

Prescribing Pediatric Spectacles: More Than Meets the Eye

More than a decade ago, Sean P. Donahue, MD, PhD, at Vanderbilt University in Nashville, Tennessee, published a study demonstrating that a significant number of children are prescribed glasses unnecessarily.¹

At the time, Dr. Donahue pointed to the extrapolated national costs of these findings to the tune of \$200 million in 2004 dollars. Yet, interestingly, the financial impact only tells half the story. The other half involves quality-of-life issues ... for the parents.

“A 2011 study out of the Mayo Clinic in Rochester, Minnesota, reported that spectacle wear in children reduced parental health-related quality-of-life”² said Jane C. Edmond, MD, at Dell Medical School at the University of Texas, Austin. “Results from this study, combined with the findings that spectacles may be overprescribed in children, has key implications for both pediatric ophthalmologists and general ophthalmologists who treat children,” she said.

When considered together, these 2 studies take on new importance given the recent trend toward reimbursing physicians based on quality of care rather than volume, since not only physical outcomes but quality of life/patient-reported outcomes may gain increasing relevance, she said. (See “Reimbursement and Patient Reported Outcomes” on next page.)

“When prescribing spectacles to children, we are good at asking parents about the quality of their child’s vision and compliance with the glasses, but very few practitioners think to ask parents about the impact that spectacle prescription has on the quality of their lives,” Dr. Edmond noted. “We should be asking all these questions.”

Studying Parental Quality of Life

Jonathan M. Holmes, MD, at the Mayo Clinic in Rochester, Minnesota, who coauthored the 2011 paper, first became interested in quality-of-life metrics when studying strabismus. As a member of the Pediatric Eye Disease Investigative Group (PEDIG), which was planning a study for children with intermittent exotropia, he realized that there were “no good instruments to measure the effects of this condition on the child and parents.”

A new survey. Through extensive interviews with children and parents, Dr. Holmes and his group developed the Intermittent Exotropia Questionnaire (IXTQ), a validated instrument for measuring health-related quality of life (HRQOL) in children with intermittent exotropia. Children as young as 5



EXAM. Dr. Donahue does a slit-lamp exam.

years can self-report, and parent proxy reporting can be used for children of all ages. The IXTQ also contained a parent self-report, addressing how their child’s condition affects the parents themselves.

Kids with refractive error only. “We then decided to study quality of life regarding the use of spectacles alone, taking intermittent exotropia out of the equation,” Dr. Holmes explained. “The patients (and parents) we reported in the article were just children who had normal vision with or without glasses.”

One of the most striking findings, Dr. Holmes said, is that simply wearing glasses did not appear to affect the quality of life in these children (granted, the questionnaire was originally designed for children with intermittent exotropia). The researchers found no differences in composite HRQOL scores for children who wore spectacles and those who did not.

BY LORI BAKER-SCHENA, MBA, EDD, CONTRIBUTING WRITER, INTERVIEWING SEAN P. DONAHUE, MD, PHD, JANE C. EDMOND, MD, JONATHAN M. HOLMES, MD, AND MICHAEL X. REPKA, MD, MBA.

QOL for moms and dads. In contrast, assessment of parental HRQOL using the IXTQ showed that parents of children who wore spectacles had worse HRQOL than those of children who did not wear spectacles. The lower scoring survey questions were related to worry about permanent damage to their child's eyes, long-term eyesight, potential surgery, self-consciousness, and teasing related to wearing glasses.

"We did not anticipate this level of worry among parents," Dr. Holmes noted. "For example, one of the striking differences between parents and children involved teasing. While children with glasses did not perceive that they were being teased, the parents of children with glasses worried that their children would be teased."

Pearls. Dr. Holmes said the clinical pearls from these findings are twofold. First, when prescribing glasses for children, eye care practitioners should acknowledge the potential parental concerns and be sensitive to those concerns in terms of explaining and counseling.

He said, "Our study gave us insight into why parents are upset when their children are prescribed glasses." If clinicians understand what is going on in the parents' minds, they will be better equipped to help dispel worry.

"Secondly, we certainly don't want to unnecessarily prescribe glasses to children who don't need them," Dr. Holmes said. "We need further research on how refractive error affects children and what levels of refractive error need to be corrected. We also need to look at how the correction of refractive error affects the development of eye conditions as the child gets older."

More Than a Decade of Clinical Observations

Dr. Donahue's original interest in quantifying the prevalence of visually normal children wearing glasses stemmed from anecdotal experiences with colleagues over the years. In his 2004 study, he found that nearly 20% of children with normal vision received a prescription for glasses following a visit to an eye doctor, despite not being at risk for amblyopia or another pathology.

"Since we published these findings, we have found that the anecdotal observations have not changed, although we do not have research data to support these anecdotal findings," Dr. Donahue said.

"However, it is important to note that if the child really needs glasses, he or she will most often wear them," Dr. Donahue added. "If the parents are having a hard time getting their child to wear glasses, which will definitely impact their quality of life, then they may want to consider whether the child, in fact, needs the spectacles."

When kids need glasses. Dr. Edmond said that there are situations where not wearing glasses may lead to amblyopia, such as bilateral high hyperopia or anisometropia, which can result in permanent vision loss if untreated at a young age. "In these cases, parents should be advised that the child can experience permanent vision loss" if he or she doesn't comply with the glasses prescription.

When they don't. However, she said, "For a vast majority of children, not wearing their glasses will have no lasting side effect to their visual pathways. The myopic middle or high-schooler may not see well and may have to squint to see the board in the classroom, which could lead to academic issues, but there is no lasting sequelae. And parents should know this."

1 D error? Consider no glasses. Dr. Donahue said his research also showed while spectacles were often prescribed for children having less than 1 D of refractive error, pediatric ophthalmologists were much less likely to prescribe spectacles in such situations.

"General ophthalmologists who see an occasional pediatric patient need to be alert to the fact that the accommodative facility of young children is quite different from [that of] older patients," Dr. Donahue said. "Where a child can focus through large amounts of far sightedness, most of the adult population would be horribly incapacitated by the same amount of refractive error."

Consequently, he advised, it would be worthwhile for general ophthalmologists seeing pediatric patients to be familiar with and implement the

Academy Preferred Practice Patterns (PPP)³ regarding the management of these children. (Download the *Pediatric Eye Evaluations PPP* at aao.org/ppp.)

Reimbursement and Patient Reported Outcomes

Dr. Edmond noted that her medical school is one of the few centers in the country focusing on value-based health care strategies.

"This is one of the reasons the quality-of-life issue for parents captured my attention," she said. "Increased value in health care means improved outcomes, particularly outcomes that matter to patients and, in this case, the parents. Reimbursements will be increasingly linked to value. We need to start paying attention to this aspect of health care delivery."

Michael X. Repka, MD, MBA, at the Wilmer Eye Institute in Baltimore and serving as Academy Medical Director for Governmental Affairs, said that while quality-of-life measurements are not currently impacting fee-for-service payments to physicians, they may be indirectly affecting other payments. For example, hospitals and outpatient facilities have long been judged on patient satisfaction survey results.

"My institution looks carefully at quality ratings," said Dr. Repka, "and these ratings will probably affect clinical bonuses if poor quality adversely impacts payer payments. At this point, parental quality-of-life survey data for eyeglasses hasn't affected reimbursements. But bonus payments for value may be coming."

Dr. Repka added that if this shift does take place, instruments must be developed to measure patient feedback accurately for specific conditions and provide the detail necessary for the findings to be useful.

Future Research

Dr. Holmes agreed that patient and family perspectives are now increasingly recognized as an important consideration, adding, "I think that our entire field needs better instruments, including more rigorously designed questionnaires that both practitioners and researchers can use in evaluating

the effects of our treatment.”

To that end, Dr. Holmes and his team at the Mayo Clinic have been focusing on creating quality-of-life questionnaires for pediatric ophthalmic conditions. In studying children with esotropia and their parents, for example, they identified a wide range of quality-of-life issues from their interviews.⁴ Among the most commonly mentioned parental concerns about treatment were inconvenience and, again, worry about glasses.

“While these initial findings are helpful, they are still disease-specific. We truly need additional studies on the impact of spectacle wear on the child and the family,” Dr. Holmes said.

“We also need more evidence of when refractive correction is needed and how it benefits children so we don’t overprescribe glasses,” he added. “These are key areas of research that deserve our attention.”

1 Donahue SP. *J AAPOS*. 2004;8(3):224-229.

2 Yamada T et al. *J AAPOS*. 2011;15(1):24-28.

3 American Academy of Ophthalmology Pediatric Ophthalmology Panel. *Preferred Practice Pattern. Pediatric Eye Evaluations*. San Francisco, Calif.: AAO; 2017. Available at aao.org/ppp.

4 Liebermann L et al. *J AAPOS*. 2016;20(4):295-300.

Dr. Donahue is Coleman Professor and vice chair for Clinical Affairs, Department of Ophthalmology and Clinical Sciences, Vanderbilt University Medical Center in Nashville, Tenn. *Related financial disclosures: None.*

Dr. Edmond is the inaugural director of the Mitchel and Shannon Wong Eye Institute and chair of the Department of Ophthalmology at Dell Medical School at the University of Texas, Austin. *Related financial disclosures: None.*

Dr. Holmes is the Joseph E. and Rose Marie Green Professor of Visual Sciences and professor of ophthalmology at the Mayo Clinic in Rochester, Minn. *Related financial disclosures: National Institutes of Health: S.*

Dr. Repka is the vice chair for Clinical Practice and professor of ophthalmology at the Wilmer Eye Institute in Baltimore. He is also Academy Medical Director for Governmental Affairs. *Related financial disclosures: American Academy of Ophthalmology: C; National Eye Institute: S.* See the disclosure key, page 10. For full disclosures, see this article at aao.org/eyenet.



The Sarasota Retina Institute
Presents....

The 33rd Annual Mid-Winter Sarasota Vitreo-Retinal Update Course February 14th, 15th & 16th, 2019 at The Ritz-Carlton on Sarasota Bay, Sarasota, Florida

This course is targeted to practicing ophthalmologists interested with the latest developments in the diagnosis and management of vitreo-retinal and neuro-ophthalmologic diseases and ocular-oncology.

COURSE OBJECTIVES:

- Understand coming advancements in optical coherence tomography (OCT) and how they will apply to the clinical practice and treatment of various retinal and optic nerve disorders.
- Current research into macular degeneration, diabetic retinopathy and retinal vein occlusions.
- Evaluation and treatment of retinal tumors.
- New advancements in retinal surgery.
- Improve understanding of diseases that affect the optic nerve and visual pathway.
- New staging of macular holes.
- Orbital diseases.
- Ocular trauma from the retinal standpoint.
- What is the current status of floater treatments?

Ocular Imaging Workshop

COURSE FACULTY:

Jody G. Abrams, M.D. Sarasota, FL
 Carl W. Baker, M.D. Paducah, KY
 Melvin C. Chen, M.D. Sarasota, FL
 Jay S. Duker, M.D. Boston, MA
 J. William Harbour, M.D. Miami, FL
 Marc H. Levy, M.D. Sarasota, FL
 Thomas R. Mizen, M.D. Chicago, IL
 Kirk H. Packo, M.D. Chicago, IL
 Gaurav K. Shah, M.D. St. Louis, MO
 Thomas C. Spoor, M.D. Sarasota, FL/Warren, MI

COURSE DIRECTOR:

Jody G. Abrams, M.D. Sarasota, FL

REGISTRATION:

- Limited Enrollment
- \$600 Physician’s Fee
- \$300.00 Residents

EARLY ENROLLMENT DISCOUNT..

- \$550 Physician’s Fee
 - \$275.00 Residents
- (received by December 14, 2018)

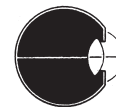
BAY FRONT ACTIVITIES:

- The Thomas C. Spoor Golf Tournament
- Deep Sea Fishing
- Near Beautiful Gulf Beaches
- Sailing and Tennis

Joint Providership by



FMA ACCREDITATION PROGRAM
How Physicians Earn Quality CME



SARASOTA RETINA INSTITUTE SRI

FOR FURTHER INFORMATION CONTACT:

Kathy Johnson (941) 921-5335 or e-mail: srikathy@hotmail.com

This activity has been approved for AMA PRA Category 1 Credit™