

Effectiveness of Occupational Therapy Interventions for Older Adults Living With Low Vision

MeSH TERMS

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An 85-yr-old woman with macular degeneration struggles to read the daily newspaper, an important part of her morning routine. A 78-yr-old man with glaucoma recently gave up attending his weekly bowling league. These two older adults, along with millions of other older adults, are trying to adapt to a life with vision loss. Recent data have shown that 1 in 6 Americans older than age 70 are living with low vision (Dillon, Gu, Hoffman, & Ko, 2010), and that number is expected to double by 2030 (Congdon et al., 2004).

According to an American Occupational Therapy Association (AOTA; 2010) workforce study, more than 35% of occupational therapy practitioners work in acute care hospitals, long-term care environments, and home health, settings that meet the needs of clients ages 65 or older. All occupational therapy practitioners working with older adults, not just those who choose to specialize in low vision rehabilitation, must understand the influence of visual impairment on participation. Impairments at the body structure and body function level often cause a decrease in occupational performance. Similar to weakness or paralysis, a decrease in vision can significantly influence one's ability to engage in desired occupations.

Just as occupational therapy practitioners provide various interventions to facilitate participation for people experiencing occupational loss after a stroke, they also support people unable to engage in

occupations because of vision loss by focusing on person factors (e.g., teaching strategies to use remaining vision), adapting the environment (e.g., improving lighting), or altering the occupation (e.g., using talking books). Some of the specific interventions occupational therapy practitioners use to improve occupational performance may be unique to clients with vision loss (e.g., optical devices), just as the interventions used to improve occupational performance may be unique to those living with stroke (e.g., constraint-induced movement therapy) or any other impairment. Whether intervening with people with a mental health condition, loss of a limb, injury to the back, or decreased vision, the central goal of occupational therapy is to promote health and participation through engagement in occupations (AOTA, 2008).

Before the 1990s, the primary professionals working to address the challenges associated with visual impairment were optometrists and vision rehabilitation professionals, including certified vision rehabilitation therapists, certified orientation and mobility specialists, and certified low vision therapists. Traditional services were delivered using an educational model with reimbursement provided through federal monies, state funds, and private charities (Mogk & Goodrich, 2004; Orr & Rogers, 2001; Stelmack, 2005; Warren, 2011).

A series of policy changes has made it possible for occupational therapy practitioners to provide rehabilitation services to older adults with low vision. In 1991, the

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Health Care Financing Administration, now called the Centers for Medicare and Medicaid Services (CMS), expanded its definition of *physical impairment* to include visual impairment (Mogk & Goodrich, 2004). The Balanced Budget Refinement Act of 1999 (Pub. L. 106–113) provided legislation to enable optometrists to meet the physician supervision requirement for Medicare beneficiaries (American Optometric Association Federal Relations Committee, 1999). And in 2002, CMS delineated a national low vision rehabilitation coverage policy for licensed health care providers, including occupational therapy. These legislative and CMS changes have increased the referrals of older adults with vision loss to occupational therapy practitioners, and many collaborative relationships between occupational therapy and optometry and ophthalmology have been initiated using the medical rehabilitation model (Owsley, McGwin, Lee, Wasserman, & Searcey, 2009). In this model, ophthalmologists and low vision optometrists refer clients and provide medical oversight to occupational therapy practitioners.

Still, many older adults with vision loss have not received needed intervention for reasons including (1) the limited supply of rehabilitation professionals with knowledge in low vision rehabilitation to meet the growing needs of older adults (Mogk & Goodrich, 2004); (2) the limited knowledge about vision rehabilitation services on the part of many health care professionals (Pollard, Simpson, Lamoureux, & Keeffe, 2003); (3) the perception by many that visual impairment is a natural part of aging rather than a condition where intervention can be effective (*Vision Rehabilitation: Care and Benefit Plan Models*, 2002); and (4) many programs' choosing to provide services only to people considered *legally blind*, defined as having visual acuity of 20/200 or worse based on a Snellen eye chart or a visual field of $\leq 20^\circ$ (*Disability Evaluation Under Social Security*, 2010). Many older adults living with vision loss do not meet these criteria, however. Extensive evidence has shown that those who do not meet the criteria of being legally blind still have significant challenges with daily tasks (e.g., see Crews & Campbell, 2004).

In 1995, Mary Warren, a pioneer in occupational therapy practice in low vision

rehabilitation, served as guest editor for a special issue of the *American Journal of Occupational Therapy (AJOT)* on low vision. In her introductory editorial, Warren emphasized the need for occupational therapy practitioners to understand the influence of vision loss on occupational performance (Warren, 1995), and this need is just as important today. With the changing older adult demographics, the need for occupational therapy practitioners skilled in providing interventions to people living with vision loss is urgent.

Empirical evidence for the effectiveness of specific interventions for older adults with low vision has been limited, and practice has been based on consensus reports (Stelmack, 2005). In 2002, the Lewin Group, commissioned by the Agency for Healthcare Research and Quality, determined that the need for more evidence to understand the most effective delivery model and services for people with vision loss was urgent (*Vision Rehabilitation: Care and Benefit Plan Models*, 2002), and within the past 10 years, considerably more research has examined low vision rehabilitation. In 2009, AOTA initiated and supported systematic reviews related to older adults and low vision as part of the Evidence-Based Practice Project (Arbesman, Lieberman, & Berlanstein, 2013). The four systematic reviews in this issue of *AJOT* address (1) performance of basic activities of daily living (ADLs) and instrumental activities of daily living (IADLs) at home, (2) reading, (3) driving and community mobility, and (4) leisure and social participation and explore the effectiveness of interventions within the scope of occupational therapy practice for older adults with low vision.

Liu, Brost, Horton, Kenyon, and Mears (2013) discuss intervention approaches to address ADL and IADL performance at home for people with vision loss. Providing a combination of education regarding low vision, teaching use of low vision devices, and sharing low vision resources was important in supporting participation in daily activities. In addition, they also show that multiple sessions of training in the use of low vision devices and eccentric viewing and a multidisciplinary approach that focuses on personal goals facilitate independence in daily activities. In

summary, they found that multiple components, multiple sessions, and multidisciplinary interventions all improved ADL and IADL skills for older adults with low vision.

In reviewing the evidence regarding interventions to improve reading for older adults with vision loss, Smallfield, Schaefer, and Myers (2013) found support for low vision programs that include occupational therapy. There was also evidence in support of using optical devices, teaching eccentric viewing, providing illumination, and increasing font size and spacing between letters to facilitate reading. It is clear that occupational therapy practitioners have an important role in facilitating reading for older adults living with low vision, given this activity's significant implications for participation in many daily activities.

In his systematic review of interventions that improve driving and community mobility for older adults with low vision, Justiss (2013) notes a variety of strategies studied, including the use of bioptics, prisms, multidisciplinary vision rehabilitation, driving simulator training, driver education programs, and orientation and mobility training. Unfortunately, at this time, the evidence documenting the effectiveness of these interventions in enabling driving or community mobility for older adults living with vision loss is insufficient.

Finally, older adults with vision loss often struggle to engage in leisure and social activities. In their systematic review, Berger, McAteer, Schreier, and Kaldenberg (2013) found strong evidence in support of using a problem-solving approach to improve leisure and social participation for older adults with low vision. They also found an interdisciplinary approach that included a variety of professionals, such as occupational therapists, ophthalmic nurses, ophthalmologists, optometrists, social workers, and rehabilitation counselors, to be effective.

This issue of *AJOT* adds to the growing and evolving understanding of the effectiveness of occupational therapy interventions to meet the needs of older adults living with low vision. However, additional high-quality research is needed, including (1) studies exploring the effectiveness of occupational therapy's unique role within low vision rehabilitation,

because only some of the studies reviewed included occupational therapy practitioners as the interventionist; (2) studies with larger sample sizes and varied vision diagnoses (most participants in the studies reviewed had macular degeneration, making the results difficult to generalize to other populations); and (3) research performed in the United States, because many of the rigorous studies reviewed were completed outside of the United States where models of practice differ, limiting generalizability even further.

Occupational therapy practitioners are key players in enabling older adults to live longer, healthier, and more productive lives. Decreased vision can significantly influence one's ability to remain active and productive. Occupational therapists' expertise in understanding both the importance of participation in occupations throughout the life course and the changes in body functions, body structures, and performance skills associated with aging makes them skilled at supporting the occupational performance of older adults with low vision. Occupational therapy practitioners know that although nothing more may be able to be done to restore vision, much can be done to improve quality of life and participation in desired occupations.

The woman with macular degeneration who struggles during her morning routine may benefit from optical devices and strategies to facilitate reading the daily paper. The man who has given up attending his weekly bowling league may benefit from occupational therapy to explore other ways he can remain socially engaged. Occupational therapy practitioners must use the current evidence to guide their practice and engage in scholarship to further understand how best to enable participation for these and the millions of other older adults with low vision. ▲

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