



## **Vision Therapy Practicing by Primary Eye Care Practitioners**

Manoj Sah\*

*Department of optometry and vision science, Amity university, Gurgaon, Haryana, India*

**\*Correspondence to:** Manoj Sah, Department of optometry and vision science, Amity university, Gurgaon, Haryana, India.

### **Copyright**

© 2023 **Manoj Sah**. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Received: 12 June 2023

Published: 01 July 2023

**Abstract**

*The role of vision therapy plays an important role in correcting the binocular anomalies of adults and children as well as in strabismus, accommodative and vergence disorders. UK college of optometrists conducted or to determined theory and practically evidence-based practice of behavioral optometry in 2000 evaluate behavioral optometry in 10 titles. Neurological disorders, rehabilitations, syntonics related therapy, binocular vision therapy reduces myopia, accommodative, binocular disorders, due to under and over correction increases refractive errors, management strategies of strabismus, amblyopia, prisms which changes images shifting for strabismus patients. the studies have been done by the college of optometrists in vision development (covid) and quality of life (qol).*

*The alternative term that is being used in the literature, for training or exercises is the "vision therapy." these terms, however, imply a largely motor-based approach, which tends to limit the extent or comprehension to that provided by behavioral optometry. Although every optometrist has the choice of using vision therapy (vt) in their practices, the effectiveness of vts has been documented in hundreds of papers, including its impact on patients' quality of life. In order to establish the individuals involved with vt who are using classic vt and/or more global vt in addition to those dealing with the population of learning-disabled people, the goal of this study was to identify optometrists in associations who are involved in vision therapy and vision.*

**Keywords:** *Binocular vision, behavioural optometry, binocular functional abnormalities, visual therapy, case history, and visual information processing*

## Introduction

Vision therapy is a condition in which improving vision, reducing symptoms without any non-invasive or non-surgical technique or without any medicines or pharmacological drugs but in broad optometry vision therapy or occupational vision therapy not only improve vision but also games, performances, concussions, improve learning disabilities, reading and learning problems, dyslexia, convergence insufficiency, dyslexia and attention- deficit hyperactivity disorder(ADHD). [1]

According to American Optometric Association (AOA), optometric vision therapy is a “sequential disorder of neurosensory and neuromuscular activities which can be enhanced by reconnecting to brain for visual processing and visual skills”. [1] Vision therapy has been playing a key role in the field of optometry. In fact, it is the clinical aspect of the eye care practitioners in optometry field. Vision therapy plays a significant role in restoring of vision for patients. However, the unique procedures made by the practitioners and the therapists have been a challenging factor. [2]

Why do patients come to the optometrists or vision therapy specialists? Because they perform the tests under the supervision of an ophthalmologist. Vision therapy is not a traditional but a unique practice that creates new interventions which can be used for patients like amblyopia, difficulty with visual processing (medical therapy). [2] students from college of optometrists in vision development (covd) do question based survey. This includes various questions such as how many optometrists are involved in vision therapy, what are the techniques used by them and what are the barriers for vt (vision therapy) services for optometrists. [3]

Optometrists correct the non-strabismic accommodative and vergence disorder by establishing the coordination between the sensory and motor system. They not only provide comfortable and clear vision but also maintain eye and brain, hand and limb coordination. [4] there are very limited records or data found about referral patients cured with vision therapy so, optometrists play direct role for curing patients with binocular anomalies.5 the main goal of this survey is to know the involvement of optometrists in vision therapy and vision development, to make the relationship between VT and learning disabled people. [5]

This survey includes binocular vision anomalies, visual perception diagnosis, oculomotor or binocular anomalies, visual perception skills and therapy. [5] vision therapy equipments are used for improving binocularity, visual processing and motor system [6] The more effective method for improving visual perception is vision therapy that improves the binocularity. [6] The objective method to find out horizontal,

vertical eye movements, torsional movement, characteristic of nystagmus, torsional movement precise instrument called 3d-videoculography (3d-vog) to maintain binocularity in binocular vision therapy fields. In early time Maddox rod was the first instrument in orthoptics which help to create new ideas or intervention in binocular vision therapy area like office based and home-based vision therapy.[7] Around 3-5% of general population specially school going children suffered from non-strabismic binocular dysfunction that is Convergence Insufficiency (CI) and 26% of the population that symptoms like dizziness, eye pain, diplopia, difficulty with near work, sleepiness while reading, headache these all symptoms can be corrected with spectacles. [9] Vision therapy is carried out in patients with convergence insufficiency. Among them 65% ocular symptoms can be reduced by vision (performed for 12 weeks).[9] The changes in the quality of life after vision therapy involves self-care and good relationship between friends, family as well as in community. [10]

### **Methodology/methods:**

The database of PubMed and science direct articles published up July 20, 2022, was used for the search. “Vision therapy”, “binocular vision therapy”, “practicing by optometrist”, “practicing by eyecare practitioners” were utilised as keywords and mesh phrases. To further ensure the thoroughness of the search, all pertinent papers were carefully evaluated, and the reference sections of the discovered research paper were looked, through to find more related publications. Original works that were published in English between 1998 to July 20, 2022 and with the aim of examining the impact of binocular vision therapy practice by eye care practitioners or optometrists and its associated factors met the inclusion criteria. There were studies from all across the world included. Titles and abstracts were initially used. Study was conducted by Illinois college of optometry of every patient of age, sex, nationality, conduct the study on office and home-based vision therapy of visual information disorders, deviated eyes which  $p < 0.05$  used to evaluate the statistical data which was significant by using Anova.

## Results

The Optometrist Vision Therapy corrects the ocular symptoms of binocular dysfunctions, difficulties associated with convergence, accommodation and all motor skills learning. (a) 1,766 instagram posts in all were examined. Therapists or VT clinics made half of them. (50%) and just 14 posts (0.8%) were made by medical professionals. Most of them included self-promotion. Relationships between Instagram posts owner and intent posts are statistically significant. Owner, the offering of guidance and diagnosis, were discovered. [11] Vision Therapy mitigates the symptoms connected to visual dysfunction in each age group. [10]

## Discussion

The patients with high demand of near works and symptoms associated with their occupations need vision therapy treatment to cure symptoms and signs.[5] Around 50% of the patients diagnosed with convergence insufficiency, around 60 % provided with vision therapy in clinic based and questions were asked about vision therapy to the patient's around 94% strongly agreed with vision therapy play an important role for the visual processing to eliminate ocular sign and symptoms.5 about 34% of the patients' needs vision therapy but most of patients visit with doctors and the doctor determined completion of the patients visits but patients who needs vision therapy required motivation, counselling because at the first visit of vision therapy may worsen the end signs and symptoms at the end of the day, but later on it becomes much useful when completed. [5] The type of equipments used for diagnosis, treatment and management of binocular dysfunction and active vision therapy are considered as the most effective option for binocular dysfunction patients. [6]

## Visual perception evaluation

The test used for Developmental Visual Information Processing (DVIP) like cognitive skills used for identifying visual information for ocular modalities and more cognitive functions. [6] Vision therapy helps in controlled in non-strabismic binocular dysfunction, accommodative dysfunction but there are few studies report the achievement in improvement in the field of binocular vision therapy. The 3d- vog (videoculography) which is a non-invasive technique or non-contact technique, helps the examiners ocular movements and y, x-axis or torsional movements of patients.[7] Two cases which oculographic shown

complementary to the other tests used for evaluating binocular functions so that measurements of the vergence, amplitude of accommodation of eyes in characterized forms. [7] The majority of optometrists reported meeting one to three patients each week with binocular issues that would benefit from vision therapy. This doesn't seem to be connected to how many patients are seen each week. practitioners fail to search for binocular issues and as a result do not find any for those who do not consistently dilate consistently. Despite the fact that very few optometrists use vt in their practices, vt appears to be well-liked in general. Nearly two thirds of those who don't refer patients occasionally or frequently do so. Many additional people remarked that there are no vt practitioners in their area who can recommend patients. One physician claimed to conduct out-of-office therapy, including push up and pencil exercises.[10]

Vision therapy found effective treatment option for convergence insufficiency (ci) in school children (age8-13) about 13.61% found symptomatic with ci which can improved with brock string, barrel card, anaglyph, aperture rule, mirror stereoscope, ramp fusional vergence, jump fusional vergence not only ci but also significant improvement in Near Point of Convergence (NPC), accommodative ability, exophoria, Positive Fusional Vergence (PFV) was improved. [9]

The vision therapy depends upon the number of anomalies of the children. If the anomalies are more than one then it requires more weeks to maintain binocularity. For example, if CI of a child requires 8weeks for the effective methods to make significant results. If more than that occurs, then there could be a chance of regression in future. [9] Research had supported that vision therapy is an integral part of the patients with binocular anomalies such as accommodative anomalies and oculomotor anomalies to reduce symptoms. Most of the articles reduce patients' symptoms of binocular anomalies and there been change in quality of life by using COVD assessment for urban as well as rural populations. [10] The overall the study shows vision therapy reduces the symptoms which influence the that vision therapy plays integral parts in reducing subjective as well as objective symptoms and increasing overall quality of life in populations.[10]

## **Conclusion**

Vision therapy supports the effective treatment option for patients with concussion related vision disorders like movements of eyes, accommodation and vergence anomalies. [12] Food and Drug Administration of India (FDA) do not have any restriction on Binocular Vision Therapy (BVT). American optometric association and American academy of optometry told that vision therapy not only treats directly the learning

disabilities but also improves the ratio of visual processing or efficacy allow the patients more responsibility towards their education, their duties and hence because of vision therapy approach helps the person in multidisciplinary and learning disabilities.[14]

vision therapy performs in the form of eye exercise for convergence insufficiency, nine cardinal gaze position persons with neurological disorders which provides the positive impact to learning disorders patients. [14] The studies show that proximal, habitual near work, vergence evidence role to manage the anomalies. [13]

Yoked prism plays important role in behavioural optometry literature in management strategies which includes neurological problem, brain injury, for rehabilitation vision. [15] In the area of vision therapy a lot of vision therapy tools or equipments or devices are used. Each tool has its own advantages and disadvantages on the basis of vision therapy procedures. The tools used for vision therapy are vision prime. The most advised tool, trye is considered as cost effective.[16] Stereoscope is specially used in office. Bernelloscope is the widely used software like telehealth and bynocs. Treatment for vision or vision exercise posted on instagram, social media platform for seek for vision exercise for patients to support vision therapy information for eye surgeon. [11]

Binocular vision Therapy (BVT) in the paediatric age group poses unique challenges for the optometrists. These challenges range all along the management and treatment course right from the lack of a reliable history challenges in treatment of binocular anomalies. As evident from this review, the etiology for binocular anomalies, can be highly varied. One should not hesitate in subjecting the children to examination. There is no straight forward consensus regarding it.

## References

1. Rucker, J. C., & Phillips, P. H. (2017). Efferent Vision Therapy. *Journal of Neuro-Ophthalmology*. doi: 10.1097/WNO.0000000000000480
2. Damari, D. A. (n.d.). Vision Therapy for Non-Strabismic Binocular Vision Disorders A Evidence-Based Approach.
3. Pearson, M. (1993). Attitudes and practices of vision therapy: A survey of Montana Attitudes and practices of vision therapy: A survey of Montana optometrists. Retrieved from <https://commons.pacificu.edu/opt/1073>

4. Ciuffreda, K. J. (2002). The scientific basis for and efficacy of optometric vision therapy in nonstrabismic accommodative and vergence disorders. *Optometry*, 73(12), 735–762.
5. Bodack, M. I., & Vricella, M. (2007). Vision Therapy in an Adult Sample. *Journal of Behavioral Optometry*, 18(4), 100–105. Retrieved from <http://oeopf.org/jbo/journals/18-4%5CnBodack.pdf>
6. Gilmore, V. L., Advisor, F., & Wrubel, D. N. (n.d.). A Survey of Michigan Optometrists Involved with Vision Therapy.
7. Laria, C., & Piñero, D. P. (2013). Evaluation of binocular vision therapy efficacy by 3D video-oculography measurement of binocular alignment and motility. *Binocular Vision and Strabology Quarterly*, 28(3), 136–145.
8. Doyle, M. P. (2016). Article 4 Vision Therapy In The Modern Behavioural Optometry Practice: The History of Vision Therapy and Contemporary Approaches to Case Selection, Case Management, and the Delivery of Treatment. In *Optometry & Visual Performance* (Vol. 15).
9. Jang, J., Tai-Hyung, K., & Moon, H. (2017). Effectiveness of vision therapy in school children with symptomatic convergence insufficiency. *Journal of Ophthalmic and Vision Research*, 12(2), 187–192. doi: 10.4103/jovr.jovr\_249\_15
10. Daugherty, K. M., Frantz, K. a, Allison, C. L., & Gabriel, H. M. (1995). Evaluating Changes in Quality of Life after Vision Therapy Using the COVD Quality of Life Outcomes Assessment. *Quality*, 75–81.
11. Johnson, A., Khan, S., & Koo, E. B. (2021). Social media and vision therapy: Perspectives of providers and patients on Instagram. *Journal of AAPOS*, 25(3), 166.e1-166.e5. doi: 10.1016/j.jaapos.2020.11.023
12. Gallaway, M., Scheiman, M., & Lynn Mitchell, G. (2017). Vision Therapy for Post-Concussion Vision Disorders. In *Optometry and Vision Science* (Vol. 94, Issue 1).
13. Shainberg, M. J. (2010). Vision Therapy and Orthoptics. *American Orthoptic Journal*, 60.
14. Lam-Bert, J., & Lambert, J. (2013). Vision Therapy and Computer Orthoptics: Evidence-Based Approach to Use in Your Practice. *American Orthoptic Journal*, 63.



15. Barrett, B. T. (2009). A critical evaluation of the evidence supporting the practice of behavioural vision therapy. In *Ophthalmic and Physiological Optics* (Vol. 29, Issue 1, pp. 4–25). doi: 10.1111/j.1475-1313.2008.00607.x
16. Koduri, M., Gella, L., Gunaganti, S., & Bhardwaj, L. R. (2021). Practitioners Perspectives on Vision Therapy Devices. *International Research Journal of Modernization in Engineering Technology and Science*, 03(12), 1100–1116.

