limits and young children's psychological well-being: Evidence from a population-based study. *Child development*. 2019 Jan;90(1):e56-65
12. Bogdanici ST, Roman A, Bogdanici C. School Integration for patients with amblyopia. *Romanian Journal of Ophthalmology*. 2015 Jan;59(1):48.
13. Hashemi H, Fotouhi A, Yekta A, Pakzad R, Ostadimoghaddam H, Khabazkhoob M. Global and regional estimates of prevalence of refractive errors: Systematic review and meta-analysis. *Journal of current ophthalmology*. 2018 Mar 1;30(1):3-22.
14. Fong N, Easterbrook B, Farrokhyar F, Sabri K. Parental knowledge of pediatric eye health in an ophthalmology clinic setting: validation and delivery of the EYEE questionnaire. *Canadian Journal of Ophthalmology*. 2018 Jun 1;53(3):210-4.
15. Alzahrani N, Alhibshi N, Bukhari DM, Aljohani M, Madani F. Awareness, perceptions and knowledge of amblyopia among pediatrics and ophthalmology clinics attendees in King AbdulAziz University Hospital, Jeddah. *Int J of Adv Res*. 2018;6:1506-17.