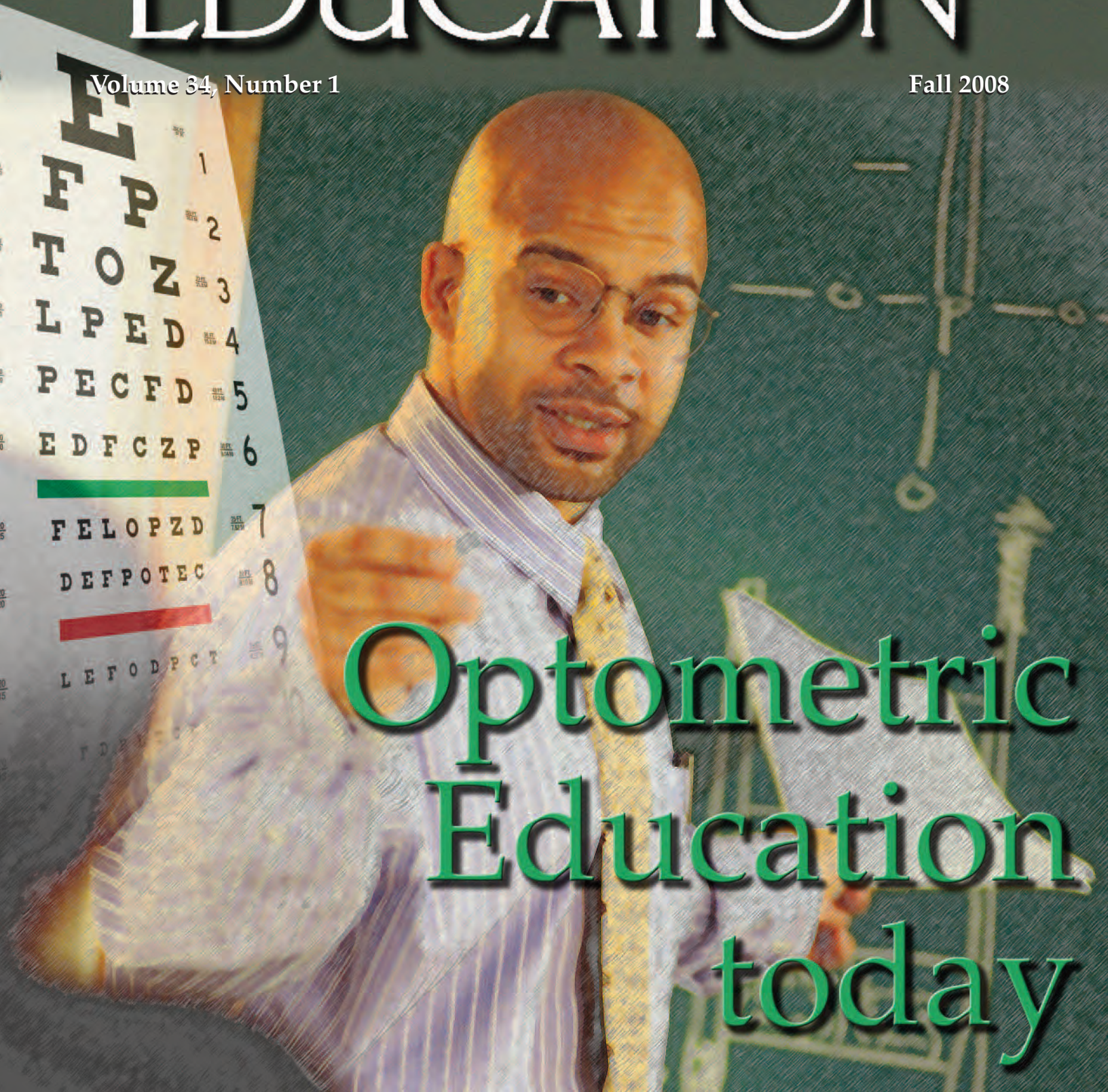


The Journal of the Association of Schools and Colleges of Optometry

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Education
today

Association of Schools and Colleges of Optometry

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CIBA VISION
Shared Passion for Healthy Vision and Better Life

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Investigation of Student Self-Perceived Preparedness in Interacting With Patients Experiencing Psychosocial Challenges

Sanford M. Gross, OD, MA, FAAO
Sandra S. Block, OD, MEd, FAAO, FCOVD
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**As of November 1, 2008*

**TLCPartners.com Announces
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Resource**



TLC Laser Eye Centers has developed TLCPartners.com to help build and maintain optometric practices, provide practice management education to optometry students and tools to help prepare optometry school graduates as they enter the workforce. TLCPartners.com provides valuable benchmark data, self-assessment tests, and other supportive tools in the areas of financial management, staff management, staff recruitment & training, business planning, practice development and marketing tools. TLCPartners.com also offers turnkey solutions for some of the biggest business challenges and a resource library containing articles and tools to assist in daily practice operations.

Registration with TLCPartners.com is free and includes an introductory offer for a free one year subscription to Eyemaginations' 3D-Eye Home. 3D-Eye Home is an email tool that allows you to provide patients with high-quality education before and after their office visits, reinforces your practice image, creates a source of referrals by sharing your practice customized emails with family/friends, and differentiates you from the competition.

**Eyemaginations to Release
Comprehensive Cataract
Education Software**

Eyemaginations, Inc. announced its release of a comprehensive cataract-premium IOL patient education program, developed in collaboration with David F. Chang, MD. The software is designed to help eye care professionals provide

patients with a balanced and comprehensive overview of IOL options available with cataract surgery. "The availability of new refractive IOLs and the cost sharing premium channel have created exciting opportunities for appropriate patients and their surgeons," said Jeffrey Peres, president and CEO. Eyemaginations saw the need for an educational program that could teach the basics without being promotional in style. Pictures and illustrations make confusing concepts easier to understand and Eyemaginations has been a leader in quality 3D-animated graphics and customizable patient educational software.

The new cataract module will be available to all existing customers of Eyemaginations that use the 3D-Eye Office software program. This new module will be featured as part of the core content that physicians receive in connection with their annual license renewal process. The software was unveiled at the recent Academy of Ophthalmology meeting in Atlanta to rave reviews.

**NEI Releases Complete Data
From Age-Related Eye Disease
Study**

The National Eye Institute (NEI) has released more than 10 years of data collected during the Age-Related Eye Disease Study (AREDS), which looked at the progression of age-related macular degeneration and age-related cataract in 4,757 adults aged 55 to 80. Researchers around the world can apply for access to this complete set of medical history records and clinical trial results as well as select genetic information to gain a better understanding of two complicated vision conditions that affect aging adults.

The AREDS data are accessible through the online database of Genotypes and Phenotypes, known as dbGaP, which archives and distributes data from studies that

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Industry News

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explore the relationships between genetic variations (genotypes) and observable traits (phenotypes). AREDS began in 1992 as a long-term, multicenter, prospective study designed to evaluate the progression of age-related macular degeneration and age-related cataract. Participants were also enrolled in a clinical trial of high-dose vitamin and mineral supplements. They were followed for a median of 6.5 years during the trial and an additional 5 years after the trial's conclusion. In addition, DNA was isolated from blood samples taken from more than 3,700 AREDS participants beginning in 1998.

The public, open-access AREDS data can be viewed on the dbGaP website at http://www.ncbi.nlm.nih.gov/projects/gap/cgi-bin/study.cgi?study_id=phs000001.v2.p1. Researchers can find a link to the application for controlled access to individual-level data on the same site.

Vistakon Launches ACUMINDER Facebook Application



Vistakon has joined the Facebook generation by recently announcing the launch of its ACUMINDER Facebook application. This newest iteration of the company's free online ACUMINDER contact lens compliance service expands its functionality into a multipurpose lifestyle tool available to Facebook's 80 million active users. ACUMINDER was introduced last year as a complimen-

tary online service designed to help improve contact lens compliance and eye health for the nation's 38 million contact lens wearers. Now available as a Facebook application, ACUMINDER users can receive reminder messages via e-mail and/or alerts in their Facebook newsfeed. In addition to helping consumers with contact lens compliance to help avoid potential eye health complications, ACUMINDER Facebook reminders can pertain to just about anything, including taking daily medications, doctors' visits, work deadlines, important social events and more.



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The Partnership Foundation for Optometric Education is planting, cultivating, and nurturing. Together, this "true partnership" is making a long-term investment in tomorrow.



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EDITORIAL

Contemporary and Changing: Optometric Education in Context

Elizabeth Hoppe, OD, MPH, DrPH

This issue of the journal represents a contemporary view of factors affecting optometric education today. As educators, we often focus on our ability to impact our current environments and our influence on the future. In the feature "My Best Day in Optometric Education," Dr. Tiffenie Harris shares this perspective and reminds us that educators have the opportunity to touch a life forever.

But what about the opposite side of the coin? How do societal trends and the events happening in the world today affect optometric education? We do not function in isolation, and as much as we strive to make an impact, we are also impacted by external forces.

One important force is a philosophy of "relationship-centered care" that has been evolving, in part due to a growing dissatisfaction with the health care system from the perspectives of patients, health care providers, and even policy makers.¹ Advocates of this change in philosophy state that, "Practitioners' relationships with their patients, their patients' communities, and other health care practitioners are central to health care and are the vehicle for putting into action a paradigm of health that integrates caring, healing, and community."¹

Similarly, the Committee on Health Professions has been a driving force impacting the expected outcomes of health professions education for all disciplines. They have identified several core competencies needed for health care professionals, including the ability to provide "patient-centered care." They define patient-centered care as the graduates' ability to identify, respect, and care about patients' differences, values, preferences, and expressed needs; relieve pain and suffering; coordinate continuous care; listen to, clearly inform, communicate with, and educate patients; share decision making and management; and continuously advocate disease prevention, wellness, and promotion of healthy lifestyles including a focus on population health.² It is in the context of these important external forces that we must consider our approaches to educating the next generation of doctors of optometry.

The articles in this issue explore the dynamic exchange between societal and cultural expectations and educational paradigms. Dr. Spafford and her coauthors discuss an important way in which the expansion of optometric

scope of practice has increased the need to educate students about a particular form of communication: the delivery of bad news. Dr. Gross and his colleagues describe how changes in health care delivery systems, as well as changes in our culture, require advanced communication skills and greater levels of cultural competence.

We have seen increased demands for higher levels of clinical decision making and a greater societal interest in "How Doctors Think."³ Drs. Denial and Deng translate these societal changes into the optometric educational arena by evaluating methods for predicting students' ability to think critically.

And, last, something that has been on all of our minds: the economy. As this issue goes to press, we are watching jobless rates rise and stocks plummet. Economic volatility and uncertainty are causing concerned consumers and government interventions. Many experts are making dire predictions about the prospects for recovery.⁴ With the far-reaching consequences of economic uncertainty, how will optometric education be affected? Practice management educators and financial aid experts from around the country share their thoughts about how the recent economic downturn may impact optometric education and graduates' opportunities.

Our country is going through many changes on many levels. These changes create a dynamic situation which we, as educators, have the opportunity to shape. It is this state of flux, and this give and take, that can make our careers as educators so rewarding.

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How will the recent changes in our economy affect optometry education and what will be the impact on opportunities for our graduates?

The economy always plays a role in education. Traditionally, as the economy gets worse, more people enter health-related fields rather than business. That said, admission to optometry school may become more competitive. I foresee the student mix changing as well, older students and second-career students may become more common. Those who cannot count on family savings to pay for education may decide to work a few years before returning to graduate school.

The budgets of optometric institutions are also impacted by the economy. Invested assets may not grow as quickly as in previous years. Expenses such as salaries, staffing needs, and renovations to physical infrastructure will be carefully reviewed to keep the institutions fiscally responsible. These economic challenges may also bring opportunities to become more effective and efficient in the delivery of quality education.

In talking with our students, many don't feel connected to our government or see the current financial crisis impacting them while they are on campus, but it will hit closer to home than they think. In the past year, students have already seen higher loan fees and losses in grant funding. Due to the financial crisis and other factors, a significant number of lenders have dropped out of the student loan market and more students have to rely on federal money flowing directly from the federal government. Federal loans will still remain available, but private loans have been dwindling.

Our graduates will find the current financial crisis affecting salary and hiring prospects. In addition, current optometrists close to retirement may have to postpone retirement depending on the state of their retirement accounts.

Even during this time of panic and uncertainty, the significant changes in the U.S. economy provide a great opportunity for students to learn and make them think and plan ahead. An economist would describe the economy as in a contraction period of a business cycle (though this is an extreme one), and there is no reason to believe the flow of credit would end. Once we hit bottom, the U.S. economy will go back to an expansion period. It is critical that the students maintain excellent credit ratings so once the upturn begins and loans become more available, they will be in a good position to get the money they need to practice the profession of optometry.

Janice Jurkus, OD, MBA
Professor
Illinois College of Optometry
Bryant Anderson
Director of Financial Aid
Illinois College of Optometry

The recent economic crisis will impact both optometric educational institutions as well as graduates looking toward traditional employment opportunities. In the short term, I expect a reduction in the availability of corporate grant and research funding. Reductions in alumni gifts and capital campaign funding may be affected due to the decreasing value of practitioner's retirement portfolios and their willingness to contribute.

Depending on the depth and length of an economic recession, many optometric practices will experience an overall decrease in revenue from non-covered products and services. Tightening in the credit markets may impact a practice's ability to expand as well as employ additional optometrists. Recent and future graduates may find not only increased competition for fewer employment opportunities but potentially lower starting salaries and benefit packages.

David Mills, OD, MBA
New England College of Optometry

Think Tank . . .

The current economic downturn has tightened credit. People with good credit will still be able to get loans, but those with marginal credit will have difficulty. As a result, the lower middle class will find it difficult to fund the cost of optometric education. Recent graduates will find it more difficult to obtain loans for practice purchases from commercial lenders.

Also, as government budgets are tightened due to the significant debt load taken on by the federal government, fewer dollars will be available. This will negatively impact economically disadvantaged people who want to participate in optometric education as well as overall support for optometric education.

Individual budgets are tightening, resulting in patients making reduced or delayed purchase decisions. This impacts both practices and optometric vendors. It also has the potential of causing donations to schools and colleges from corporations and individuals to be negatively impacted. Reduced demand from patients will cause practices to delay bringing on additional doctors.

In addition, the leading edge of baby boomers just turned 60 in 2006. Under normal conditions, we would expect the majority of this group to leave the practice of optometry over the next decade. The time will be lengthened due to the negative impact of the current economic downturn on retirement investments. This group will need to work longer in an effort to recover from the economic damage done to investments. Practice opportunities that normally occur as these doctors leave practice will be delayed.

A positive view requires a longer perspective. The stock market mantra is buy low, sell high. The current situation created fear that drove many to sell low in an effort to get out of the market. This created a significant economic opportunity. Warren Buffett is an example of someone taking advantage of this opportunity. He is currently investing large amounts into stock purchases. For people with the longer view, when the stock market turns around, those who bought low will be significantly rewarded for their vision. This raises the possibility that both corporate and individual contributions to optometric education could significantly increase as the economy improves.

The next year presents difficult challenges, but the situation will improve as recovery occurs.

Mark R. Wright, OD, FCOVD
Faculty Coordinator, Bennett/VSP Business Management Program
College of Optometry at TOSU

The recent changes in our economy have already affected many optometry students. The double punch of reduced federal lender subsidies and the withdrawal of asset-backed securities due to the subprime-mortgage crisis have wreaked havoc for the major federal loan program used by optometry students. The Stafford Loan program has become more expensive, with fees no longer covered by lenders and guarantors and most front- and back-end loan repayment benefits disappearing. This means optometry students receive less of the loan funds they borrow to pay optometric expenses and will pay more interest in repayment. This year, 137 Federal Family Education Loan (FFEL) Stafford lenders withdrew from student lending due to the credit crisis. Students had to scramble to find a lender that would still lend to them, resulting in most optometry students now having multiple lenders and possibly more than one servicer (split servicing) for this one loan program. This will add to repayment complications and could cause increased defaults.

We might see more students seeking financial aid with the nation's economic woes of layoffs, home foreclosures, and rising living and tuition costs. What is most important is that the student loan debt levels our new ODs leave with remain manageable with the income level of their chosen profession—optometry.

Tami Sato, Director of Financial Aid
Southern California College of Optometry

Obviously, the financial crisis beginning in September has been very serious, and the effects could be wide-reaching. That said, it is quite possible that optometric education could be affected only mildly. The following areas could impact optometry schools:

1. Applicant pool - If credit and the availability of money is tight, some might be discouraged from applying. I think it is likely that federal guaranteed sources will continue, as the default history on these loans is very low, and the public relations implications from stopping this would make it unlikely that any administration would significantly reduce such programs. Private lenders might be more likely to require a cosigner in the next few years. As far as being scared off by tighter money, that would assume most students have a strong appreciation for what their debt load really means, and this is probably not the case. Not until they actually have to make payments does it have any real impact. Therefore, applicant level should be only mildly affected, if at all.

2. Federal funding - It is hard to think that with the amount of money being spent to alleviate the banking and mortgage crisis, there will be funds left for anything else. In reality, unless there is a renewed commitment to a truly balanced budget, the government may well operate in a near "business as usual" manner.

3. Scholarship funds - Any scholarships based on investments might be hurt in the next few years due to the value of those investments dropping. This should be a relatively minor impact overall.

4. State funds - There are significant economic pressures for many state budgets, and those schools who are state affiliated might experience some funding decreases. In fact, many of these schools have already seen diminishing support, and their lessened dependence on state assistance should make them more able to survive any further cuts.

In terms of our graduates, the tightening of credit could affect practice transfers if commercial funding is sought. Many of these sales are owner financed, however, and would not be affected. It is possible that if interest rates are higher, and graduates carry high student loans, they might be less inclined to want to seek ownership opportunities. Evidence to date would suggest this will not be true. The amount of debt, or even the interest rate, has less impact than the level that they are either more or less debt averse.

Those who are highly debt averse are less likely to enter into purchase agreements, regardless of their level of debt or the cost of money, while those who have an entrepreneurial bent are not deterred by these factors, and this will not change as long as the economy does not enter a severe depression.

Some doctors planning to retire in the next year or two may rethink their plans. If their investment portfolio had not been switched over to relatively safe, low-risk vehicles in anticipation of retirement, their assets may have decreased enough that they may need to work a few years longer. This could affect some practice transfers, meaning less opportunities could be available for new graduates to purchase practices in the short term. The best practice transition is often to bring in an associate to whom the practice is transferred at a later date, and these opportunities should still be present.

Finally, in economic hard times, there may not be a large impact on the number of individuals seeking health and eye care, but their willingness to make optional or extra purchases may be affected. This might impact refractive surgery numbers (which have already seen a decline), possibly lessening the professional staffing needs of some centers or practices. Contact lens fittings might be flat or decline in deeply slowed or recessionary economies, as might second spectacle pair sales. The tightening of availability of money for practice expansions, remodeling, or major equipment purchases could delay such plans. These facts might in turn affect the availability of associate positions, but it is likely to be a very small effect. Those practices and doctors with good credit and long-term relationships with their banks will probably find their ability to borrow will not be significantly curtailed.

In summary, the slowed economy will no doubt be felt in a number of ways, but overall may not really have a very significant impact on either schools or the opportunities for their graduates.

Neil A. Pence, OD, FAAO
Director, Contact Lens Research Clinic
Indiana University School of Optometry

Think Tank . . .

My Best Day in Optometric Education: Teaching Will Touch a Life Forever

Tiffenie Ann Harris, OD



“To teach is to touch lives forever” – Anonymous. This famous quote has echoed in my mind and has been posted in my office since the day I began my career in optometric education. I have been inspired by these words, along with wonderful teachers in my family as well as those throughout my education. As an optometry student, there were several professors who made lasting impressions. However, two stood out the most. One professor set the example of leadership, dedication, and enthusiasm for our profession, touching my life by serving as a role model in optometric education. Although I never told her this as a student, I had the pleasure of communicating my sentiments with her at a recent meeting. The other professor gave excellent mentoring and motivation while providing direction in career path choices and goals.

During my optometric education at the Indiana University School of

Optometry, I was an associate instructor, or graduate assistant, as it is called at other institutions. I taught in the optometry school’s gross anatomy, ocular anatomy, and neuroanatomy labs as well as the university’s medical science program, teaching in the gross anatomy lab designed for undergraduate students. What began as a means to supplement the costs of my education over the last three years of optometry school developed into a passion. I was certainly “bitten” by the teaching bug. Guided by the influence of my professors, pursuing a career in academia on graduation would be an opportunity to not only help patients but to help develop the next generation of optometrists. Unfortunately, life sent me a curve ball; I had to return to my hometown to assist my ill parents.

I practiced primary-care optometry for 10 years in the Detroit metropolitan area. There were multiple times where I know I touched lives and fulfilled my initial goal to make a difference in the quality of life for my patients. Yet, there were many times when a patient, such as a school teacher, would come into the office and resurrect my interest in the lost career goal. I still longed to pursue academia. When the opportunity came for me to finally follow that aspiration I went for it, full steam ahead!

I began my academic career path in 2004 by returning to my alma mater. My assignments have been chief of primary care and consulting in the clinics with third-year students. This past year, I added the didactic responsibility of teaching clinical sciences in the theory and methods of ocular health examination courses. The clinical training of the students frequently provides an opportunity to share the lessons

learned in practice with patient-based scenarios. It also allows me the opportunity to share with them why I enjoy teaching. Certainly, the students have recognized my enthusiasm for the profession and dedication to ascertaining that they are learning. I was voted “Consultant of the Year” the first three years of teaching. Optometric education has provided a synergistic fulfillment for me on a daily basis, combining education with patient care.

It would be easy to say that the best day in academia were the days I received awards. However, I believe the best day developed from the combination of patient care and education. A patient presented to the primary-care clinic with the complaint of poor vision for “years.” The third-year student, one of the brightest, was perplexed as to the cause of the reduced acuities, despite her best refraction. During the case conference at the end of the clinic day, we discussed the differential diagnoses from the obvious to the rare—the horse versus the zebra. My motto has always been, “It’s not so rare when it’s in my chair.” Thus, the dialogue introduced the topic of nutritional/toxic optic neuropathy as the zebra for the case. The student could not recall the pertinent information of this disorder, nor could her peers in the group of four. I charged the group with homework by researching the topic and reporting back on the signs, symptoms, treatment, and management of the condition.

Fast forwarding a year and a half, I received an email entitled “just for you.” It was from the third-year student who was now a new doctor in a Veteran’s Administration (VA) residency program. She described the case of a patient seen by several local doctors, who was then referred to the VA medical center for assistance

in the diagnosis. He presented with reduced acuities and problems seeing the colors of stop signs. She recalled her old instructor's discussion, resulting in the homework assignment and diagnosed the patient with a centro-secal scotoma due to nutritional/toxic optic neuropathy. The new doctor also recalled the physical assessment aspect of the condition by adding in the fact that he smelled like alcohol. Of course, she must have impressed her preceptor! What made this email my best day in optometric education was the last statement, which read, "Isn't this why you came back to teaching." "Absolutely!" was my thought. Not only did I touch the life of the new doctor, but through her I also touched the life of the patient. What a fantastic feeling; this is why I firmly believe that in our profession, as optometrists and as optometric educators, we touch lives tremendously on a daily basis.

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Delivering Bad News: Applying the SPIKES Protocol to the Practice of Optometry

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Abstract

Purpose: At a Canadian optometry teaching clinic, the authors studied examiner perceptions of delivering bad news to patients. **Methods:** Seven senior optometry students and 6 optometrist instructors were interviewed. The authors identified stated attributes of bad news and strategies for delivering bad news relative to a published medical protocol for delivering bad news—the SPIKES¹ (Setup, Perception, Invitation, Knowledge, Emotions, and Strategies) protocol. **Results:** Participants agreed with aspects of the SPIKES protocol, although they disagreed with “rehearsing for the delivery” and “initiating discussions about information disclosure preferences.” Instructors noted that students struggled with overloading patients with information and adopting delivery strategies that were too rigid, yet the instructors provided limited feedback to students about bad news delivery. Students adjusted their delivery strategies by observing patient reactions and knowing instructor preferences. **Implications:** These preliminary findings support: 1) more explicit clinical instruction and 2) an optometry-tuned delivery protocol or a discussion of SPIKES-protocol limitations for optometric practice.

Key Words: Delivering bad news, optometry, medicine

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Study Excerpts

The following excerpts—from an optometry student (S) and an optometrist instructor (I) in an optometry teaching clinic—provide comments on some of the challenges these individuals faced in delivering bad news to patients:^a

S1: But crying [patients are the hardest for me], because it's ... especially with the whole professionalism of optometry. You can't—not just optometry—I mean professions—like you can't hug [patients] like if [they're] crying. It's not like, you can just...reach out in a certain way. So it's just hard to be sympathetic and professional at the same time.

I6: You can't look nervous, you know, if you're worried...you have to be able to—not necessarily be neutral but to...appear confident because when the patient needs a hand even when you don't feel it you have to have that—that sort of doctor-patient relationship. That is important.

The optometry student and faculty optometrist voices in this excerpt point to a salient feature of communicating bad news to patients. Health care providers strive to balance information, empathy, and support they give to their patients while maintaining their sense of a professional relationship. This balancing act creates a tension for health care providers who want to “be there” for their patients but not be “too there.”

As the profession of optometry expands its scope of practice and deepens its integration within health care teams, it faces an increasing responsibility for the delivery of bad news to patients. The literature on delivering bad news to patients—a discourse that has proliferated over the past 15 years—is almost solely about and within medicine, with the greatest attention directed to family medicine, oncology, and palliative care. These studies have examined patient and physician experiences with bad news delivery,²⁻⁵ strategies for delivering bad news,^{1,2,4-12} and educational practices in the delivery of bad news.¹³⁻¹⁷ Although a more limited consideration of bad news delivery does occur in the nursing literature, other health care professions do not appear to dedicate much, if any, time and space in their corresponding professional journals to this critical communicative process. We have considered whether this silence suggests delivering bad news has been

^aOur inclusion of participant voices at the beginning of this article reflects a methodological and ethical decision that signals our respect for our participants and the value that we place on their insights.

strictly the purview of medicine or whether other professions have assumed the medical model of delivering bad news fits all professions. In addressing these questions, we have reflected on the role of optometrists. They diagnose conditions and diseases of the eye and visual system that signal serious systemic diseases and cause or threaten to cause significant visual impairment and blindness.^b The impact of vision loss on quality of life includes compromised social interactions, mobility, safety, independence, daily activities, and/or emotional health.¹⁸ Despite the significant impact of visual impairment, we found only three articles on delivering bad news to patients with vision loss.¹⁹⁻²²

Despite the increasing need for optometrists to deliver bad news, there are signals from the profession that this role is not yet fully recognized. For example, the College of Optometrists in the United Kingdom stated,

“...the worst news that most optometrists have to convey in normal practice is that referral for further investigation to a hospital or eye clinic is necessary.... In referral situations *others* should have dealt with breaking news about the most upsetting aspects of a diagnosis” (p. 1, emphasis added).²³

This profession-sanctioned advice suggests that optometrists play a peripheral role in the delivery of bad news. We have come to question this position and we suspect that optometry needs to critically evaluate the research and educational literature on delivering bad news to patients, examine its place in the health care team, and develop strategies that fit its unique and sometimes complex role as a participant in the co-management of eye disease. Our belief led us to undertake a preliminary study of the perceptions and strategies of delivering bad news in a Canadian optometry teaching clinic.

In this paper, we briefly review some of the literature on delivering

bad news. After discussing the results of our study, we share some of our preliminary insights about the need for optometry to determine its own protocol for the delivery of bad news to patients and incorporate this protocol in the training of optometry students, residents, and optometrists.

Delivering Bad News

Robert Buckman, an oncologist, who has written extensively on communicating difficult messages to patients and their families, has characterized bad news as “any information which adversely and seriously affects an individual’s view of his or her future” (p. 304).¹ What is key to this patient-centered perspective is that bad news “is always...in the eye of the beholder” (p. 304).¹ The understanding by health care professionals of the importance of disclosing bad news to patients has come about relatively recently, as landmark cases in the last 30 years have invoked significant health care reforms affecting law, education, research, and quality assurance delivery.²⁴ These paradigm shifts are supported by studies that demonstrate how the effective delivery of bad news improves patients’ comprehension, satisfaction, hope, adjustment, and outcome.^{1,3,4,25}

In contrast to the increasing recognition that patients are significantly affected by how bad news is delivered, surveys of physicians continue to reveal that the majority—between 59% and 90%—have not received formal training in this pivotal discursive act.^{1,15,16} Medical schools (and other health professional schools) are responding to this recognized deficit by incorporating training specifically addressing the delivery of bad news.¹³ In the last 10 years, several training protocols for delivering bad news have been introduced into the literature.^{1,4,26} For example, a group of North American oncologists developed the six-step SPIKES protocol¹, named after the six constructs it follows: Set-up, Perception, Invitation, Knowledge, Emotions, and Strategies. In the SPIKES protocol,

a variety of options are presented that encourage health care providers to (see Table 1 for the protocol’s key features):

- 1) *Set up* the interview,
- 2) Assess the patient’s *perception*,
- 3) Obtain the patient’s *invitation*,
- 4) Provide *knowledge* to the patient,
- 5) Address the patient’s *emotions*, and
- 6) Develop *strategies* and summarize.

In the Canadian 4-year optometry program, where we have conducted other communication studies,²⁷⁻³⁰ we noted that the medical-based SPIKES protocol had been incorporated in two classroom-based didactic courses—an ethics and communication course in the second year and a gerontology and low vision course in the third year. This led us to ask optometry students and their optometrist instructors about their approach to delivering bad news in an optometric setting and what problems, if any, they encountered in using a medical-based protocol.

In this article, we report on the responses from a subset of senior optometry students and their clinical instructors regarding what constituted bad news and what strategies they believed were most effective when delivering bad news. We specifically asked ourselves the following two questions:

- What constitutes bad news in an optometry teaching clinic?
- What strategies do optometry students and faculty report using when delivering bad news, and are these strategies consistent with those advocated in medicine?

Drawing from their experiences, we reflect on the suitability of medicine-made protocols for optometrists who are increasingly delivering the bad news.

Methods

After obtaining institutional ethics approval, we studied^c a group of fourth-year optometry students and faculty optometrists at a Canadian, university-based, teaching optometry clinic in Fall 2005.

^bLow vision is a visual impairment that is not correctable by conventional spectacles, contact lenses, or refractive surgery. The overall prevalence of non-correctable visual impairment in North America lies between 1% and 2%, with rates that vary notably across age and ethno-racial cohorts—e.g., approximately 80% of North Americans with visual impairment are over 65 years of age, and the aging population is expected to produce at least a two-fold increase in the overall prevalence of low vision by 2025.³⁹⁻⁴¹ The most common causes of blindness and visual impairment in North America are age-related macular degeneration, glaucoma, cataract, and diabetic retinopathy among adults and cortical visual impairment, retinopathy of prematurity, and optic nerve hypoplasia among children.^{40,42,43}

^cThis article forms part of the work in Stefan Creutz’s required diploma thesis for the degree of Diplom-Ingenieur (FH) Augenoptik at the University of Applied Sciences, Aalen, Germany.

Participants

Study recruitment in the Fall 2005 involved an information letter and a follow-up e-mail being sent to fourth-year optometry students who were assigned to onsite clinics ($n=32$) and faculty optometrists ($n=24$). Advertisements of the study were also posted in the school. These recruitment efforts led to a convenience sample of 13 participants (23% participation): 6 optometrists and 7 optometry students. The number of participants was typical of other studies²⁷⁻³⁰ of health care students using qualitative research methods. The students were in the middle of their three 15-week terms that composed their final year of studies. The optometrists had been practicing optometry for a minimum of 20 years each and 3 had experience in private practice.

Interview Data Collection

We individually interviewed 7 optometry students (3 women and 4 men) and 6 faculty optometrists (3

women and 3 men). The 30- to 45-minute interview script reflected trends and issues we had gleaned from our review of the literature on delivering bad news. Participants answered open-ended questions about their perceptions and experiences of delivering bad news to patients, including their experiences of learning this discursive strategy. Interviews were audiorecorded, transcribed, and rendered anonymous.

Data Analysis

We included all 13 interviews in our analysis. Following a standard, qualitative-research, analytical technique called the grounded theory method,³¹ we individually read the transcribed interview data (total of approximately 8 hours of interview data) to identify emergent strategies of delivering bad news and learning to deliver bad news. Consistent with this analytical method, we devised a coding structure by clustering common examples for each strategy into themes and sub-themes. The coding structure evolved

from examining, applying, revising, and confirming each strategy across the data set. One of us (S.C.) reported difficulties or emerging patterns arising from this analysis to the research team for further analysis and revision. We identified four main themes relevant to delivering bad news in an optometry teaching clinic: 1) defining bad news, 2) relevance of the SPIKES protocol, 3) learning strategies, and 4) determinants of learning. This article focuses on the first two themes.

Results and Discussion

Defining Bad News

To address our first research question (What constitutes bad news in an optometry teaching clinic?), we asked the optometry students and the faculty optometrists to characterize bad news and share some of their experiences of delivering bad news to patients. The students and their instructors categorized bad news similarly and acknowledged the importance of patient perspective in defining it.

Table 1
Key Features of Six-Step SPIKES Protocol

SPIKES Steps	Protocol Key Features
Step 1 Set up interview	<ul style="list-style-type: none">• Arrange for privacy• Involve significant others• Sit down; remove barriers between self & patients (e.g., desk)• Establish a connection with patients• Mentally rehearse delivery• Manage time constraints and interruptions
Step 2 Assess patient perception	<ul style="list-style-type: none">• Employ open-ended questions• Determine how patients perceive the situation/problem
Step 3 Obtain patient invitation	<ul style="list-style-type: none">• Discuss information disclosure• Offer to address questions now and in the future
Step 4 Provide knowledge	<ul style="list-style-type: none">• Forewarn patients of impending bad news• Adjust delivery for patient comprehension• Give information in small chunks• Instill hope
Step 5 Address patient emotions	<ul style="list-style-type: none">• Observe and identify patient emotions• Identify the reason(s) for the emotions• Ask exploratory questions about the emotions• Explicitly validate the emotion to patients
Step 6 Develop strategies & summarize	<ul style="list-style-type: none">• Summarize• Ask patients if they are ready to discuss a management plan• Negotiate a strategy for treatment or follow-up

The optometry students reported they had gained limited experience in delivering bad news to patients midway through their final year of the optometry program.^d The optometrist instructors, who all had graduated more than 20 years ago, characterized their experience with delivering bad news as extensive. Both the optometry students and the optometrists divided bad news in an optometric setting into three general categories: 1) vision loss due to disease (e.g., diabetic retinopathy, age-related macular degeneration, and cataract), 2) lifestyle constraints due to inadequate vision (e.g., failure to meet a driver's license vision requirements), or 3) first-time spectacle correction. They clearly ranked the need for corrective lenses lowest on their continuum of bad news; however, even in their limited experience, the students all recognized that the judges of what constituted bad news were patients and their families. As Student 3 (S3) stated,

But I mean it's all a perception of what bad news is—right? Bad news to me might not be the same as bad news to the patient. Bad news for the patient might be...“You need glasses.” That might be terrible news for the patient—right? Whereas for us—for me—it would be, you know, that's OK—it's not a hard thing.

This student went on to talk about the impact of bad news on family such as parents who sometimes “felt pretty guilty...about the fact that they didn't notice [the problem] or maybe [they] thought of getting [their child's] eyes checked earlier when this could have been caught and something could have been done.” Understanding that patients and their families ultimately determine what constitutes bad news is consistent with the patient-centered perspectives of counseling espoused by others.^{1,2,9} An understanding of what defines *bad news* in a profession is contextualized, in part, by its scope of practice. The disclosures of disease and lifestyle constraints due to disease are shared tasks for physicians and optometrists. Physicians understandably

identify end-of-life disclosure as their most difficult category^e of bad news delivery.³² Interestingly, optometrists find that, even in the absence of disease, correctable dysfunction (e.g., myopia or presbyopia) can represent bad news for their patients.

Strategies of Delivering Bad News

We addressed our second research question (“What strategies do optometry students and faculty report employing when delivering bad news and are these strategies consistent with those advocated in medicine?”) by asking the optometry students and the faculty optometrists to describe their approaches to delivering bad news. Students felt they had a limited yet developing comfort with delivering bad news. Whereas students and their instructors strove to be compassionate, informative, and patient centered during the delivery of bad news, they displayed some differing strategies regarding the amount of information to deliver and the level of flexibility to use in their delivery. Both novices and their expert teachers struggled to display empathy and compassion while maintaining their sense of professional distance.

By analyzing the student- and instructor-reported strategies of delivering bad news through the lens of the SPIKES protocol, we noted four emerging themes that helped us identify some challenges to fully implementing this protocol to optometric practice, particularly in settings where there are clinical novices: 1) the relevance to optometric practice (Steps 1 and 3), 2) the flexibility of delivery (Steps 2, 4, and 5), 3) information loading (Step 4), and 4) professional stance (Step 5). Whereas the “relevance to optometric practice” theme pertained to both students and their instructors, the other themes highlighted the greatest challenges posed by the SPIKES protocol for novice clinicians (see Table 2). Although the students and instructors shared common perspectives on some of these themes, we noted some divergent ideas that typically remained unexplored by the participants in the

context of patient care in a teaching clinic.

All of the students and 2 of the instructors had prior exposure to the SPIKES protocol for delivering bad news. Despite the range of familiarity with the protocol, all participants—when shown a summary of the protocol in the interview—were able to compare and contrast its utility to their clinical practice. Both the optometry students and their instructors believed the medicine-derived, six-step SPIKES protocol translated moderately well to an optometry setting and was generally in agreement with their own strategies. The main exception noted was the students' stance toward Step 3 (Obtain the patient's invitation) and an element of Step 1 (Set-up the interview).

Relevance to Optometric Practice

The students—who were most familiar with the SPIKES protocol—did not see how Step 3 was “relevant in practice” (S2). Consistent with other study participants, 1 student stated:

S3: Definitely, I don't like [Step 3]. I didn't like it when we learned it [in class] and I still don't really like it.... I still don't feel that it's that useful...it's something that I find difficult to...really apply to an actual situation.

Baile et al¹ suggested that Step 3 (Obtain the patient's invitation) involves discussing information disclosure—that is, determining the patient's preference for full, partial, or limited disclosure. They recommended that “discussing information disclosure at the time of ordering tests can cue the physician to plan the next discussion with the patient.” We believe the relevancy of this step depends on a field's scope of practice and its resulting diagnostic regime. Initial physician consultations routinely include some data gathering in the office and a determination of what subsequent tests are to be completed, typically at another time and in another place. Thus, physicians encounter a natural break at the end of

^dAt the time of the study, the optometry student participants had examined, on average, 750 patients. With the overall prevalence of low vision approaching 2%,⁴² these students would have examined at least 15 patients with a notable visual impairment (this is a conservative estimate as the proportion of people with visual impairment would be higher at an optometry teaching clinic than in the general population).

^eOptometrists do not provide end-of-life disclosures but they routinely diagnose eye diseases that occur concurrently with potentially life-threatening systemic disease (e.g., diabetic retinopathy in diabetes mellitus). More rarely, they diagnose eye diseases that have notable mortality rates (e.g., retinoblastoma—a childhood eye cancer⁴⁴).

the initial diagnostic work-up for establishing patient preferences regarding subsequent information disclosure. In contrast, optometrists typically complete a full assessment of the oculovisual system within one appointment, necessitating a seamless shift into information disclosure. Not only does counseling “on the fly” make it difficult for practitioners to ascertain patient preferences regarding disclosure, it also makes it impossible to rehearse the news delivery—a strategy advocated in Step 1 (Set-up the interview). There is no natural gap for disclosure discussions except when optometrists schedule additional testing or refer the patient to other health care practitioners for a consultation. At that point, optometrists must decide how much of the bad news to share before the consultation occurs.

Flexibility of Delivery

Both students and instructors believed flexibility in delivery was an important feature of delivering bad news. For students, this meant that they should adjust their delivery based on observable patient responses; thus, they approached giving news (Step 4)

with an acute attention paid to addressing patient emotions (Step 5). Student strategies for delivering bad news were adjusted, according to Student 6 (S6), “based on the patient’s reaction.” According to students, the delivery was a dynamic process in which students customized their delivery in real time as they observed patient responses to it. In the minds of the students, the patients led the delivery. For example, Student 3 (S3) remarked:

I think I let the patient bring me in that direction. Like if I’m saying something and then [they] start asking a million questions about it, then I know that they want to know more information and I kind of know the level they want and where...they’re standing on that.... If they don’t say a whole bunch, then I kind of take that as—OK—the patient ... maybe they don’t want to know a lot, or maybe they don’t really totally understand you or that kind of thing.... It’s just that you kind of let the patient lead you in the direction depending on how they’re reacting to what you’re saying.

Although the students appropriately valued flexibility when delivering bad news, their flexibility was predominantly reactive and rarely proactive. Reacting to patient responses made sense to them but proactively planning their delivery did not. For these students, being patient centered meant letting patients “lead you.” These students might benefit from discussions of what limitations may occur if practitioners maintain a strictly reactive form of flexibility. For example, how does this strategy work for patients who are too shocked to respond to the bad news?

Instructors also placed importance on discursive flexibility during the delivery of bad news. Their comments focused mostly on giving information (Step 4). Instructor 5 (I5) spoke at length about how the patient’s sense of the problem helped to shape the delivery of bad news for that person. Different approaches were needed for: 1) patients who had a sense of what was wrong, 2) patients who had misconceptions about what was wrong, and 3) patients who had no expectation that something was wrong:

Table 2
Aspects of SPIKES Protocol Reportedly Posing Challenges

	Aspects of SPIKES with less relevance to optometric practice	Aspects of SPIKES Posing Greatest Challenges for Students		
		Flexibility of delivery	Information loading	Professional stance
Step 1 Set up interview	✓ ^Φ			
Step 2 Assess patient’s perception		✓		
Step 3 Obtain patient’s invitation	✓			
Step 4 Provide knowledge		✓	✓	
Step 5 Address patient’s emotions		✓		✓ ^β
Step 6 Develop strategies & summarize				

ΦIndicates that the mental rehearsal aspect of Step 1 was not typically viewed as realistic to optometric practice.

βIndicates that experienced optometrists also reported struggling with this step.

I5: I like to find out what [the patient] thinks is going on.... When you have a sense of...what the patient thinks is going on...if it's correct you can build on that. If it's wrong, you can approach it in a way that...doesn't belittle their mistake or the fact that they figured it out wrong but helps redirect them to the correct information.... When the patient has absolutely no sense that there's anything wrong with their...eyes or their vision...I think your approach is different because you can't say to them..."what [did] you think was going wrong with them"?

The strategy of selecting a delivery strategy based on an assessment of patient perception is consistent with Step 2 (Assess the patient's perception) of the SPIKES protocol. Both students and instructors were generally supportive of this strategy, although some of the students acknowledged that they routinely omitted this step. As Student 5 (S5) noted, "One step, I often leave out is the second step.... I kind of forget to do it unless in [names a clinic] where they say this right on the...history taking form." For these clinical novices, having a visual cue on the patient record can remind them to include steps that have not, as yet, been integrated into their set of strategies.

Several instructors discussed flexibility in a final way: They noted that clinical novices struggled to adjust their speech to different patient cohorts and perspectives. For example, instructor I2 noted that clinical novices found it difficult to shift their communication to a "lower literacy level" when working with children or patients who spoke English as a second language. At this point in their training, clinical novices were still developing these complex, discursive, improvisational skills.

Information Loading

Consistent with the SPIKES protocol, the optometry students believed they should attempt to lessen patient shock by forewarning their patients that bad news was coming (Step 4). However, they preferred an implicit rather than an explicit warning because the students assumed that patients depend on practitioners' nonverbal and implicit verbal cues to signal approaching trouble. For exam-

ple, Student 6 (S6) noted, "You start talking...they pick it up pretty quick just by the tone of your voice." The students preferred to ease patients into the news through general explanations about eyes and vision that quickly became personal to the patients—the students assumed patients would recognize that examiners were "going somewhere" when they began to explain something about the eye or visual system. Student 3's (S3's) comments were typical of this type of strategy, which relied on "hiding" the warning:

I think you're warning them ... you're kind of hiding that you're warning them—but you're still warning them. Because you're saying, "This is your eye. If this was your eye, this is what's going on." And then they're like, "Oh, that's *my* eye!"...So I think most people would clue in that you're kind of going somewhere with that and you don't have to explain it.

For the students, sensitive patient care involved an implicit notification from them that bad news was forthcoming. This approach seemed to include an expectation that patients would read implicit caregiver signals correctly, independent of cultural differences between patients and caregivers. The limited comments about forewarning by the instructors revealed they, too, did not routinely provide an explicit warning to their patients. Interestingly, some of the instructors seemed to frame the concept of forewarning differently than the students. For the instructors, the presence of patient symptoms or positive family history served as the forewarning. Thus, as noted earlier, patients, who are "under the assumption that everything is OK" (Instructor 5 [I5]) lacked any forewarning that bad news was coming and practitioners had to approach these patients differently than those who presented with a concern or a problem. The perspective gap was that students spoke about their role in forewarning patients, and the instructors pointed to the role of the patient's story in providing any necessary forewarning.

Giving knowledge and information to patients constitutes the main thrust of Step 4, and, according to both students and instructors, it was described as critical to the successful delivery of

bad news. The student approach to delivering bad news emphasized the inclusion of detailed information about their patients' vision problems. For the students, the goal of counseling was, according to Student 5 (S5), to "make sure that the patient is leaving with the right understanding of what their condition is and what their state of affairs is." Patient-physician communication studies have found that physicians routinely underestimate their patients' desire for information;²⁰ thus, the optometry students' desire to provide detailed information to their patients seems like an appropriate goal. Interestingly, their clinical instructors indicated that one of the most common errors displayed by optometry clinical novices was "overcounseling" patients. Instructor 5 (I5) described this novice error as "overcounseling beyond the point where the patient really wants to know about it or...understand it.... A lot of times, [students] provide a lot of information that's...extraneous to the point." This instructor offered one reason for overcounseling in the presence of bad news: "I think they're trying to put some good news into...the bad news." Despite lowered patient recall in the presence of bad news,³³ these clinical novices maintained their belief that more was not less—they believed that the provision of more information would leave a more positive and lasting clinical footprint on their patient's care. On examining our data, we derived two postulates for this apparent disconnect regarding information loading—the amount of information to deliver when giving bad news. Student comments suggested to us that extensive information loading served, in part, as a strategy for displaying professional competence and for minimizing emotional patient reactions.

Part of being competent professional students is being able to showcase knowledge. These displays are typically instigated by, and targeted at, their instructors. We saw indications that these students were replicating these classroom strategies in the clinic by making an assumption—if part of being good students meant displaying a wealth of knowledge before instructors, then part of being good practitioners might also involve such displays before patients. Student 5 (S5) echoed the other students' emphasis on knowledge dissemination, "Maybe it's just easier for me as a science student to do that first and then go into

the more personal stuff.” This student expanded on this idea,

I usually [start] explaining ... physiologically what’s going on, perhaps with a picture like, “this is the part of the eye that’s changing and this might be why” and then [I go] into actually saying what the name of the condition is or what the—implications of that are. So [I] tend to start on [a] technical basis.

A potential barrier to students’ fine-tuning their information loading strategies derives from the realities of a teaching clinic. The optometrist instructors we have studied typically supervise multiple students simultaneously; thus, they are routinely forced to make decisions of what to focus on—patient care or student education.³⁴⁻³⁶ Time constraints do not always allow the instructors to determine the student’s motivation or discuss their strategies with students.

We also wonder if the students’ strategies of intense patient education were influenced, in part, by their preference to avoid significant patient emotions—the hope being that more information (Step 4) would translate into less emotional fallout (Step 5). There were indications that optometry novices approached patient emotions with notably greater discomfort than their more experienced counterparts. No single patient emotion was hardest for students and faculty to observe, although anger was cited most often as a difficult patient response to encounter. An intriguing difference among students and clinical instructors appeared to relate to the level of acceptance of patient emotions as a natural response to hearing bad news. Students preferred to avoid or minimize patient emotions, whereas clinical instructors accepted patient emotions even if they found certain ones difficult to observe. According to some of the students, patient emotions could get in the way of delivering bad news. For example, Student 4 (S4) stated, “You just have to wait for them to calm down because there won’t be anything you could say that would—get them calm.” Like others, Student 7 (S7) judged the quality of bad news delivery, in part, based on how “comfortable” and “happy” patients seemed when they left:

And that’s one thing I’ve learned. If...the patient leaves comfortable, I think you’re doing a pretty good job. And if...you ask them before they leave [and] they don’t have any further questions.... If they say “No” and they’re pretty happy, then you’ve done a pretty good job.

Thus, according to the students, indicators of a good delivery included those patients who appeared “comfortable,” “happy,” and did not have “any further questions.” Unexplored, this belief could lead to some incorrect conclusions about the delivery. For example, the above student might wrongly interpret a patient in quiet denial as evidence that the patient was fine.

Wary that patient recall decreases in the presence of bad news and mindful that hope was an important attitude to display, the instructors tended to avoid using certain “hot words” that once heard, were too emotionally loaded for patients to hear anything else. The most frequent example given was cataract. As Instructor 6 (I6) said, “I quickly learned that for some people, the term cataract...was as bad as...cancer.... And I quickly learned that you just don’t use the word cataract.” Despite significant advances in management, *cataract* still represented devastating news to many patients, particularly older adults with knowledge of past surgical approaches and outcomes. Students did not fully understand the hesitancy of some optometrists to use hot words; the students were unsure why some optometrists would not disclose conditions like early cataract to their patients while others would. Without explicit discussion of these discursive practices, the students were left confused about how and when to tell patients they had certain conditions and convinced that instructor differences were merely idiosyncratic. As Student 5 (S5) commented,

What [supervisors] consider bad news is totally different. Like some supervisors will insist that you tell the person—they have cataract formation, whereas the other eighty percent will say, “It’s nuclear sclerosis, Grade 1.” So who cares if you tell the patient that there’s some clouding of the...lens?!

This student did not see these disparate counseling strategies as emanating from any clinical reasoning process. Rather students, like the one quoted above, saw these strategies as instructor idiosyncrasies to be noted and mimicked to achieve a positive evaluation from the instructor. According to this student, if the instructor “told me with the first patient to have *that* in mind...all of a sudden, I’m mentioning *that*—I’m doing *that*. I’m just playing along with what they want.” These comments were echoed across the student group—students routinely adjusted their clinical performance to suit their instructors. The resulting competing tension between patient care and student education affects the behavior of both these students and their instructors and its significant impact deserves a more detailed analysis.³⁷

Professional Stance

As the opening excerpts in this article indicate, several of the participants spoke about the challenge of managing emotions while maintaining a professional distance from the patient (Step 5). Students and their instructors wanted to show compassion without displaying too much emotion—for example, they considered a practitioner crying in front of a patient to be unprofessional. Participants disagreed about whether supportive touch (e.g., touching a patient’s arm) would constitute professional behavior for an optometrist. Some of the instructors spoke about the need to adjust their approach depending on the type of patient. Instructor 2’s (I2’s) remarks highlight the societal expectations that shape practitioners wanting to comfort a patient in distress: “Little old ladies often don’t mind their hands being held. But a 40-year-old male who bursts into tears probably would react aggressively if you chose to hold his hand.” Several of the instructors indicated that they told students about their personal struggles when delivering bad news. For example, Instructor 4 (I4) has told students,

There’ve been times when I, you know, had to sort of hold back the tears a little bit and even sort of go out of the room for a minute to compose myself.... So I share that with the students because the students would sometimes share that with me, too.

Whereas the sharing of personal struggles may assist students in making decisions about how they experience emotions and display compassion, explicit discussions about what qualities convey professional compassion may further enhance the learning process of clinical novices.

Implications

In this preliminary examination of the perceptions and strategies of delivering bad news in a Canadian optometry teaching clinic, we saw evidence of the socializing power of this pivotal discursive process. According to these senior optometry students and their clinical instructors, bad news in optometry typically involves: 1) vision loss due to disease, 2) lifestyle constraints due to inadequate vision, or 3) first-time spectacle correction. Consideration of what constitutes bad news in a profession reflects, in part, the field's attention to patients' perspectives and professional boundaries. The participants in this study derived a definition of bad news that reflects a patient-centered awareness where patients ultimately decide what news is bad—even modest, correctable myopia can constitute bad news for some patients and their families. Describing bad news is also contextualized by a field's scope of practice. Optometric management routinely involves optical correction, vision therapy, and education, and, in an increasing number of jurisdictions, it extends to the treatment of eye diseases with therapeutic pharmaceutical agents.^f These increasing biomedical responsibilities increase the likelihood that delivering significant bad news is a part of optometrists' duties. This trend points to a need for appropriate training in the delivery of bad news for optometry students, residents, and practitioners. Optometrists must also come to terms with the reality that they cannot treat some of what constitutes significant bad news for their patients' eyes and vision. Instead, optometrists and physicians (typically ophthalmologists) often share the management of bad news. Yet, in the presence of shared care, who should deliver the bad news? Optometrists have to be ready both to deliver bad news and to

respond to bad news delivered by others. The optometry students and optometrists in this study believed they play a vital role in the delivery of bad news. Future studies should examine how optometrists and ophthalmologists negotiate the delivery of bad news.

The findings of this study help to identify, for clinical educators, aspects of the SPIKES protocol that are potentially more challenging for optometry students to implement in their patient care. The clinical novices in this study had already developed several strategies for delivering bad news to their patients. These students stressed the importance of providing extensive information about the eye condition and letting patient reactions to the news lead their delivery. They argued against explicitly forewarning patients that bad news was coming. Although the students' emphasis on delivering information to their patients partly reflected logical attempts to follow health care trends in patient-centered education, we saw evidence that these clinical novices were responding to additional motives. We believe the students' information-loading strategy reflected their attempt to display professional competence (by displaying knowledge) and to minimize emotional patient reactions (by helping patients to reason away their emotions). The students appeared unaware that overcounseling was identified by their instructors as one of the most common errors made by novices when delivering bad news. The other common student error noted by the instructors in this study was a tendency toward rigidity when counseling. This error occurred despite the high value students placed on being flexible in their delivery. The apparent disconnect, between some of the student strategies and the instructor observations, provides an indication of the limited, explicit instructor feedback students receive about their counseling strategies.^g A greater emphasis on explicit feedback may help optometry students to reflect further on the strengths and limitations of some of their strategies for delivering bad news as well as to unearth the apparent idiosyncratic discursive practices of their instructors. Such explicit feedback might also

address different interpretations of professional value. For example, both the students and the instructors valued flexibility when delivering bad news but, without explicit discussions, their respective sense of what constituted being flexible remain unexplored and misinterpreted—a problem noted in other studies of clinical novices.³⁸

Patient counseling—particularly when bad news is delivered—provides opportunities not only to develop clinical skills but to convey professional values and attitudes. In an optometry teaching clinic, we found evidence that counseling contains both explicit and implicit messages about professional identity. For example, both these novices and their experienced instructors struggled to display empathy toward patients while maintaining a professional distance. Discussions with their mentors about these types of struggles might help novices to shape both their strategies of delivering news and their identity as health care professionals.

These findings highlight the need for each profession to reflect on how the nature of their practice and their professional identity shape the delivery of bad news. According to this subset of students and instructors in an optometry teaching clinic, the medical-based SPIKES protocol translated moderately well to the practice of optometry, with the exceptions of mentally rehearsing for the delivery and obtaining the patient's invitation to disclose information. Unlike many initial medical consultations, the nature of optometric practice we studied did not typically provide a natural break in testing during which practitioners could rehearse the delivery of news or initiate an information disclosure discussion. These strategies gain currency for optometrists in situations where they must refer to physicians for further assessment. By articulating a protocol realistic to the field's practice orientation, professions can help both novices and established practitioners to enhance their strategies for delivering bad news and improve the outcomes for their patients.

To date, there have been limited published studies examining the important issue of optometrists and optometry students delivering bad news

^fIn the jurisdiction where this study occurred, therapeutic pharmaceutical agents (TPAs) were beyond the scope of practice for optometrists, yet the students gained TPA preparedness at other clinical placements to enable them to sit future licensure examinations in TPA equipped jurisdictions.

^gThe optometry students in this study indicated that, in general, they received limited feedback from their clinical instructors regarding communication strategies.³⁷

to their patients. This study occurred at one optometry school and additional research will help establish the transferability of these findings to other optometry programs. The indications of this preliminary study are that greater attention should be paid to training optometry students to deliver bad news. This study's findings also suggest that the medical-based SPIKES protocol is a useful starting strategy for training optometry students; however, there are areas of discordance between the protocol and optometric practice. Educators and researchers could approach this discordance one of two ways: 1) design and implement an optometry-based protocol that honors the unique aspects of optometric practice or 2) teach the SPIKES protocol, allowing for discussions that identify its limitations to optometric practice.

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Utility of Preadmission Criteria in Predicting Critical Thinking Skills

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Abstract

Purpose: The purpose of this study was to determine the utility of preadmission criteria in predicting critical thinking skills among optometry students. The research questions of interest were: 1) Which of the preadmission criteria is the best predictor of scores of critical thinking skills, and 2) how do the variables in combination work to predict scores of critical thinking skills? **Methods:** Three months after matriculation, 104 students from the New England College of Optometry (NECO) were tested with the California Critical Thinking Skills Test (CCTST) to measure critical thinking skills. The independent variables of interest were selectivity of undergraduate college, undergraduate grade point average (GPA), undergraduate science GPA, prerequisite GPA, total science Optometry Admission Test (OAT), quantitative reasoning OAT, and biology OAT. **Results:** The results of this study suggest that there is limited utility in the admission criteria selected for predicting scores of critical thinking. The variables in combination also demonstrated limited utility for predicting critical thinking scores. Of all the preadmission criteria tested, biology OAT was the best predictor of critical thinking skills. **Conclusion:** Because preadmission criteria demonstrated limited utility in the selection of qualified candidates, optometric institutions should consider specifically testing for these skills with a standardized test before admission to the program, structuring interview material to evaluate critical thinking skills, and/or commit to the teaching of critical thinking throughout the curriculum.

Key Words: Critical thinking, optometric education, admission criteria, clinical reasoning, clinical education

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The Association of Schools and Colleges of Optometry (ASCO) recommends that by graduation students must acquire “the critical thinking skills needed to assess the patient’s visual and physical status and to inter-

pret and synthesize the data to formulate and execute effective management skills.”¹ Recent studies have found that critical thinking skills are important because they are associated with several areas related to the successful completion of optometric education. In particular, critical thinking skills have been found to have a positive and statistically significant correlation with optometric GPA and National Board of Examiners in Optometry (NBEO) Part 1 scores as well as with clinical performance.^{2,3} Several studies in other health care professions have supported this association between high-quality critical thinking skills and professional judgment.⁴⁻⁷ Miller found that first-year medical exam scores, medical GPAs, and MCAT scores had significant positive correlations to critical thinking.⁷ Likewise, Scott found that critical thinking scores were moderately predictive of academic success in the preclinical years of medical school.⁴ Admissions committees review preadmission criteria such as overall GPA, science GPA, prerequisite GPA, and OAT scores to identify candidates who will be successful in both the didactic and clinical environment.

Although the importance of critical thinking in health care education has been identified, the teaching and assessment of these skills do not have uniform consensus among educators and administrators.⁸ Optometric faculty are challenged with the teaching of extensive amounts of knowledge and techniques while also developing the critical thinking skills of students. Administrators often find themselves hindered by faculty and student time and financial considerations. The lecture format is one of the most cost-effective ways to deliver material. However, in most cases, in the lecture format, students are left on their own to analyze, prioritize, and structure their knowledge, thus hindering the development of critical thinking skills.⁹ Recognizing the importance of critical thinking skills in optometric education and having the ability and means to implement the teaching and fostering of critical thinking into the curriculum are dichotomies that are being addressed at many optometric institutions. Therefore, the ability to select students with adequate preexisting critical thinking skills is important.

The California Critical Thinking Skills Test (CCTST) is a validated psychological test and is designed to measure the skills involved with criti-

cal thinking.¹⁰ The CCTST is content neutral; questions are not related to science or optometric knowledge base. Therefore, it possesses the ability to measure basic critical thinking skills that are not influenced by the test-taker's knowledge base, educational background, educational emphasis, or type of professional degree program. The CCTST was selected because the areas tested reflect the cognitive skills identified by ASCO as needed for successful clinical practice. The items cover a variety of topics; some include concrete scenarios and some are more abstract in nature. The test contains 34 questions, with a 45-minute time limit. The five areas tested by the CCTST are analysis, evaluation, inference, deductive reasoning, and inductive reasoning. The range of possible scores are 0 to 34.

Presumably, students who possess sufficient, preexisting skill in critical thinking will have an easier time attaining proficiency in critical thinking during their optometric education. The purpose of this study was to determine the utility of preadmission criteria in predicting critical thinking skills. The specific research questions of interest were: 1) Which of the variables—undergraduate college selectivity, undergraduate GPA, science GPA, prerequisite GPA, total science OAT, biology OAT, or quantitative reasoning OAT—is the best predictor of scores of critical thinking skills? and 2) How do the variables in combination work to predict scores of critical thinking skills?

Methods

One hundred and four students from the New England College of Optometry (NECO) participated in this study. The students were tested 3 months after starting optometry school. The CCTST was the assessment tool used to measure the outcome variable, critical thinking skills. The CCTST was administered using the guidelines from Insight Assessment.¹⁰ The instrument is based on the American Philosophical Association's definition of critical thinking; the Delphi Report, which represents the collective thinking of several hundred experts in a variety of disciplines, defines *critical thinking* as "purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteria-logical, or contextual con-

siderations upon which that judgment is based."¹¹ The tests were scored by Insight Assessment, which reported both a total score and individual subsets for each subject area.

The predicting variables of interest were selectivity of undergraduate college, undergraduate GPA, undergraduate science GPA, prerequisite GPA, total science OAT, quantitative reasoning OAT, and biology OAT. The admissions office at NECO supplied the overall undergraduate GPAs, which were calculated by the undergraduate institution of each applicant. The undergraduate science GPAs were calculated from the student's official undergraduate transcript by the admissions office at NECO and represent all the undergraduate science courses taken by the student at the time the admissions decision was rendered. The GPAs on prerequisite courses were calculated from the student's official undergraduate transcript by the admissions department at NECO. The OAT scores were supplied by the Optometry Admissions Testing Agency (Chicago, IL). The undergraduate college selectivity for institutions in the United States was determined using Barron's 2003 Rating Scale, which ranged from less competitive to most competitive.¹² For the 19 students from Canadian institutions, *Maclean's Magazine* November 2, 2006 issue was used for ranking.¹³

Correlation analysis among the four continuous predictor variables was computed to examine the degree of association with scores on CCTST. Analysis of variance (ANOVA) was used to determine the association between the CT skill and selectivity of undergraduate college. Simple linear regression was conducted to assess the predictability of a single, continuous, explanatory variable on critical thinking. Hierarchical multiple regression analyses were used to assess the extra variance explained by OAT scores beyond that explained by undergraduate GPAs.

This study was reviewed by the Institutional Review Board at NECO.

Results

The assessment of the association between a single predictor and the response variable was carried out through the univariate linear regression for the six continuous predictors and ANOVA for the categorical predictor (Tables 1 and 2, respectively). Among all predictors, the biology OAT had the strongest association with the critical thinking score ($r^2=0.113$, $p<0.001$), followed by quantitative reasoning OAT and total science OAT ($r^2=0.056$, $ps=0.015$ and 0.016 , respectively). Although, none of the three GPAs were significant predictors of the critical thinking score, the science GPA explained a higher proportion of the variance of critical thinking scores than overall GPA and prerequisite courses GPA. Students from least competitive colleges had slightly lower critical thinking scores; however this small difference was not statistically significant (Table 2, Figure 1).

Correlations among predictor variables are described in Table 3. The correlation demonstrated weak and nonsignificant association between undergraduate GPAs and OAT scores. Quantitative reasoning OAT was not strongly associated with any predictors studied. The three GPAs that were analyzed demonstrated high and significant correlations between each other, whereas for the OAT scores, only the biology section was highly correlated with total science.

Table 1
Univariate Regression Analysis

	Slope	R ²	p-value
GPA	0.916	0.004	0.532
Sci GPA	1.965	0.025	0.106
Pre-Req	1.293	0.010	0.324
OAT BIO	0.042	0.113	<0.001
OAT QR	0.034	0.056	0.016
OAT TS	0.034	0.056	0.015

Table 2
ANOVA Analysis for Undergraduate College Selectivity

Selectivity	LC	C	VC	HC	MC	p-value
n	5	22	32	17	28	0.655
CT skill mean	16.00	18.909	18.875	18.588	19.429	

LC, least competitive; C, competitive; VC, very competitive; HC, highly competitive; MC, most competitive.

As shown in Table 3, there were moderate to strong associations between predictors. To evaluate the unique contribution of undergraduate GPAs or OAT scores to predict the critical thinking score, a hierarchical multiple regression analysis was used. The selectivity of undergraduate college was entered first into the regression analysis, the GPAs were added to the predictors, and then the quantitative

reasoning OAT, biology OAT, and total science OAT entered the model sequentially. The model R , the R^2 change, and change in the fitness of model (F -change) are listed in Table 4. Results suggested that the biology OAT explained the largest proportion of the variance (R^2 change = 0.08, $p=0.002$), with QR OAT ranking second (R^2 change=0.037, $p=0.0503$) and other pre-

dictors explaining the least amount of variance.

Hierarchical multiple regression analysis revealed that biology OAT had the strongest predictability on the CT skill score. Although the association was significant, the variation explained by biology OAT score alone was only 11.3%. Quantitative reasoning OAT added 4% to the total variance and this contribution fell a little below the significance level. As a single predictor, total science OAT was significantly associated with critical thinking score. Due to its close link to the biology OAT, total science OAT could not contribute much additional information to determine the critical thinking score.

Figure 1

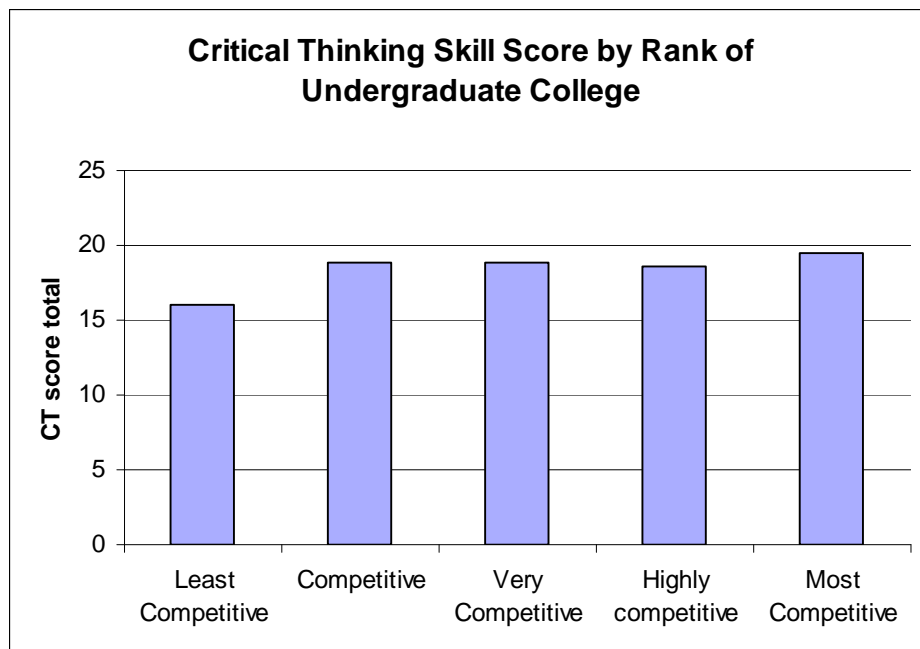


Table 3
Correlation Matrix of Continuous Predictors

	GPA	Sci GPA	Pre-Req	OAT QT	BIO	TS
GPA	1					
Sci GPA	0.792	1				
Pre-Req	0.802	0.797	1			
OAT QT	-0.067	-0.010	-0.045	1		
BIO	0.122	0.163	0.079	0.172	1	
TS	0.055	0.140	0.034	0.290	0.792	1

Boldfaced numerals were significant at the $p=0.05$ level.

Table 4
Regression Model: Relationship of Predictor Variables to Total Score of Critical Thinking Skill

Variables in the Model	Model R	R^2 change	F change	p -value
Selectivity	0.155	0.024	0.611	0.655
Selectivity, GPA, Sci GPA, Prereq	0.256	0.042	1.425	0.240
Selectivity, GPA, Sci GPA, Prereq, QR	0.321	0.037	3.931	0.050
Selectivity, GPA, Sci GPA, Prereq, QR, BIO	0.433	0.085	9.812	0.002
Selectivity, GPA, Sci GPA, Prereq, QR, BIO, TS	0.450	0.016	1.821	0.180

Discussion

The purpose of this study was to determine the utility of preadmission criteria in predicting critical thinking skills as measured by the CCTST. The results of this study suggest that there is limited utility in the admission criteria we selected for predicting scores of critical thinking, whether alone or in combination. Of all the preadmission criteria tested, biology OAT was the best predictor of critical thinking skills. The OATs are standardized, multiple-choice tests that rely on both recall of information and content-specific, problem-solving ability. The CCTST is also a standardized, multiple-choice test of problem-solving skills that is content neutral. Therefore, it is not surprising that the biology OAT was the better predictor for critical thinking scores than other measures. In contrast, GPAs reflect many testing mediums, diversity of material, and lack of standardization.

Studies have shown that students who come into a program with good critical thinking skills go on to have good clinical reasoning skills.¹⁴ Clinical reasoning skills become quicker and more refined as students progress from novice to expert clinician. The most common errors made in clinical reasoning consist of inadequate identification of relevant information, poor interpretation of data, and/or flaws in hypothesis generation.¹⁵ To avoid these errors, students need to develop their critical thinking skills to allow for appropriate pattern recognition, organization of thinking, and analysis of information.¹⁵ In optometry, critical thinking skills have shown a moderate correlation to optometric GPA, NBEO (Part 1), and clinical performance.^{2,3}

Screening for adequate preexisting critical thinking skills helps to ensure that students start their professional education with a sufficient foundation in critical thinking. Didactic and clinical education gives students the opportunities to refine and build on their critical thinking skills. If the preadmission criteria currently in use are unable to provide useful information on critical thinking skills, then specifically testing for these skills may be of utility. Screening for adequate preexisting critical thinking skills may have utility in selecting students who are more likely to be successful in the program and in screening for those students who may need specific educational strategies once admitted. Standardized tests of critical thinking have been used in other health care professions to monitor and evaluate critical thinking skills. However, the use of these tests as a preadmission criterion would be innovative.

Admissions committees seek to admit students who will be successful in the academic program and in the profession. If critical thinking is identified as a skill that is helpful in achieving those goals, then this skill needs to be evaluated at the time of admissions. The cost-benefit of testing all potential students with standardized tests has not been established, so admissions committees may want to explore other options. One such option used at most optometric institutions is the personal interview. The interview serves many roles. It allows the student the opportunity to demonstrate adequate communication skills, the ability to interact with people, the opportunity to gain further information on the college, and the chance to explain any weakness in their application and emphasize any strength. The interview may be an opportunity to ask questions that probe needed skills for good clinical reasoning. The problem scenarios used in an interview would need to be content neutral but utilize the same problem-solving skills used by clinicians. This process would be challenging to implement because it is subjective and would require interviewers and admission committee members to be well educated in the understanding of critical thinking.

Studies have demonstrated that good critical thinking skills lead to good clinical reasoning skill.¹⁶⁻¹⁸ Studies have also shown that admissions criteria such as undergraduate GPA, science GPA, and standardized tests

often correlate poorly with clinical reasoning and performance.⁸ If optometrist educators are unable to preselect the skills needed for success as a clinician, institutions should consider formal courses in critical thinking as well as infusing critical thinking concepts into all areas of the curriculum. All students admitted to optometric programs should be given the opportunities to further develop their existing critical thinking skills, especially if those skills are not adequate.

Teaching critical thinking skills requires a change in the culture of students and teachers. This change in culture is multifaceted, but two key components would be shifting from teaching knowledge and facts to teaching thought process, and shifting of the responsibility of learning from teacher centered to student centered. These changes can be challenging for both students and teachers. Faculty members often feel compelled to provide students with a multitude of facts, data, and information. Students often perceive that the more facts they memorize, the more they have learned. In most cases, this is rewarded on multiple-choice tests, which emphasize recall of information. Faculty may have difficulty relinquishing control, and students may have difficulty assuming more of the responsibility for learning. Students may have difficulty recognizing that the increase in workload will provide a greater pay-off in the long term. This is compounded by the worldwide increase in scientific and health-related information as well as the emphasis on passing national board examinations.

Conclusion

ASCO has recognized the importance of critical thinking skills by identifying their critical importance by the time of graduation as necessary for adequate clinical skills. Critical thinking skills are a valuable skill in the successful completion of optometric programs. The results of this study suggest that there is limited utility in certain preadmissions criteria studied in predicting critical thinking skills. Of the variables investigated, only biology OAT predicted a significant portion of variability on CCTST. In light of the importance of critical thinking to clinical performance, further studies should continue the search for better predictors. Optometric institutions should consider testing specifically for

critical thinking skills with a standardized test before admission to the program, structure interview material to evaluate these skills, and/or commit to the teaching of critical thinking throughout the curriculum.

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Investigation of Student Self-Perceived Preparedness in Interacting With Patients Experiencing Psychosocial Challenges

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Abstract

Purpose: Despite advances in health care, communication skills, cultural competence, and ethics have lagged. This survey investigated student perception of adequacy with current training. **Methods:** Students at the Illinois College of Optometry (2007 and 2008 classes) were surveyed. Demographics, experience, and perceived adequacy of interprofessional training were collected, as well as desire for additional training. **Results:** Of 286 potential participants, 88 third-year and 46 fourth-year students responded. Data were analyzed, showing modest increases in experience but no improvement in self-confidence between classes. Levels of confidence were modest for both years. **Discussion:** Progression through the program provided experience but little increased confidence. Results were confounded by small response samples and demographics that were dissimilar to general population. Future administrations and faculty inclusion are needed.

Key Words: Clinical education, interpersonal skills, health care literacy, communication, self-confidence

Introduction

The beginning of the 21st century has seen health care emerge as a national critical issue. Quality of care, accessibility to appropriate and affordable services, value, social costs, efficacy, and equality of services have all

come to center-stage. Although these issues are embraced in public debate, a number of serious diseases and health-related challenges have entered the health care scene.

The literature has identified sources of long-suspected problems affecting health care. Patient dissatisfaction with the lack of empathic behavior in health care delivery has been proven significant. Many people feel that their physicians do not take the time to listen adequately, respond appropriately, spend the necessary amount of time, or achieve an overall patient-centered

approach.¹⁻⁶ Lack of patient satisfaction has been associated with poor health care outcomes.⁷ Fiscella et al concluded that patient trust is directly related to the behavior of primary care physicians.³ It is no surprise that reduced compliance rates with recommended treatments of chronic conditions look discouraging. As few as an average of 50% of patients follow physician recommended schedules beyond 6 months.⁸⁻¹¹ On a more basic level, emotional health and a personal sense of well-being have been shown to be linked to physical well-being.¹² Stress, as an example of an emotional factor, has been linked to a host of diseases, conditions, and negative physiologic outcomes.¹³⁻¹⁶ The perception of pain has been cited as being undertreated and has been implicated to occur in high association with cognitive, emotional, and physical problems.¹⁷⁻²⁰

One reason for low levels of patient adherence and satisfaction with health care professionals could be the inadequacies of performance of the health care providers as educators. The U.S. Department of Education recently reported that over one third of all Americans (> 90 million) possess limited health care literacy (referred to hereon as literacy).^{21,22} Literacy tends to be lowest among those demographic groups with the highest number of health risk factors. Over 50% of Blacks, Hispanics, and people over 65 years of age perform at the "basic" or lower levels of literacy. In addition, the percentage of limited literacy is typically highest among those who lack private insurance or military-funded health care. The report goes on to state that these effects are often due to the failure of physicians to adequately assess the literacy of their patients and to respond proactively. Physicians in the United States tend to overestimate their patients' understanding of health-related information, with the consequence of minimal patient participation during encounters and poor adherence with diagnostic or treatment plans.²²

Poor performance in health care literacy, patient dissatisfaction, and lack of adherence to physicians' recommendations occur in the United States, which is one of the wealthiest nations in the world by gross domestic product (GDP) but where citizens do not necessarily have access to quality health care.²³ On the whole, Americans receive only half of the appropriate care specified by current medical stan-

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dards.^{24,25} Public health resources suggest that even this level may be inflated, simply because access to health care is not equally distributed across the socioeconomic spectrum, among ethnicities, races, nationalities, or even across geographic areas.^{24,26-32} Over 40 million Americans lack any type of health insurance, and that number is projected to grow over the coming years.^{33,34} Furthermore, the disparity in the delivery of health care and the inability of divergent cultures to comprehend health care information compound this enormous problem.³⁵ An example of this is the difference both in the amount of interview time and quality of the time that physicians spend with patients of color versus Caucasians, which have been documented in several studies.^{21,27} Another example of health care disparity can be found among those currently receiving standard-of-care, highly active retroviral treatment for AIDS/HIV, where people of color have significantly higher mortality rates and shorter periods of survival than Caucasians.³⁶ Simply providing access to care does not appear to bridge cultural, racial, and socioeconomic gaps.^{37,38}

Clearly, the case has been made that the health care system is at a crossroad of great challenge even in developed nations, like the United States, where health care expenditures, as a portion of the GDP have steadily risen over recent decades.²³ What is needed is not just more money thrown at health care, but money, which often equates to time, has to be more effectively used. A link between positive health outcomes and patient satisfaction has been coupled to physician awareness, empathy, and responsiveness.³⁹⁻⁴¹

Although technical competency and knowledge are critical, providers of health care must communicate efficaciously with an increasingly diverse patient population about issues and problems that may be personally or socially challenging to the clinicians themselves. Therefore, one would expect that interpersonal exchanges need to be empathic, easily understood, culturally competent, and compassionate. Research has repeatedly shown that core professional communication skill sets and behaviors can be taught through recognized pedagogies.^{42,43} However, despite compelling reports in the literature, medical and health care training programs primarily rely on classroom or laboratory education for the mastery of technical skills and

internships, with observation by preceptors, for mastery of clinical and interpersonal competencies. Little, if any, time is set aside for the specific acquisition of intercultural, interpersonal, and ethical decision-making skills.^{38,44}

We have thus far identified some of the psychosocial and logistical challenges currently facing the health care community. In addition, we have recognized a need to address current educational deficits with well-designed curricular solutions. The qualitative tool used in this project was developed to investigate the hypothesis that naive experience, without specific curricular interventions, may not increase perceived comfort or competency among health care students.^{44,45}

Methods

In Spring 2007, a survey was developed and disseminated to all third- and fourth-year students at the Illinois College of Optometry (ICO) via e-mail, during the second week of that academic term, with one follow-up request 3 weeks later. The instrument used was an Internet-based

Zoomerang (San Francisco, CA) survey to ensure anonymity of responses. An introductory paragraph accompanied the actual survey, which described the purpose of the study, explained implied informed consent, provided basic instructions, assured respondents of the optional nature of participation, and promised strict confidentiality of the data gathered. Demographic data, including age ranges, genders, ethnicities, and sexual orientations of participants, were gathered (Tables 1-4). The survey consisted of 15 statements that responders were asked to rate along a Likert scale about the perceived adequacy of their clinical interpersonal training, covering the areas of experience, competency, and desire for further professional training in this area (Appendix A). A selection of 1 meant *completely agrees with the statement*, 2 meant *mostly agree*, 3 meant *somewhat agree*, 4 meant *slightly disagree*, 5 meant *mostly disagree*, and 6 meant *completely disagree*. The final question allowed respondents to provide subjective commentary about their training or the importance of this topical area.

Table 1
Race/Ethnicity of Study Participants

Class	Ethnicity	Class Demographics		Total
		Survey	Subject Pool	
Fourth Year	White	38	87	125
	Hispanic	1	2	3
	Asian	6	29	35
	Black	1	4	5
	American Indian or Alaskan Native	0	3	3
	Nonresident Alien (International Student)	0	21	21
	Total	46	146	192
Third Year	White	64	84	148
	Hispanic	17	35	52
	Asian	2	5	7
	Black	0	1	1
	American Indian or Alaskan Native	1	25	26
	Nonresident Alien (International Student)	4	0	4
	Total	88	150	238

Table 2
Gender Distribution of Study Participants

Class	Gender	Class Demographics		Total
		Survey	Subject Pool	
Fourth Year	Male	11	52	63
	Female	35	94	129
	Total	46	146	192
Third Year	Male	25	45	70
	Female	63	105	168
	Total	88	150	238

Table 3
Age Distribution of Study Participants

Class			Class Demographics		Total
			Survey	Subject Pool	
Fourth Year	Grouped Age	21-24	4	1	5
		25-28	36	114	150
		29-32	6	26	32
		33-36	0	5	5
	Total		46	146	192
Third Year	Grouped Age	21-24	13	7	20
		25-28	64	122	186
		29-32	8	15	23
		33-36	1	4	5
		>36	2	2	4
	Total		88	150	238

There were 296 requests sent out (146 third-year students and 150 fourth-year students). Of 144 surveys that were electronically opened with responses initiated, 10 surveys were eliminated due to incomplete data, leaving 134 complete surveys. Eighty-eight respondents were third-year students and 46 were fourth-year students. Tables 1 through 4 reveal the demographic information from the completed surveys, including gender. The majority of respondents were female, Caucasian, and 25–28 years of age. The demographics for each of these academic classes were obtained from the ICO Registrars' Office. The differences between the demographic numbers for the actual class and the demographic numbers of respondents from each class can be seen in the tables. With regard to the actual responses to survey questions, percentages for each response category were calculated for both classes, and *p*-values for statistical significance of the differences were calculated where appropriate, using SPSS 16.0 software.

Results

The respondents to the survey included 88 third-year and 46 fourth-year students from ICO. The makeup of the participant pool and those who responded are reflected in Tables 1–4. The demographic distribution of the respondents compared with the overall composition of the third- and fourth-year classes revealed several differences. The overall representation of female respondents was 76.1% for third-year students and 71.6% for fourth-year students, with an overall prevalence of 76.2%. The total student

body was 64.4% female in the third-year class, 70.0% in the fourth-year class, and 67.2% overall. Although more women than men responded, no statistical significant difference existed between the groups.

The age distribution reflected a preponderance of participants in the 25–28-year-old group in both years of students. This reflects the larger number of optometry students who fall in this age group. There was a statistically significant difference between the age distribution of respondents between the third-year participants and the overall third-year class. This difference was not found in the group of fourth-year participants. Concerning the racial/ethnic demographic compositions of the two classes versus the composition of respondents, although the data appeared to show a difference in the breakdown of race/ethnicity, the results could not be compared with the overall demographics of the two

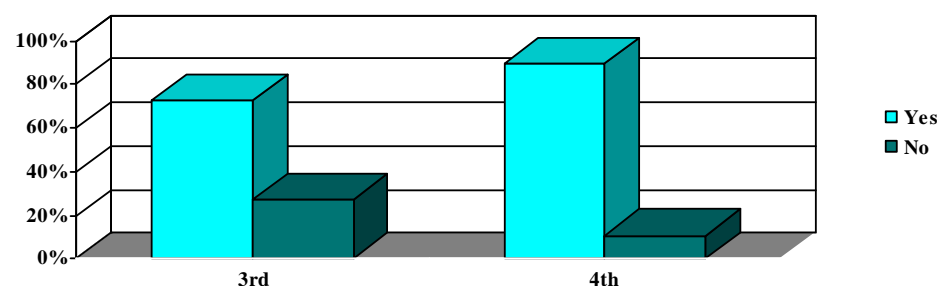
Table 4
Response to Sexual Orientation by Study Participants

	Third Year	Fourth Year
Heterosexual	87	45
Bisexual	1	1
Total	88	46

classes because the college registrar categorized students by immigration status instead by race/ethnicity for students who were not U.S. residents. The last demographic question requested the respondents to reveal their sexual orientation. In each class of students, only 1 responded that they were bisexual, no one indicated a homosexual orientation, and all of the remaining participants indicated heterosexual orientation. No comparison data are available for entire classes.

The next section of the survey was designed to investigate students' experiences. The experience statements of the survey elicited predictable and logical results based on the students' clinical exposure and academic ranks. For example, the majority of respondents reported having encountered patients who were experiencing clinically significant psychological problems. Figure 1 displays the results by class. The next question looked at interaction with patients who have been victims of domestic abuse. The data showed that 25% of third-year students reported having encountered victims of abuse, whereas 37% of the fourth-year students reported this, which is statistically different (Figure 2).

Figure 1
"I have professionally encountered patients who have difficulty participating in an optometric exam because they suffer from psychological problems."



**p* < .05, significant difference.

The next grouping of questions investigated the students' feelings of comfort, competency, and preparedness to deal with patients who have sensitive biosocial issues. When analyzing the results for the competency statements for various psychosocial scenarios, a typical pattern emerged, showing curves with peaks centered around *slightly agree* and *mostly agree* and limited spread of responses. Figures 3–14 reflect the frequency distribution of the responses on the survey by question and class. Comparison of the two classes showed statistically significant differences on the following statements: "I feel I have adequate knowledge of ocular and systemic manifestations pertinent to HIV, HPV, chlamydia, as well as other sexually transmitted disease" ($r=-.421, p<0.05$); "I feel confident discussing sexually transmitted disease with my patients" ($r=.195, p<0.05$); and "I am aware of the counseling services that are available to IEI patients" ($r=.246, p<0.05$). With regard to the statement about perceived benefit from further training, the overwhelming majority of both classes responded affirmatively to a nearly equal degree (Figure 15).

The last question was open ended, requesting that the respondents comment on whether they felt that ICO had prepared them to deal with patients with psychosocial issues. Some responses confirmed the hypothesis about frustration with present levels of preparation, whereas others noted a desire for further training, and others still expressed confusion about the clinical relevance of some statements. Appendix B presents several of the qualitative responses.

Discussion

The first section of the survey results to be analyzed were the responses to statements about clinical exposure or experience. The responses for these items represented a positive result in that many students felt they had encountered patients who were significantly impacted by psychological stress. However, relatively few participants reported exposure to patients impacted by abuse or neglect, a fact unlikely to be valid given the nature of the patient demographics at ICO.⁴⁶⁻⁴⁸ Perhaps students are not adequately informed about the myriad effects of abuse, they are not intellectually or empathically responsive to the cases, they do not have recollection of their

Figure 2
"I have professionally encountered patients that are victims of domestic abuse, such as child, elderly, or spousal abuse."

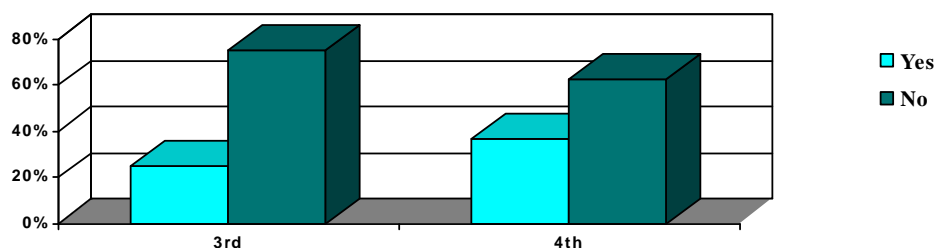


Figure 3
"When dealing with patients challenged by abuse, I feel comfortable addressing these issues."

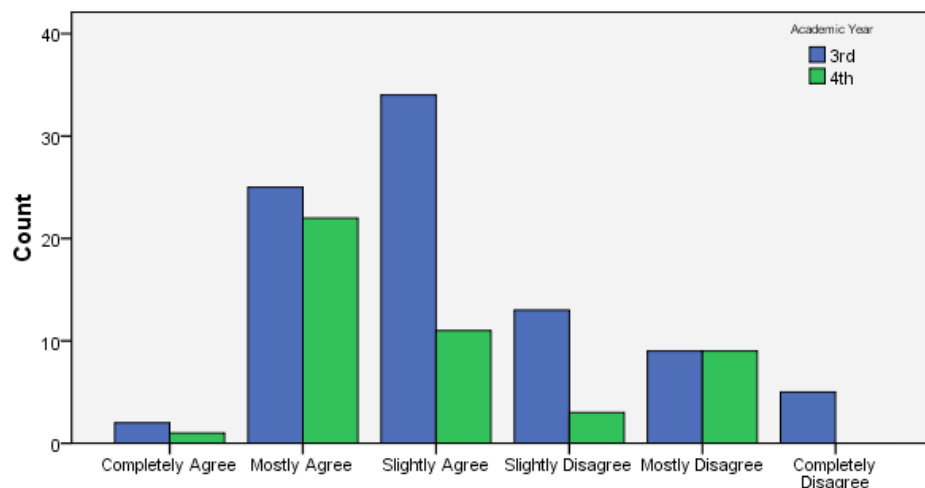


Figure 4
"I feel I have adequate knowledge of ocular and systemic manifestations pertinent to HIV, HPV, Chlamydia, as well as other sexually transmitted diseases."

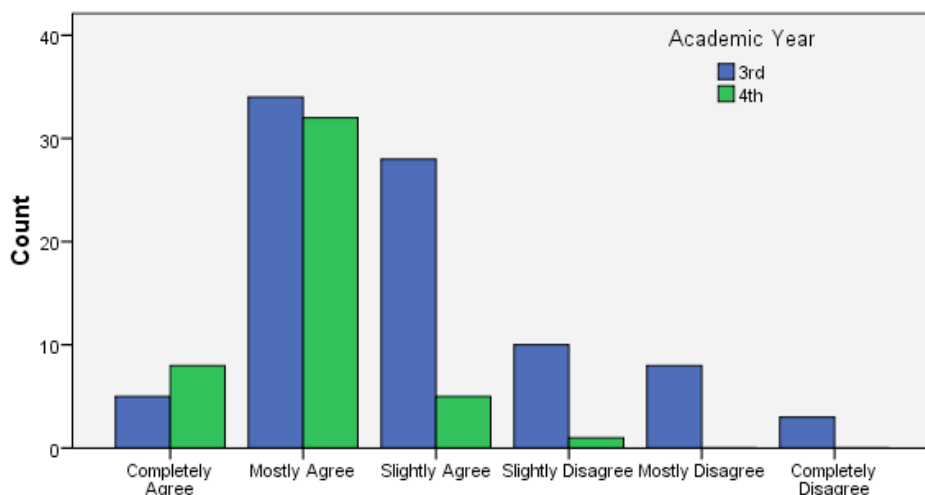


Figure 5 "I feel confident discussing sexually transmitted disease with my patients."

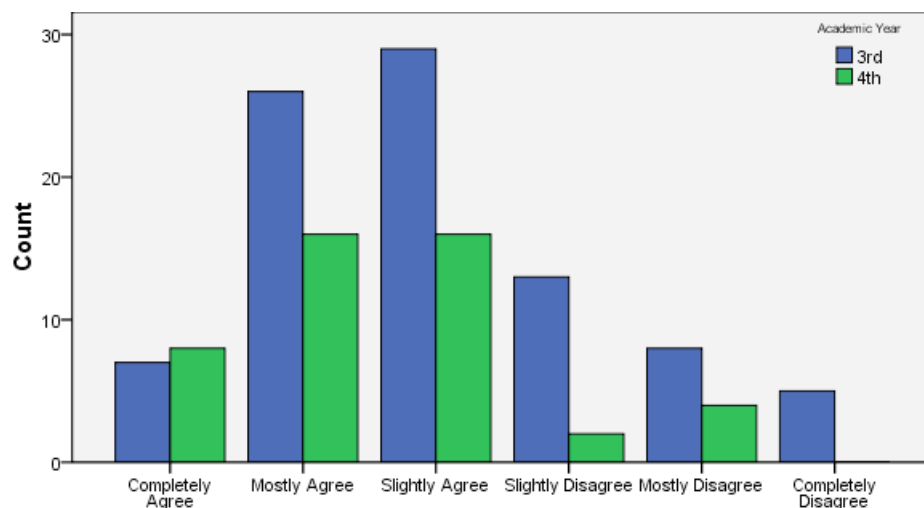


Figure 6 "I feel comfortable when speaking to minors about drugs and alcohol."

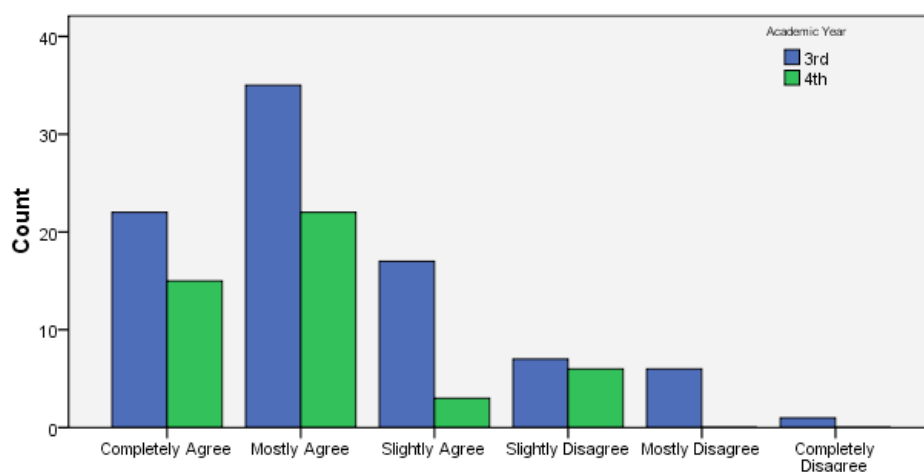
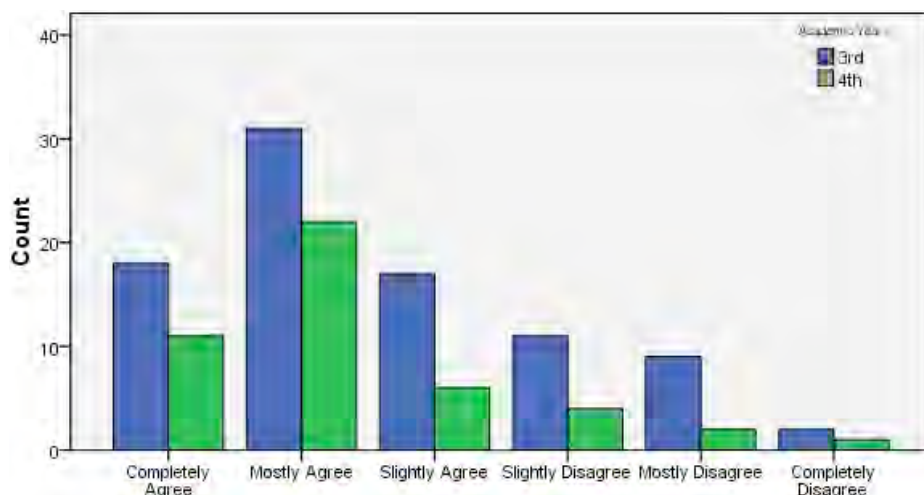


Figure 7 "I am comfortable discussing medical/emotional complications that may result from obesity."



past exposure, or a combination of these factors. Even more concerning is the finding that little gain in experience with these at-risk populations was reported during the fourth and most intensive year of clinical care. The training program at this institution sends the majority of students to locations off campus and into "real-life" communities for their final year of clinical experience, in the hope of enriching their professional training. Are the students less aware of their patients who have been affected by abuse? Are the students less willing to report these situations to their preceptors? Are these issues not being prioritized by preceptors as these issues relate to patient interaction and social vulnerability?

As a matter of fact, despite the increased multiplicity of patient encounters achieved during the fourth year of clinical training, the respondents in the survey showed very modest gains in confidence about their interpersonal skills across an array of potentially socially challenging scenarios. Concerning the issue of patients potentially impacted by their sexual orientation, fourth-year students actually expressed less confidence. This was also found in their perceived awareness about psychosocial and case management resources for patients. These results support the findings of Robert Klitzman and other noted authors of medical education literature that current medical education actually tends to foster cynicism, decreased expressions of compassion, and internal insensitivity as medical students progress through the programs.^{46,47,49,50} Much of this has to do with the need to master expanding amounts of knowledge while learning professionalism through observation versus active, deliberate communication. A very similar phenomenon we found could have been a result of the effect of students' exposures to independent, less structurally guided learning environments. In addition, changes in the curriculum instruction may have occurred that had negatively impacted students' abilities to grow along certain professional dimensions. Given the important position that professional communication and ethical decision making occupy in the development of efficacious clinicians, our findings suggest a potential pitfall in the clinical education process.

More data should be collected from additional administrations of the sur-

vey to look for specific trends and patterns of responses before clear implications can be drawn from these results. Both the response patterns as well as the demographics of those choosing to participate in such a survey must be studied carefully over time to yield more useful results. However, some important facts demonstrated by both our initial survey results as well as by a review of health care education literature—are very clear. The results of simply increasing experience via passive learning models do not yield impressive results in growth of interpersonal skills, empathy, and professionalism of students over time in health care disciplines.^{50,51} Fortunately, there is also evidence to suggest that specific targeted and structured approaches dedicated to the improvement of empathy and other interpersonal or ethical skills can yield demonstrable improvements in physician performance and patient satisfaction.⁵¹

Studies have proven that patients who are more satisfied by the interpersonal relationships with their physicians are less likely to engage in litigious behavior, despite the outcomes of their treatment.^{49,52} Improvements in these physician skills could potentially relieve some of the financial burden on an already stressed health care system through this outcome alone. Investigations relating to care for chronic conditions, such as cancer, show that there are real and tangible costs for poor communication. Additional lines of consultation and multiple, uncoordinated attempts at therapy have been traced back to poor communication with initial providers.⁵³⁻⁵⁵ Consequently, improved attention to specific patient concerns and relief of psychological distress could decrease the need for unnecessary medical interventions, further easing both financial and existential burdens on the health care system. If nothing else, there are always the moral and ethical considerations behind doing a better job of helping people.

We know that the health care system is currently facing a number of internal and external challenges; we know that outcomes have been suboptimal despite advancing technology; we know that better patient-practitioner relationships relate to improved outcomes; and we know that intentional, interpersonal technology applied to health care training programs

Figure 8 “I am comfortable in dealing with pregnant patients who are under the age of consent.”

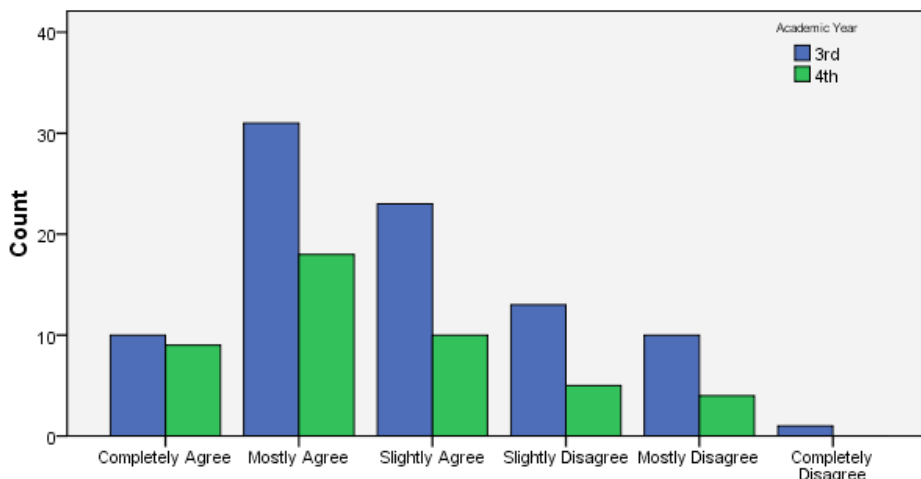


Figure 9 “I feel comfortable in discussing issues such as depression or anxiety with my patients.”

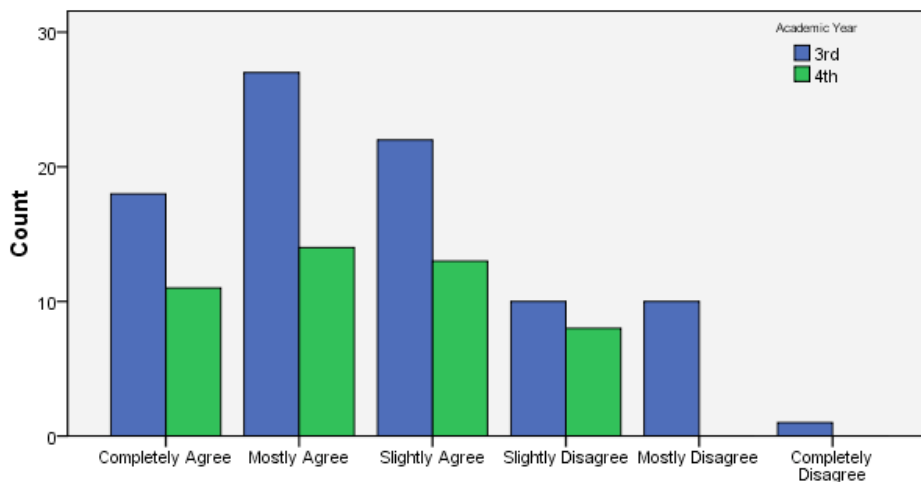


Figure 10 “I am comfortable communicating with patients who suffer from potentially life-threatening illnesses.”

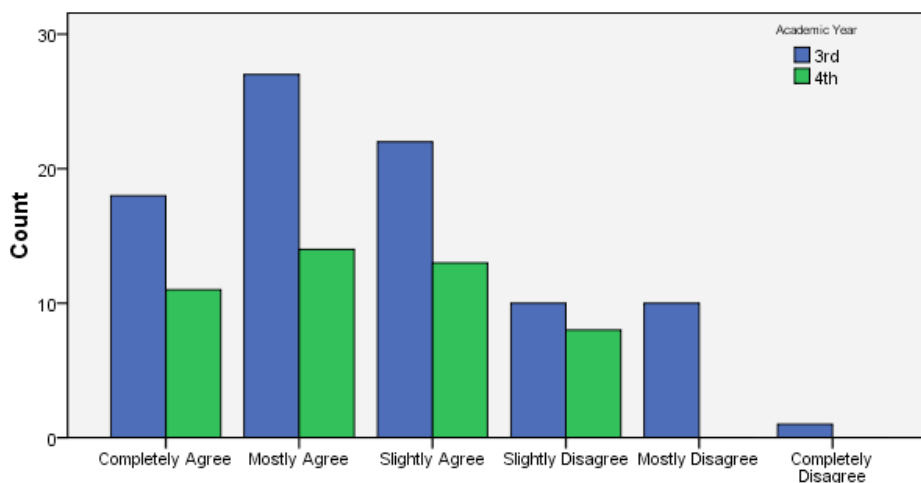


Figure 11 "I am aware of the counseling services that are available to IEI patients."

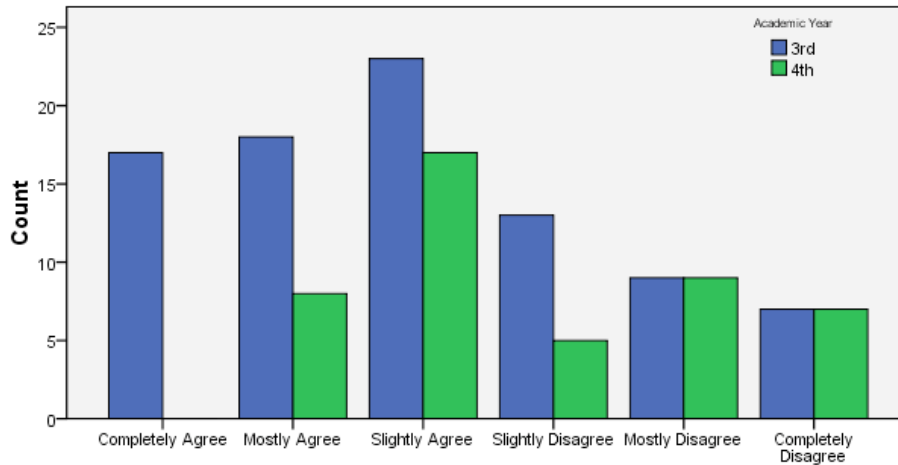


Figure 12 "I feel that ICO has prepared me to adequately recognize patients struggling with biosocial issues, such as, neglect, or recent death of a family member."

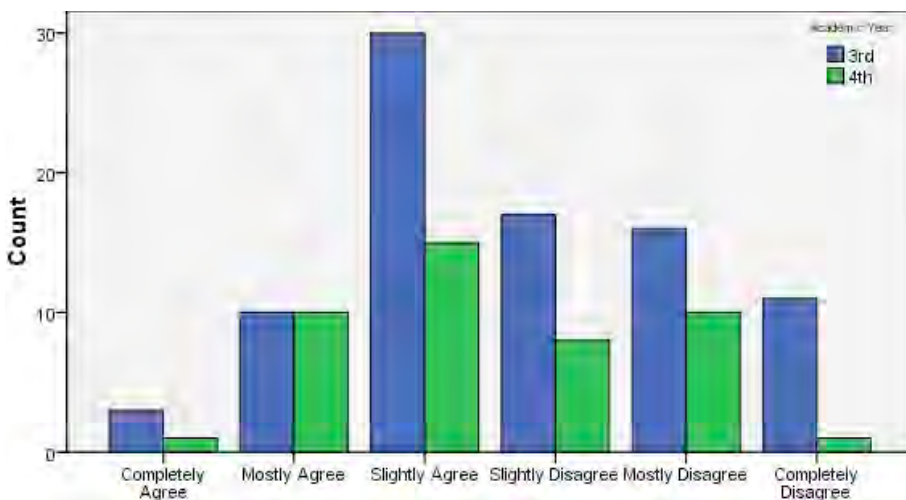
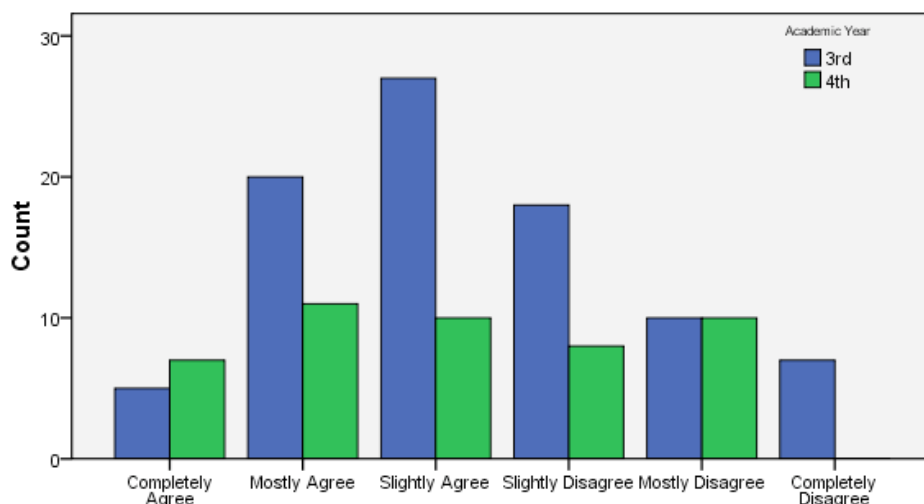


Figure 13 "I feel comfortable discussing medical challenges faced by patients who are part of the homosexual community."



can help to achieve these goals.⁵⁶ We now have several research-validated tools to measure the initial conditions and resulting effects of these interventions, such as the Consultation and Relational Empathy Measure and the Consultation Quality Index.^{57,58} Instruments such as these can help to bridge the current gap between scientific endeavor and the less concrete information found in qualitative research, such as this study, that prompt compelling research questions. There is no reason that institutions of health care education cannot begin to formulate important questions, generate hypothetical clinical associations, and initiate more strident qualitative and quantitative studies of these areas. The needs are robust and the tools are increasingly available.

Whenever analyzing and assigning significance to information acquired from survey data, a number of potential confounding variables must be considered. The first variable uncovered in this project is related to the demographic representation of the student respondents. The preponderance of women and Caucasians is characteristic of the student body at large but not the general population. The almost 100% heterosexual response rate is far out of synchronization with the general population of the United States.^{44,45,59-61} The negative effects of population misrepresentation on professional school campuses have become clear to health care educators. Inequalities in the perceptions of quality of care by patients exist between the genders and across ethnic divides.^{62,63} For example, female clinicians are generally ranked higher in empathy, interrogative, and shared decision-making skills versus the more authoritarian approach of their male counterparts. These perceived differences in communication priorities are received differently by males and females those receiving care.⁶⁰ In addition, as shown by one of the authors in a recent survey of optometry school faculty, female clinician-educators tend to regard communication skills as more important.⁶⁴ Without diverse populations actively participating in health education programs to provide dialogue and translation, how can such inequalities ever be addressed in the development of future or even present clinicians?

In several recent articles, the immense value of maintaining strong diversity among students and faculty

has been cited as being crucial to their ethical development, interpersonal effectiveness, and cultural competency.⁶⁵⁻⁷² We logically assume that the dialogue promoted by representation of multiple cultures in service-oriented, professional training programs has a large impact on the effectiveness of practitioners who will later be serving these cultures. Furthermore, we know from researchers such as Whitla et al and Wear,^{70,73} that effectively reaching into communities at risk requires building trustworthy relationships with their members as well as promoting insurgent multiculturalism within the helping professions. *Insurgent multiculturalism* is a term that has been applied to the process of scrutinizing the factors—biologic, psychological, socioeconomic, and perceived inequalities of power—that place certain cultures at risk for disease, potentiate the gap in access to care, and possibly contribute to disparate health outcomes.⁷⁴⁻⁷⁶

The demographic data collected by the registrar for the ICO students was categorized differently from the current study and, thus did not allow for a direct comparison. We were expecting a variation in responses with differing cultural norms, which highlights potential intrapsychic and interpersonal differences. It was apparent that the demographic questions might not have revealed all cultural influences, such as impact of marital status, primary language, immigrant status, religious belief, and specific ethnic categories.

Another potential confounding factor associated with impacting survey data collection is the possibility of perceived negative consequences for survey participants, which can never be totally allayed, despite ardent reassurances. In the particular case of sexual orientation, the college does not collect these data concerning its students, nor does the U.S. census. It is impossible to know if the gay and lesbian communities were present within the campus but chose not to respond, or if they were culturally underrepresented in the institution. Certainly, given the presence of several potentially sexually transmitted diseases or disease risks relevant to sexuality that the health community is now facing, the lack of representation may well have negative consequences for health care outcomes.⁵⁰ This study deals with several topics that may be perceived as disturbing or uncomfortable to clini-

Figure 14 “I feel comfortable discussing emotional challenges associated with patients struggling with sexual orientation.”

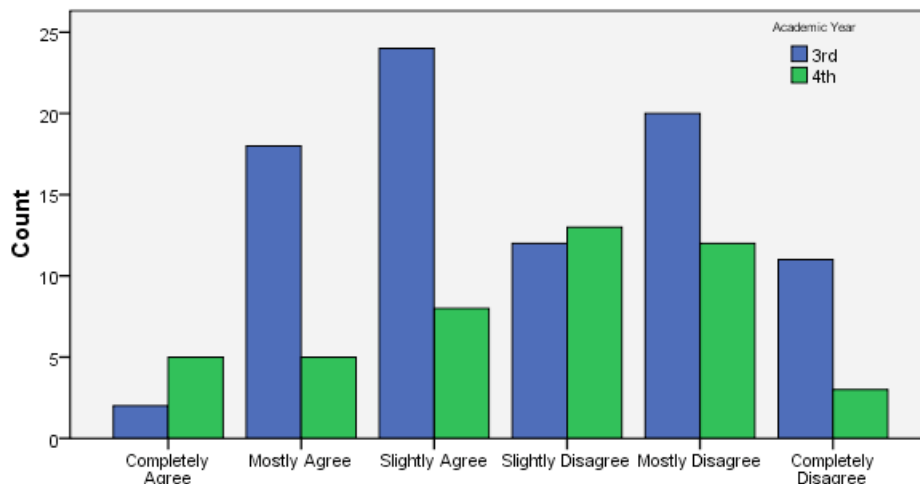
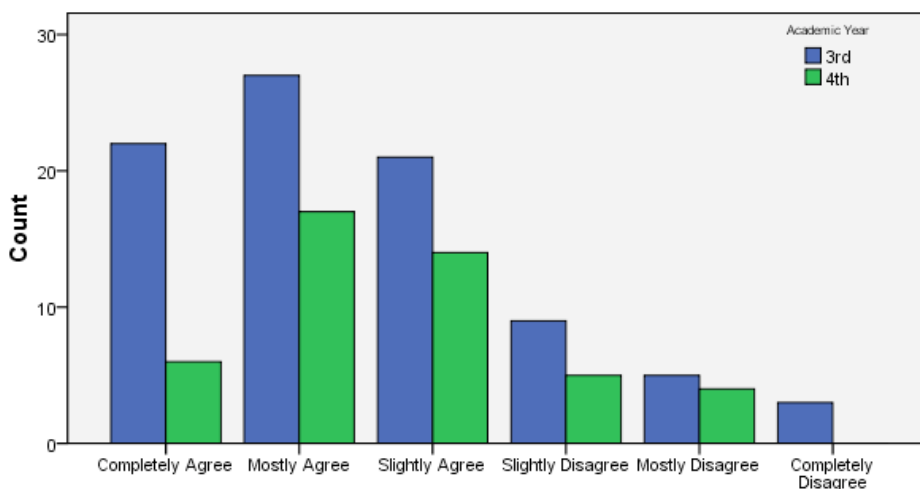


Figure 15 “I feel that I would benefit from further didactic, role playing or other educational experiences that focus on providing eye care for patients dealing with socially sensitive or difficult issues.”



cians. The primary goal of this effort was to highlight the weaknesses of the current educational system in addressing the issue of personal discomfort when delivering professional, appropriate care. We want to promote the development of educational tools that allow comfort and clinical competency, without accompanying personal distress.

Furthermore, cultural diversity and other psychosocial barriers provide additional challenges that must be bridged via cultural competency, to reduce the current disparities in health and health care throughout the community mosaic.³⁴ The results from this survey (albeit early in the stages of sys-

tematic inquiry) suggest questions about current curricula deficiencies and point toward the potential need for both more focused, advanced training and applied research. It is our intention to repeat this survey over time and expand the participant pool beyond ICO students to include faculty and respondents from other optometric institutions. This pilot survey will likely be expanded and validated into a more comprehensive tool that is suitable for tracking both student and faculty development in related areas of professional growth.

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Appendix A

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- When dealing with patients challenged by abuse, I feel comfortable addressing these issues.
 - I feel I have adequate knowledge of ocular and systemic manifestations pertinent to HIV, HPV, chlamydia, as well as, other sexually transmitted disease.
 - I feel confident discussing sexually transmitted disease with my patients.
 - I feel comfortable when speaking to minors about drugs and alcohol.
 - I am comfortable discussing medical/emotional complications that may result from obesity.
 - I am comfortable in dealing with pregnant patients who are under the age of consent.
 - I feel comfortable in discussing issues such as depression or anxiety with my patients.
 - I am comfortable communicating with patients who suffer from potentially life-threatening illnesses.
 - I am aware of the counseling services that are available to IEI^a patients.
 - I feel that ICO has prepared me to adequately recognize patients struggling with biosocial issues such as, neglect, or recent death of a family member.
 - I feel comfortable discussing medical challenges faced by patients who are part of the homosexual community.
 - I feel comfortable discussing emotional challenges associated with patients struggling with sexual orientation.
 - I feel that I would benefit from further didactic, role playing or other educational experiences that focus on providing eye care for patients dealing with socially sensitive or difficult issues.

^aIEI = Illinois Eye Institute.

Appendix B

I feel that my comfort level in dealing with patients suggested in the above study has come from my personal experience... I do not feel that ICO has taught me anything new as to how to communicate and interact with these patients.
I do not feel that discussing emotional difficulties related to sexual orientation is within an optometrist's scope of practice.
Thank you for addressing these issues. I often feel that in situations like these I don't know what to say to people, even though I sympathize with them. I think it would be great if ICO could incorporate a communication class into the curriculum.
I feel that we could benefit from some of this further help on these situations. I don't feel that we know how to CONFRONT people about things that we are not comfortable.
I think the addition of a 'psych' class at ICO has potential benefits, but I don't think it should replace existing classes. Also, I think one's comfort level with the issues noted in the survey would not change all that much after having a course ...I believe one needs experience with that field
I do not feel it is an eye doctor's role to counsel a patient suffering with sexual orientation identity problems. ... Being able to communicate with patients regarding disease processes that are due to sexually transmitted disease is one thing, but addressing their sexuality has no role. I have not and do not expect to deal with a situation when the patient's sexual preference is a concern. The patient either has HIV or not, has syphilis or not, has the clap or not. How/why they got it has no role in treatment.
Great survey! I feel these issues, topics, ideas are not conveyed that thoroughly to student clinicians.
I don't think ICO has educated our students on how to communicate with patients.
I feel that role playing is a great way to learn and ...would be beneficial if some docs shared experiences they had or how they would communicate difficult issues with their pts.
I feel like it is important to know what resources are available to our patients for further help with their social issues, however for those issues I feel that another mental health care professional is better educated and more comfortable to deal with those issues. I think it is important that we direct our patients to those professionals but I do not feel like we should deal directly with those issues in the scope of our profession.
Most of the issues of this survey are common sense. In order to be a good health care provider you should develop your own comfort zone for discussing issues mentioned in this survey.
I feel comfortable discussing emotional challenges associated with patients struggling with sexual orientation. I have difficulty understanding how this question would ever play a role in the optometric exam or scope of practice.