COLLABORATION COLLABORATION COCCUPATIONAL THERAPISTS A OPTOMETRISTS

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Abstract

Many occupational therapists have close professional ties to optometrists because of their common philosophy and exposure to similar patient populations. The greatest advantage of collaboration between the occupational therapist and the optometrist is the opportunity to provide the most appropriate and efficient treatment for patients with special needs who also have vision dysfunction. A collaborative model for visual screening, evaluation and management between the occupational therapist and the optometrist is presented in this article.

Key Words

occupational therapist, optometrist, collaboration

ommonalities exist between the models of human performance used by optometry and occupational therapy.1 Both recognize the importance of the ongoing relationship between vision and movement in development and in human performance. The importance of movement and motor skills was described by A. Skeffington, O.D., who said, "Thinking is a movement pattern.² G. N. Getman, O.D., described vision as "the learned ability to see for information and performance. Vision is the ability to understand the things we cannot touch, taste, smell, or hear. Vision is the process whereby we perceive space as a whole."3 According to Josephine C. Moore, Ph.D., O.T.R., D.Sc.(Hon), "Vision is our most important sense."4 And Arnold Gesell, M.D., stated, "For the child, the space world is not a fixed and static absolute. It is a plastic domain, which he manipulates in terms of his nascent powers. He was born with a pair of eyes, but not with a visual world. He must build that world himself through a series of positive acts."5

Functional vision depends on a complex neurologic interaction of visual stimuli that integrate with subcortical and cortical mechanisms of postural control, balance, sensorimotor skills, and perception. Disruption of these pathways due to trauma, developmental delay, or congenital abnormalities will compromise visual behavior, which affects the body's total action system.

There is a high incidence of ocular and visual pathway pathology and vision dys-

function among persons with conditions that affect their ability to perform activities of daily living (ADL) (e.g., cerebral palsy, brain injury, neurological or genetic abnormalities, mental and behavioral disorders).6 These patients may present with high refractive errors, decreased visual acuity, strabismus, binocular dysfunction, accommodative dysfunction, ocular motor dysfunction, or deficits in visual information processing skills. Many of these patients also have deficits in gross and fine motor skills, balance and equilibrium, sensory integration, and ADL (e.g., dressing, reading, driving, attending school, working).

Vision rehabilitation for these patients involves a number of professional and treatment methods. The occupational therapist often provides vision screening and treatment for patients who have visual problems. Many optometrists 1,7,8,9,10 and occupational therapists 11,12,13,14,15,16 have written about vision and the field of occupational therapy. Continuing education courses have been taught by many, including these authors. However, there still seems to be a great need for communication on an individual therapist-to-doctor level as well as on a formal association level. Questions about appropriate referral criteria, co-management strategies, and most appropriate treatment providers are among those yet to be answered. This article presents a model for the occupational therapist and optometrist to co-manage the patient with vision dysfunction.

THE PROFESSIONALS

Since the field of vision rehabilitation is complex and involves a number of care providers, it is important to know what each profession has to offer. In addition, recent legislative changes in many states have blurred the once clear-cut definitions of the three "O"s in eye care: ophthalmologist, optometrist, and optician.

Ophthalmologist (M.D.)

An ophthalmologist is a physician who specializes in the medical and surgical care of the eyes and visual system and in the prevention of eye disease and injury. The ophthalmologist provides comprehensive eye health and vision examinations and medical and surgical eye care. He or she also diagnoses general diseases of the body and treats ocular manifestations of systemic diseases.¹⁷

Optometrist (O.D.)

An optometrist is an independent primary health care provider who specializes in the examination, diagnosis, treatment, and management of diseases and disorders of the visual system, the eye, and associated structures. The optometrist provides comprehensive eye health and vision examinations; diagnoses and treats eye diseases and vision disorders; detects general health problems; prescribes glasses, contact lenses, low-vision rehabilitation, vision therapy, and medications; performs certain surgical procedures; and counsels patients regarding surgical alternatives and vision need relative to their occupations, avocations, and lifestyles.18

Optician

An optician fabricates, fits, and sells eyeglasses. Depending on the state, the optician may or may not be certified. He or she does not perform examinations or prescribe optical devices. Some opticians are certified and are greatly experienced in the optical field, and others have minimal experience or no certification.

VISION THERAPY

Optometric vision therapy is an individualized regimen prescribed for a patient in order to provide medically necessary treatment for diagnosed visual dysfunctions, to prevent the development of visual problems or to enhance visual performance to meet the defined needs of the patient.

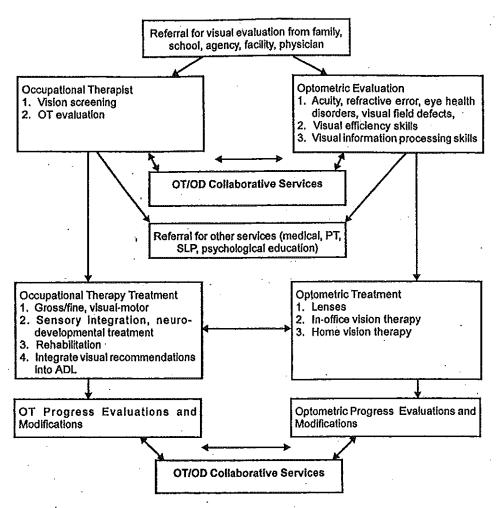


Figure 1. OT/OD Collaborative Model

Optometric vision therapy is appropriate treatment for visual conditions that include, but are not limited to, strabismic and nonstrabismic binocular dysfunctions, amblyopia, accommodative dysfunctions, ocular motor dysfunctions, visual-motor disorders, and visual-perceptual (visual information processing) disorders.

The systematic use of lenses, prisms, filters, occlusion, and other appropriate materials, modalities, equipment, and procedures is integral to optometric vision therapy. The goals of the prescribed treatment regimen are to alleviate the signs and symptoms, achieve desired visual outcomes, meet the patient's needs, and improve the patient's quality of life. ¹⁹

Treating the visual system through the use of lenses, prisms, and other vision therapy techniques alone or in conjunction with other sensorimotor treatment modalities can affect muscle tone, posture, movement, visual-motor, visual-

spatial, visual-perceptual, and cognitive functioning.²⁰ Vision therapy is prescribed by an optometrist.

The College of Optometrists in Vision Development (COVD) Board of Directors certifies optometrists in vision therapy who have successfully completed an oral and written examination to become a Fellow (FCOVD). COVD maintains a referral list for board certified optometrists in vision therapy.

Ophthalmologists sometimes use orthoptics, which is visual training for the treatment of binocular dysfunctions. In contrast, optometrists are more involved in the rehabilitation process, which involves special lenses, prisms, low-vision devices, and vision therapy, which are not emphasized in ophthalmology training or practice. These differences between the eye care professions can result in confusion for therapists and patients and often interfere with identifying and treating vision disorders that affect ADL.²¹ It is

therefore important that referrals are made to the eye care professional who has the most appropriate training and expertise in a particular area. For example, if pathology is a concern, referral to an optometrist or an ophthalmologist may be appropriate. If eye surgery is necessary (e.g., a patient has a retinal detachment) then referral to an ophthalmologist would be more fitting. If vision rehabilitation or vision therapy is needed, then referral to an optometrist would be especially suitable.

Ophthalmologists and optometrists provide an invaluable service to occupational therapists by providing information on etiology and prognosis of eye conditions. Optometrists provide additional assistance in maximizing the patient's use of vision. Both types of assistance are needed. The best model is where an ophthalmologist and optometrist work collaboratively in medical management and the optometrist and occupational therapist work collaboratively in rehabilitation management.

THE ROLE OF OCCUPATIONAL THERAPY

Occupational therapy focuses on the person's ability to engage in ADL, including performing self-care, working, attending school, playing, or living independently. The sensory integrative process includes, but is not limited to, gross or fine motor coordination; tactile awareness; stereognosis; kinesthesia; proprioceptive awareness; ocular control; vestibular, auditory, gustatory, and olfactory awareness; body scheme; reflex maturation; postural security; awareness of both sides of the body; and motor planning. These mechanisms lay the foundation for perceptual-motor skills such as visual-motor integration, visual-spatial skills, and auditory language skills. These perceptual-motor skills thereby provide the basis for academic learning, emotional and social adjustments, and ADL performance. By understanding the importance of vision and how visual deficits interfere with ADL, occupational therapists can more effectively help clients to achieve their goals.

COLLABORATION

Occupational therapy and optometry have been sharing professional concepts and working closely together in clinical, hospital, and school settings for years.

Steven Cool, Ph.D., stated that "These two health professions adopted a wholeperson, integrated, functional approach to treatment long before it was even vaguely fashionable."22 Optometry emphasizes the role of vision as primary and movement skills as foundational. On the other hand, occupational therapy's efforts focus primarily on the individual's movement and balance abilities, with vision being perhaps the most important sensory system. Vision is not conceptualized as merely a camera image of an object that is conjugate with the retina but rather as a complex sensorimotor process. Consequently, successful vision care goes beyond considerations of the end organ, the eye. It is broadened to include holistic aspects of human performance.1

Model for Vision Evaluation and Treatment

Vision goes beyond 20/20 visual acuity, good optics, and normal eye health. Optimal vision includes binocular function, accommodation, ocular motility, visual information processing, and motor skills. A model proposed by Scheiman⁷ of three interrelated components of vision is useful in understanding the complexity of the visual process. It can be used for vision screening, evaluation, and treatment recommendations. The components are:

- > Acuity (eyesight, such as 20/20), refractive error (near- or farsightedness), and eye health disorders (pathology such as cataracts, retinal detachment)
- Visual efficiency skills, including accommodation (focusing), binocularity (strabismus, eye turn, eye teaming), and ocular motility (pursuits, saccades, fixations)
- Visual information processing skills, including visual discrimination, figureto-ground perception, closure, memory, visualization, and visual motor integration

A model continually changes and can be modified according to situations, locations, and available services. In many managed health care, military and private practice systems, the model demonstrated in Figure 1 provides for the most appropriate use of personnel for patient condition. It is important to note that occupational therapist/optometrist collaboration should be continually reviewed and addressed throughout the treatment program.

If the patient initially is referred to the occupational therapist, the therapist may perform a vision screening. Vision screenings vary, on the basis of the patient's age and functional status and the screener's experience. Guidelines for School Vision Screening²³ may be used in school settings, and a screening more appropriate for a rehabilitation setting can be found in Understanding and Managing Vision Deficits-A Guide for Occupational Therapists.7 If indicated by the screening, the patient should be given a referral for a vision evaluation. In many cases, a vision screening cannot be completed because of patient limitations, such as a child with developmental delay or an adult who is nonverbal or has aphasia. In these cases, the patient should be evaluated by an optometrist. In some cases, such as a premature infant with retinal problems or a trauma patient with orbital injury, a referral directly to an ophthalmologist may be indicated. However, in most cases, the optometrist is the primary vision care provider. The initial occupational therapy screening may indicate the need for additional visual-motor, perceptual, sensory integrative, or other types of evaluation. A consultation (with the appropriate medical providers, patient, and family) and a report are then completed by the occupational therapist and a treatment plan is prepared for the patient.

If the patient is referred to an optometrist, the optometrist should evaluate the three vision component areas described in Scheiman's model. Treatment regimens might include medication, glasses, prisms, or vision therapy. If necessary, a referral should be made to other professionals.

Ideally, all professions would consult during the treatment of a common patient, but in these days of busy schedules and managed care, this does not always occur. The objectives for a consultation with all involved professionals are to review the entire lists of deficits, prioritize the significance of the disorder, and develop treatment plans in which all professionals contribute.

Table 1 is designed to help occupational therapists to understand vision symptoms and their effect on function and to provide occupational therapy management suggestions. It may be used as a guide for collaborating with the consulting optometrist.

Table 1. Symptoms, Effect on Function, and OT Management Suggestions

Vision Problem	Symptoms and Effect on Function	Supportive and Compensatory Intervention	Direct Remediation
Reduced visual acuity (VA) (corrected with prescription)	 Blurred vision Squints Holds objects close Avoids visual tasks Discomfort when involved with visual tasks 	 Refer to optometrist If glasses are prescribed, assist with compliance during OT If patching is recommended, encourage proper use 	 If treated early, VA problems usually don't require direct remediation
Low vision (VA reduced and not corrected with prescription)	Blurred vision Squints Holds objects close Avoids visual tasks Difficulty recognizing faces, with mobility, with ADL	 Refer to optometrist If glasses or low-vision devices are prescribed, support and assist during OT procedures Modify lighting Increase contrast Enlarge targets and print Use visual markers to help patient keep place 	Direct remediation is not effective; only supportive and compensatory procedures are useful
Visual field deficits	 Difficulty with mobility; hits curbs, steps, objects; holds onto wall, bumps into things Leaves food on half of plate Difficulty with reading; slow rate, loss of place Difficulty with ADL, including self-care 	 Referral for full vision examination Ensure use of appropriate glasses, which may incorporate lenses and prisms Teach organized scanning techniques Make patient aware of how visual defect interferes with various activities Provide markers to help reading 	 Visual field defects usually cannot be improved through therapy, although supportive and compensatory procedures can have great benefit
Binocular vision disorders: strabismic	 Cosmetic issue, eyes look crossed or "wall-eyed" If Intermittent, may have double vision that can interfere with eye-hand and mobility tasks Eyestrain 	 Refer to the optometrist Use eye patch to eliminate double vision during OT activities, as prescribed by optometrist Encourage use of glasses with prism if prescribed by optometrist 	Discuss with optometrist the need for patching during OT procedures
Binocular vision disorders: nonstrabismic	 Intermittent double vision Discomfort and eyestrain for visual tasks Fatigue, inattention during OT session Difficulty with eye-hand tasks and other ADL tasks requiring depth judgments 	 Refer to optometrist Encourage compliance of glasses and prism if prescribed by optometrist Encourage patch use if prescribed by optometrist Encourage using page marker Encourage frequent breaks 	 OTs who work with an optometrist in a rehabilitation hospital may be able to follow through on vision treatment (VT) procedures prescribed by optometrist Under all other conditions, only supportive and compensatory treatment is available
Ambiyopia	 If unilateral, generally no symptoms If bilateral, symptoms will be similar to low-vision category, although less severe 	 Refer to optometrist If patching is prescribed, ensure that the patient uses the patch as recommended by the optometrist During course of active amblyopia treatment, use compensatory approaches listed under "low vision" 	 The OT can have the patient wear a patch while engaged in OT procedure OT may be able to incorporate ocular mobility techniques while one eye is patched
Accommodative disorders	Discomfort and eyestrain for visual tasks Blurred vision Rubs eyes Fatigue and inattention with sustained near work .	 Refer to optometrist If glasses are prescribed, ensure compliance If bifocals have been prescribed, ensure that patient does close work while using bottom of bifocal Suggest larger print Encourage frequent breaks 	 OTs who work with an optometrist in a rehabilitation hospital may be able to follow through on VT procedures prescribed by optometrist Under all other conditions, only supportive and compensatory treatment is available

Vision Problem

Symptoms and Effect on Function

Supportive and Compensatory Intervention

Direct Remediation

Ocular motility disorders

- Excessive head movement
- Frequently loses place
- Skips lines
- Poor copying skills
- Difficulty with ADL that require change in fixation (driving, reading, writing)
- Refer to optometrist
- Encourage using a marker with reading
- OTs who work with an optometrist in to follow through on VT procedures prescribed by optometrist. OTs in other settings can incorporate eye

Nystagmus

- Blurred vision
- Squints
- Holds objects close or must be close
- If newly acquired, may be nauseated . or dizzy
- Difficulty with ADL with significant visual requirements (driving, reading, writing, cooking, cleaning, etc.)
- Refer to optometrist
- If glasses are prescribed, ensure compliance
- Modify working distances for tasks Increase lighting and contrast if helpful
- Enlarge targets and print
- Encourage using visual markers
- a rehabilitation hospital may be able movement activities
- Direct remediation is not effective, only supportive and compensatory procedures are useful

Visual perception disorders

- Confuses likenesses and differences
- Unable to selectively attend to appropriate visual stimulus
- Ignores details during visual tasks
- Tends to use other senses to make what should be visual discriminations
- Poor recall of visually presented material
- Sloppy drawing skills
- Difficulty with copying and writing
- Difficulty with most ADL that have a high demand on visual information processing (driving, writing, reading, sports, mobility)
- Refer to optometrists for consultation . OT uses occupational therapy to rule out VA, refractive, eye health and visual efficiency problems
- Simplify visual tasks
- Eliminate extraneous distractions
- Limit amount of visual stimuli
- approaches such as sensorimotor integration, NDT treatment
- OT may use visual-perceptual activities or work with optometrist

From Understanding and Managing Vision Deficits—A Guide for Occupational Therapists, by M. Scheiman, 1997. Copyright 1997 by Slack, Inc. Adapted with permission.

There are many cases in which collaboration between occupational therapy and optometry is appropriate. Examples of collaborative services are presented in the following patient cases. Vision therapy most often is prescribed and implemented through the optometrist's office. Sometimes the occupational therapist, under the direct supervision of the optometrist, may also be involved in the actual vision therapy treatment. This often occurs in rehabilitative hospitals and in some school systems.24

The vision therapy that the occupational therapist performs includes activities to improve eye movements, scanning, or visual information processing skills. It is crucial to understand that an occupational therapist providing vision therapy without an optometrist's supervision, especially when the vision therapy uses lenses, prisms, patching, and binocular instrumentation, may be considered practic-

ing optometry without a license. It may also have detrimental effects on the patient's vision.

Occupational therapy is often the priority in treating preschool children with other impairments and delays, such as limited attention and concentration; older children with mental disabilities and multiple impairments; and adults with traumatic brain injury or stroke who are undergoing rehabilitation in hospital settings. However, these patients may still need lenses, prisms, and/or patching. An evaluation by an optometrist early in the rehabilitative process can often improve visual functioning, resulting in the patient being able to use other therapies more quickly and more cost-effectively. It is always disheartening to observe rehabilitative programs where a patient is being asked to perform a visual task without appropriate glasses to see the target! It would be beneficial for all therapists to have

knowledge of the patient's current vision status.

CASE EXAMPLES OF COLLABORATION

> A 2-year-old child with Down syndrome was referred to an occupational therapist because of poor motor skills. The child appeared to have crossed eyes. Vision screening could not be completed because of the patient's inattention and lack of language skills. A referral to an optometrist resulted in glasses and occlusion (patching) prescribed for hyperopia (farsightedness), strabismus (crossed eyes), and amblyopia (lazy eye). Occupational therapy was initiated to improve the child's motor skills, and frequent follow-up evaluations by the optometrist were necessary to monitor the patching and glasses. Vision therapy was prescribed at a later date.

- A vision screening by the occupational therapist in a rehabilitation hospital revealed that a patient had poor visual acuity and decreased eye-hand coordination skills. The therapist wanted to initiate vision rehabilitation and referred the patient to an optometrist for a vision evaluation. Vision testing reyealed that the patient had bilateral vitreous hemorrhages that required immediate medical treatment and the optometrist referred the patient to an ophthalmologist. It would have been inappropriate to initiate vision rehabilitation on this patient until the visual medical condition was treated.
- > A 9-year-old boy diagnosed with visual-perceptual motor deficits was referred to the occupational therapist at school. Vision screening indicated poor oculomotor and convergence skills, indicating a referral to an optometrist for a functional vision evaluation. The optometrist confirmed oculomotor and binocular dysfunctions and recommended in-office vision therapy. The optometrist and occupational therapist collaborated to coordinate the patient's occupational therapy at school with his in-office vision therapy.
- > A 33-year-old woman with a brain injury complained of diplopia (double vision), balance problems, dizziness, and the inability to read. She was referred to occupational therapy and physical therapy for her balance and dizziness problems. A vision screening revealed poor oculomotor skills and strabismus (eye drift outward). She was referred to an optometrist. Prism glasses to eliminate diplopia significantly reduced her symptoms and enabled her to participate in occupational therapy and physical therapy for the balance disorder.
- > A 78-year-old man experienced a stroke, resulting in hemiparesis and visual field loss. Occupational therapy and physical therapy were initiated. He was also referred to an optometrist, who prescribed yoked prism glasses. The glasses improved the patient's posture and visual awareness, thereby allowing the occupational therapist to treat him more successfully in ADL.
- > An 8-year-old girl with learning disabilities complained of blurred vision and was referred by the school nurse to an optometrist for a vision evaluation. The optometrist diagnosed hyperopia

and astigmatism and prescribed glasses. A visual information processing evaluation revealed deficits, including significant fine motor delays. A referral to the occupational therapist was made to address the fine motor delays, and vision therapy was initiated to improve visual information processing skills.

CONCLUSION

Many occupational therapists have close professional ties to optometrists because of their common philosophy and exposure to similar patient populations. Communication, planning, programming, and consultation between the occupational therapist and the optometrist provide an opportunity to learn and share knowledge so that the models of human performance continue to grow, solidify, and supplement each other. The greatest advantage of collaboration between the occupational therapist and the optometrist, however, is the opportunity to provide the most appropriate and efficient treatment for patients with special needs who also have vision dysfunction. We should take advantage of the best each field has to offer. Instead of duplicating services or providing a scaled-down version of treatment, the occupational therapist and the optometrist should be working together as individual clinicians as well as organized professional groups.

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