ORIGINAL ARTICLE

Impact of Parental Motivation in Amblyopia Management

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ABSTRACT

Aim: To determine the impact of parental motivation in amblyopia management.
Study Design: Descriptive study
Duration and Setting of Study: "Child Eye"- the children's eye clinic, Rajagiriya, Sri Lanka from January 2019 to December 2019
Methods: In this study, 394 children with amblyopia were divided in two groups. 197 children allocated in group A were prescribed with conventional treatment while 197 children allocated in group B were augmented with an additional parental motivator to easily visualize the potential visual prognosis. This visually noticeable chart yields to understand the visual prognosis of the child's amblyopic status and thereby influence parent to adhere the treatment protocol accurately and more responsibly.
Results: Data of 394 children between aged 3-8 years with amblyopia with at least 20% inter ocular difference were analyzed. The Best Corrected Visual Acuities (BCVA) after six months of treatment was compared with the initial levels of acuities at the time of presentation. The mean improvement in visual acuity was 39.57% in group B, managed with conventional treatment augmented with an additional parental motivator. Mean Improvement in group A, managed with conventional treatment, was 28.43%. Mean difference in improvement in VA was significantly greater in children managed with conventional treatment augmented with additional parental motivator ($p<0.05$).
Conclusions: Parental motivation through the visually catchable and understandable amblyopia chart builds a significant impact on the success of amblyopia management.

Keywords: Amblyopia, Motivation, Visual acuity.

INTRODUCTION

Amblyopia is a loss of visual function in one eye in comparison in to the other with result of the common cause of monocular visual impairment in both children, and young to middle-aged adults. Amblyopia is affecting 2-5% of the general population but no statistics are available for Sri Lanka.[1,2] It has been estimated to carry a projected life time risk of visual loss of at least 1.2%.[3] Approximately one third of the children with amblyopia do not achieve better visual acuity of 6/12 in the amblyopic eye, increasing their risk of bilateral visual impairment due to loss of vision in the non-amblyopic eye at any stage of life. Amblyopia causes decrease in quality of life because amblyopia affects their ability to learn in school, participate in sports, and later find employment. Additionally, people with amblyopia also have psychological issues such as low self-esteem, fear and depression.[4,5]

Since amblyopia is commonly an ocular disorder of children, parents must have a thorough understanding of the condition so that their children get the best possible care. The first people to notice any alterations or anomalies in their children's eyes' appearance, alignment, or movement are typically their parents, who then seek medical guidance to address their concerns. Additionally, parents of amblyopic children are crucial in ensuring that the ophthalmology clinic maintains their children's treatment plan and follow-up sessions.[6]

Parents are the primary caregivers for their children, and they decide whether to get them medical assistance. Parents' perceptions and attention of eye problems are critical. This insight becomes necessary since early detection and intervention, particularly for diseases like amblyopia, strabismus, and anisometropia, work best when given to children in early years of life. Visual impairment and ocular morbidity may come from parental lack of awareness of various eye disorders. This could lead to difficulty for them, their family, and society on an emotional,

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social, and economic level.[7,8]

Management for amblyopia is highly effective, but it must begin as soon as possible before the patient reaches advanced visual maturation. Otherwise, older children have substantially fewer chances of benefiting from therapy, and adult patients are much more likely to experience failure.[9] Many factors such as inadequate explainations to respondents, distance, inconsistent follow-up, lack of understanding of successful amblyopia treatments, and unwilling subjects and parents when occlusion therapy is suggested, may lead to poor treatment outcomes.[10-13] The treatment is prolonged, and if it is discontinued pre-maturely, there is a chance that the amblyopia could get worse. Therefore, the involvement and motivation of the parents is essential.[14-16] Amblyopia has long been a challenge for many clinicians. Optimal outcomes, where the amblyopic eye reaches a visual acuity similar to the other eye, are often impossible in many patients despite the maximum input from the clinicians. This study will determine the impact of parents' motivation, which will help to achieve the maximum goal to treat amblyopia and will also improve poor compliance.

METHODS

All those who had amblyopia (anisometropic, strabismic or mixed) with at least two lines or 20% inter-ocular difference were included in this study with the consent of their parents. The study was conducted during the period of January 2019 to December 2019 at "Child Eye"- the children's eye clinic, Rajagiriya, Sri Lanka. The best corrected visual acuities were checked with either Kay pictures crowded test or with LogMAR LED vision screening test. Orthoptic assessments were performed by the author to avoid individual variations and the refractions were done by one particular optometrist too. Patients with ocular pathologies, deprivation amblyopia, poor compliance and defaulted follow-ups were excluded from the study. In this study, the participants in group A were prescribed only the conventional treatment protocol in amblyopia therapy, while children in group B were augmented with an additional parental motivator to easily visualize the potential visual prognosis. This visually noticeable chart (Figure 1) yields to understand the visual prognosis of the child's amblyopic status at a glance and thereby influence parent to adhere the treatment protocol accurately and more responsibly. Visual acuity of the amblyopic eye was considered as outcome variable. The recorded acuities after six months were compared with the initial levels of acuities prior to start the treatment. If there was one or more lines improvement in visual acuity, it was recorded as 'improved'. Numerical data was obtained from all subjects.

RESULTS

A total 394 children aged 3-8 years who underwent amblyopia therapy of part time total occlusion (PTTO) with or without spectacles were recruited. Improvement in visual acuity was significantly greater in group B as compared to group A. The mean improvement in visual acuity in group B, managed with conventional treatment augmented with an additional parental motivator was 39.57%, while 28.43% improvement was noted in group A, managed with conventional treatment only. Table 1 shows the study participants' characteristics.

Table 01. Characteristics of the study participants

Characteristics		Group A, n (%) Total=197	Group B, n (%) Total=197
ET plus amblyopia		112 (56.85%)	119 (60.41)
XT plus amblyopia		59 (29.95)	46 (23.35)
Others		26 (13.2)	32 (16.23)
Gender	Male	93 (47.21)	100 (50.76)
	Female	104 (52.8)	97 (49.24)
Age groups (in years)	3 to < 4	22 (11.17)	20 (10.15)
	4 to < 5	29 (14.72)	22 (11.17)
	5 to < 6	41 (20.81)	40 (20.3)
	6 to < 7	44 (22.34)	43 (21.83)
	7 8	61 (30.96)	72 (36.55)
Improved	Yes	78 (38.57)	56 (28.43)
	No	119 (60.41)	141 (71.57)

n = frequency, % = percentage, ET = esotropia, XT = exotropia, <=less then

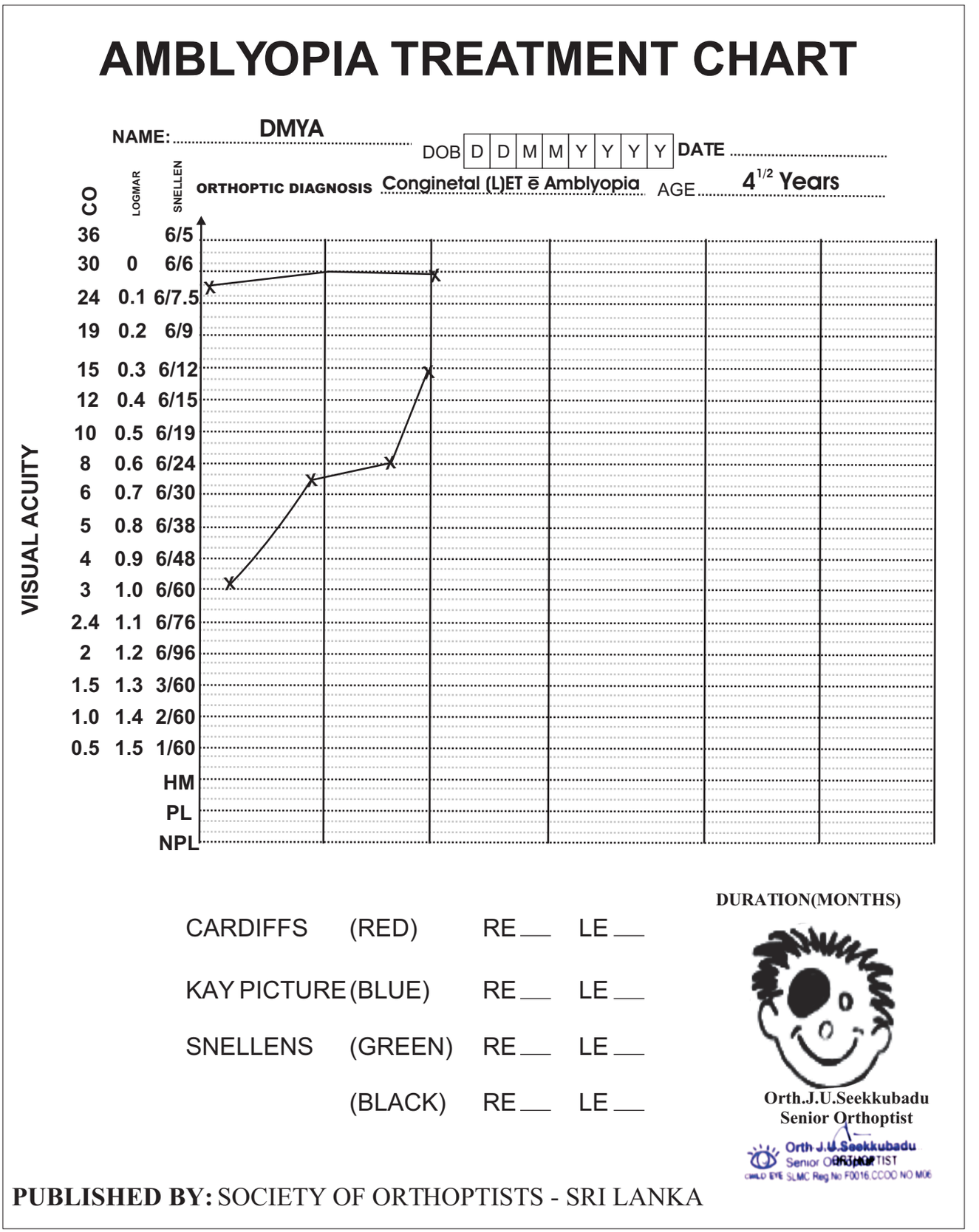

Figure 1. Evidence based Amblyopia chart
Author's construct- 2015

DISCUSSION

Therapeutic success depends greatly on the children's parents' collaboration. It was the reason for us to embark upon this study to evaluate the parents' role in amblyopia treatment and their influence on the final therapeutic results. Total of 394 children aged 3-8 years, who underwent amblyopic therapy of part-time total occlusion (PTTO) with or without spectacles was recruited. In this study, the subjects in the group A were prescribed only the conventional treatment protocol in amblyopic therapy, while children in group B were augmented with an additional parental motivator to easily visualize the visual prognosis at a glance. Findings from this study shows that parental motivation represents an essential component of the successful treatment and management approaches for children with amblyopia.

The mean of the visual improvement in group B was 39.57%, while 28.43% improvement in the control group. A study conducted in India shows a significant improvement in the children's visual acuity measured before and after prescribed therapy compared with the parents who were aware of amblyopia and its treatment protocols. Among 105 children, post-therapeutic improvement in visual acuity was recorded in 66 (62.8%) children, whereas the rest of 39 (37.1%) children showed no therapeutic success. Results from this study shows that parents motivation and trust, could lead them to better compliance with the prescribed therapeutic measures. Similar results have been reported from other studies.[17,18] Several studies found that the best results were obtained in children with the highest therapy compliance.[19,20] It is very important for the parents to realize the significant contribution made by him/her towards the successful treatment of the child. Parents of children with amblyopia are highly motivated to undertake the recommended treatment after becoming aware of the reduced visual acuity at the initial vision examination. Parental understanding would therefore seem to have a key role in determining the level of concordance with occlusion therapy.[21-23]Failure of parents to appreciate these facts means that there would be no sense of urgency to the treatment, which itself could lead to non-concordance. Parents may also actively choose to delay the treatment until their child reaches an age when either they can decide whether or not they wish to have the treatment themselves or reach an age when the rationale for the treatment can be more easily explained and understood.[24,25,26]

This is more pronounced in the Sri Lankan context where the family bond is considered as a prime importance. However, a narrowed-down study on parental motivation in amblyopic management has not been done so far. This particular study confirms that the parental motivation plays a significant role in the amblyopia management too, where the visually catchable and understandable visual acuity improvement on the amblyopia chart makes a significant impact on the success.

LIMITATION OF THE STUDY

Family background impacts positively or negatively on children's education and other improvisation activities. Many studies have proven that the parental education has a positive co-relationship on children's success.[18]However, this study did not consider family background.

CONCLUSIONS

Management of amblyopia in children is very challenging. There are many aspects that influence the final visual status of the patient. This study shows that parental perception and motivation for treatment is a major modifiable factor. The key to successful treatment of amblyopia lies in proper understanding of psychology of parents by the attending ophthalmologist.

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