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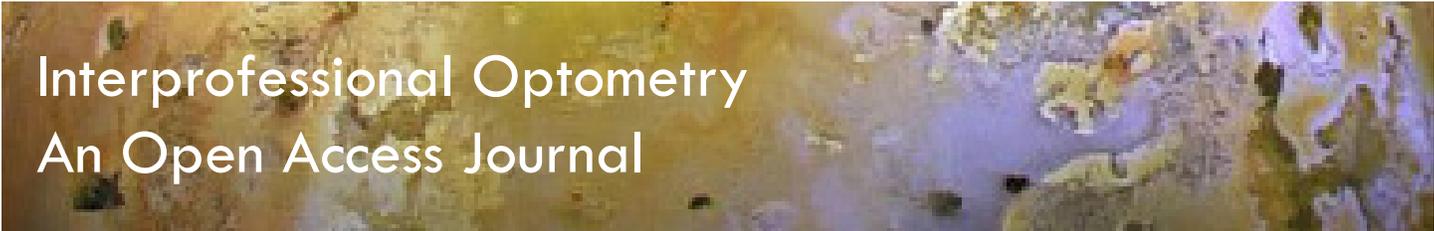
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Book Review: Compendium of Works on Visual Rehabilitation, Volume I

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Author: Kenneth J. Ciuffreda, OD

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Few researchers have had as fruitful a career as Ken Ciuffreda. Over the past 40 years, Dr. Ciuffreda has published over 250 papers, 6 books, and one teaching manual. During this time he has also maintained at least a half day a week clinical presence at SUNY State College of Optometry.

Neuro-rehabilitation is one of the areas of optometry that lends itself best to interprofessionalism. Patients with both acquired and traumatic brain injuries often have issues in all major aspects of their visual system. This includes refractive, binocular, and ocular health problems. Many specific examples are addressed in this collection.

Inside this monograph is a series of 15 reprints originally published from 1977 (when the author completed his PhD at UC Berkeley) up until 2015. Dr. Ciuffreda is the first author on seven of these papers. However, the focus of this book review will be on the most interprofessional chapters in this collection.

The first six papers are found in the overview section. The very first, entitled "Neuro-optometry: An Evolving Specialty Clinic" is from forty years ago at UCB, but is interesting for historical reasons. One ageless (if controversial) statement made by the authors is "Our philosophy is that there is no real difference between applied and basic research." To that end, this chapter explores early application of eye tracking, EMG, and

EOG to head trauma patients in a clinical setting. The rest of this monograph consists of much more recent publications. In some, Dr. Ciuffreda is one of several authors. For example, in a 2009 manuscript, entitled "Profile of Selected Aspects of Visually-Symptomatic Individuals with Acquired Brain Injury. A Retrospective Study," 160 patients with traumatic brain injury (TBI) were compared and contrasted with 60 additional patients with cerebral vascular accident (CVA), or stroke. The authors found higher rates of use of PT, OT, and Speech Therapy among the CVA patients. Only Cognitive Therapy rates were significantly higher in the TBI group. This is surprising because visual-vestibular symptoms were worse in the TBI group.

In another chapter from 2002 entitled "Vision Disturbances Following Traumatic Brain Injury," Kapoor and Ciuffreda list the commonalities in TBI patients. There are five: accommodative and vergence dysfunction, version and visual field deficits, and photosensitivity. These include the same traits identified by the Veterans' Administration Medical Centers, and is consistent with bilateral Oculomotor (CN III) damage. Damage to the CN III fascicle explains AI, CI, and pupil mydriasis, causing blur, diplopia, and photophobia.

More deserves to be said about visual field defects, which occur in nearly half of patients with acquired brain injury (ABI). CVA patients have a two-thirds

incidence, according to a 2008 paper by Suchoff, Kapoor, and Ciuffreda, among others.

While any text by the Optometric Extension Program Foundation will include extensive examples of vision therapy techniques, there is at least one chapter on ocular disease in the brain-injured population. In a 2006 publication, Rutner, Kapoor, and Ciuffreda et. al. found some predictable and surprising correlations. Among the predictable were corneal abrasion and traumatic cataract in TBI, as well as ptosis in the older CVA population. Less predictable were the lagophthalmos and superficial epithelial keratitis, lid lesions, vitreous and peripheral retinal degeneration in both groups. While these conditions may be of minimal interest outside of the eye care professions, they are certainly ones that ophthalmology and optometry co-manage.

Another much-needed chapter from 2008 is “Medications Prescribed to Brain Injury Patients: A Retrospective Analysis” by Han et. al. Dr. Ciuffreda is the fifth author of this six-author paper. It may be surprising for the reader to find that the single most prescribed class of medications used in TBI are the antidepressive and anti-anxiety drugs. In CVA patients, it’s anti-hypertensive and cardiac agents, used by over two-thirds. Some of these are used off-label. Nonetheless, diplopia and vergence dysfunction were the leading symptoms in TBI and CVA patients, respectively.

The remainder of the interprofessional portion of the manuscript covers visual motion hypersensitivity, binasal occlusion, and visually-evoked potentials, among other topics. All in all, it is a valuable contribution to the field from both a structural and functional point-of-view. Those that practice neuro-rehabilitative optometry may be interested to know that a second volume of Dr. Ciuffreda’s works is due out in the fall of 2017.

Reference

OptometryStudents.com. (2011) Dr. Ciuffreda Interview on Optometry/Binocular Vision. <https://www.youtube.com/watch?v=XaaFg3fzAoo>, accessed August 18, 2017.