HOW EFFECTIVELY DOES MEDICAL CARE ACHIEVE ITS PURPOSES? EVALUATION OF PEER-REVIEWED LITERATURE IN OPHTHALMOLOGY RELATED TO WELLNESS

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ABSTRACT

Purpose: To get an idea of whether the issue of what makes people healthier is studied in ophthalmology by determining the proportion of articles dealing with that subject.

Methods: Prospective review of all articles published in 3 consecutive issues of 7 peer-reviewed ophthalmology journals, using a grading system in which *A* signified an article that clearly dealt with a subject expected to have an impact on health or quality of life, or that considered health or quality of life itself directly; *B* indicated an article similar to *A*, but not directly concerned with the issue of health; *C* signified an article similar to *B* but more distantly related to health or quality of life; and *D* was the grade given when there was no relationship at all to health or quality of life. Grading was done independently by 3 graders. A literature review on the subject was also performed.

Results: Thirty-three articles received a grade of *A*, 229 of *B*, 740 of *C*, and 81 of *D*. There were more articles that had no relationship at all to health or quality of life than there were articles dealing directly with those issues.

Conclusions: On the basis of a review of the literature and of over 1000 articles, ophthalmologists do not appear to give much priority to issues of quality of life or health. How validly these conclusions can be generalized to general clinicians is not known.

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INTRODUCTION

This report addresses one small aspect of the broad issue of "the purposes of medical care." The immediate response to the issue would probably be that it is primarily to benefit patients (that is, those who are ill or may become ill) both individually and in groups. Even a cursory examination of the current activities related to "health care," however, suggests that this conclusion is too simple and, in fact, may not be valid. Consideration of the whole field of health care is appropriate and important, including the impact of industry, government, and cultural characteristics. However, this report is more narrowly focused on physicians, specifically ophthalmologists.

The basic underlying question this report is designed to discuss is, Why do physicians do what they do? That question might provoke the question, Why would anybody be interested in why physicians do what they do? The answer to that would seem self-evident. Specifically, health and disease are important aspects of life for all creatures. Most people appear to want to be healthy and to avoid being diseased. Those who have good health tend to have a better quality of life than those who are diseased.[1-5] Those who are healthy are generally more productive and predisposed toward a healthier socioeconomic condition[6]. Disraeli claimed that "The good health of its citizenry is the primary security of a nation." Evans and colleagues[7] found that of visually impaired older people, 13.5% were depressed, in comparison to 4.6% of those with good vision. There are also significant costs associated with illness. Javitt and colleagues[8] reported that "At each level of vision loss, those progressing from a presumably normal state of baseline incurred higher Medicare costs than those with that level of vision lost at baseline. Any degree of progressive vision loss was associated with an increased risk of depression, injury, skilled nursing facility utilization, and long-term care facility admission. . . blindness and vision loss are associated with $2.14 billion in 2003 non-eye-related medical costs. Clearly preventing visual loss is not only a medical imperative, but also an economic benefit."

Although the major factors influencing health and disease are the individual's constitutional factors (such as genotype) and the socioeconomic conditions that influence the individual's development, physicians do play a role. The relative importance of that role differs from culture to culture. Understanding what physicians do, and how those actions affect the health and disease of individuals and communities, appears to be an appropriate area of concern for the medical profession.

A study directly addressing the issue of why physicians do what they do presents methodological difficulties. It would involve deciphering motivations that may be hard to assess, and perhaps even unknown to the physicians themselves. Surveys and studies in this regard may, however, provide clues or perhaps even important information. Relative prioritization of the motives would require a highly sophisticated study. Given the potential importance of answering the question, it may well be justified.

Another approach is to evaluate what physicians—specifically, for purposes of this report, ophthalmologists—write about in refereed journals. That is the immediate methodology used here, though it is recognized that this is but an indirect way of visualizing the entire subject.

METHODS AND RESULTS

Three consecutive issues of 7 different ophthalmic journals were reviewed: *American Journal of Ophthalmology, Eye, Journal of the*

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American Association for Pediatric Ophthalmology and Strabismus, Ophthalmic Surgery Lasers & Imaging, Ophthalmology, Journal of Cataract & Refractive Surgery, and *Journal of Neuro-Ophthalmology. The New England Journal of Medicine* and *The Journal of the American Medical Association* were also reviewed.

GRADING

Three different reviewers graded all "original articles" from each of the 3 issues according to a 4-point scale. This scale was based on prioritizing the articles according to the following definitions:

Grade *A.* The article studied an issue that was directly related to well-being. This required some estimate of quality of life, or at least of symptoms of function, or some other direct measure of health and disease. An example is the article by Beauchamp and colleagues[9] in which they demonstrated that strabismus surgery was shown to be of value in adults. The investigators used the standard cost-utility analysis method in which the cost of medical care is considered in relation to the gain in quality-adjusted life years. The utility of the treatment was measured through interviews employing a time-tradeoff question (seeking to estimate the portion of life expectancy a patient would be willing to trade for being rid of a disease or associated effect). The investigators found the estimated cost to be around $4000 per case, and a significant improvement in utility, specifically from 0.85 quality-adjusted life years preoperatively to 0.96 postoperatively (P = .00008). Based on a mean life expectancy of 36 years and discounting outcome as in cost by 3% annually, the result was a mean value gain of 2.61 quality-adjusted life years after surgery and a cost-utility for strabismus surgery of $1632 per quality-adjusted life year. Because treatments less than $50,000 per quality-adjusted life year are generally considered very cost-effective in the United States, the investigators demonstrated that the strabismus surgery in adults is a highly cost-effective procedure.

Other studies that would be graded *A* would include those in which a treatment was specifically considered in terms of its effect on quality of life as measured by one of the standard instruments. For a study to be graded as *A*, then, usually required a direct consideration of the usefulness of the issue at hand as related to well-being. Even though visual acuity is not a direct measure of well-being, there are a sufficiently large number of studies showing that visual acuity affects well-being so that reports involving careful consideration of visual acuity also frequently will be graded *A*. For example, a study of treatment for macular degeneration that showed a definite improvement in visual acuity in the treated patients in comparison with no such improvement in untreated patients would have been graded as *A*.

Grade *B*. This was applied to those articles in which the report dealt with a test, theory, treatment, or concept that seemed likely to have an effect on well-being, but in which that effect was not specifically studied. A report that showed, for example, that a topical medication lowered intraocular pressure highly effectively would be considered a *B* rather than an *A*. Although there is an assumption that lowering intraocular pressure will result in better control of a person's glaucoma, and consequently preserve vision, that assumption is not directly addressed in an article solely limited to a study on the effect on intraocular pressure. It is quite possible that the pressure-lowering effect may be associated with other aspects of treatment that naturally result in a decrease in the patient's quality of life. Therefore, even though there is good evidence that shows that lowering intraocular pressure may be an effective treatment for glaucoma, articles not specifically looking at whether there is any effect of lowering intraocular pressure on the subjective or objective well-being of the patients were not considered in category *A*, but were rather graded with a *B*.

Grade *C*. A grade of *C* was applied to those reports where there appeared to be a definite potential for affecting the well-being of people, but the connection was more distant than would be the case for a *B* grade. Thus, a study demonstrating that a particular molecular biological marker was often associated with a more serious course of macular degeneration would be graded as *C*. Case reports describing findings that could improve diagnosis, or suggest particular types of treatment, would be graded as *C*, but a case report in which a person was found to have a definite deterioration or improvement in quality of life would be considered an *A*.

Grade *D*. A grade of *D* was given to articles that seemed unrelated to the well-being of patients. An example of this would be a report on factors predisposing to litigation. It was not the type of study, then, that determined whether it would be graded as an *A*, *B*, *C*, or *D*, but rather whether the issue at hand was considered to affect the functional ability or the sense of well-being of the person or the group. An *A* grade was limited to those situations in which those issues were specifically addressed. Where none of the criteria that led to a grade of *A*, *B*, or *C* could be identified, the report was considered a *D*.

The articles were graded independently by the 3 observers. The frequency of the individual grades in each journal and overall was tabulated (Table 1). Interobserver variability was calculated using kappa values (Table 2).

TABLE 1. GRADES ASSIGNED TO 1083 ARTICLES REVIEWED IN SEVEN OPHTHALMIC JOURNALS BY THREE OBSERVERS

GRADE ASSIGNED	NO. OF ARTICLES
A. Related to quality of life or function	33
B. Involved an issue presumably that could affect quality of life or function	229
C. Involved an issue that possibly could affect quality of life or function	740
D. No apparent relationship to well-being of patients	81
P value	<.0001

TABLE 2. INTEROBSERVER VARIABLITY AMONG SEVEN JOURNALS

JOURNAL	KAPPA VALUE
American Journal of Ophthalmology	0.66082
Eye	0.56281
Journal of the American Association for Pediatric Ophthalmology and Strabismus	0.67007
Journal of Cataract & Refractive Surgery	0.56443
Journal of Neuro-Ophthalmology	0.55395
Ophthalmic Surgery Lasers & Imaging	0.74185
Ophthalmology	0.69990

LITERATURE SEARCH

Part 2 of the study attempted to address more broadly the issue of why physicians do what they do. A literature search was conducted using the keys phrases "physician motivation," "financial medical motivation," "motivations of medical profession," "incentives of medical profession," "physician influences," "career," "purpose," "practice patterns," and "physician compensation." The goal was to find articles dealing with the subject of why physicians actually did what they did.

First, 1083 refereed articles were reviewed from 7 ophthalmic journals. Additionally, a much smaller number were considered from *The New England Journal of Medicine, The Journal of the American Medical Association,* and one nonrefereed journal.

Second, we found a number of reports specifically dealing with motivation for career choices for medicine, the issue of "satisfaction," and studies about how physician compensation affects the delivery of care.[10-52] This last subject, while important, is not the primary focus of the current report. The evidence is clear that economic considerations are a major motivation for why physicians do what they do. It is not just chance, for example, that the number of image analysis tests ordered by physicians increased markedly immediately following the decision that such tests would be reimbursable both for facility fee and an interpretation fee. During the past 30 years it has become well documented that physicians using fee-for-service (where individual services are remunerated) offer their patients more services than physicians in a setting where compensation is not based on fee-for-service. This issue is, as mentioned, extremely important, but has been well covered elsewhere.[42-52]

Several reports have evaluated why students choose to become doctors.[10-12] One study, by Millan and colleagues,[11] found that most students had strong valuation of humanistic aspects of medicine. They felt a deep personal identification with the choice of their profession, a critical need for fulfillment in their careers, and conscious and unconscious desires to help people and be recognized for their usefulness. Female students were more sensitive and less imaginative than male students, who were more utilitarian and less grounded. Female students tended to present greater emotional maturity, whereas male students were more competitive and ambitious. Todisco and associates[18] found that a desire to help others "was the most important motivation for entering medical school, closely followed by the scientific nature and the intellectual challenge of the profession of medicine." Wierenga and colleagues[19] noted that the highest-rated motives for studying medicine were the opportunity for working with people and an interest in human biology. Males rated the social prestige/status benefits of being a physician significantly higher than females. Women students were more worried about dealing with the long hours involved in medical training than were their male counterparts. The authors conclude that there is a wide variety of motivations leading to the decision to become a physician.

There were few studies dealing with why physicians do what they do later in their careers. One study concerned factors influenced in a choice of specialty among medical students in Lebanon.[28] The most important factors were "intellectual opportunities," "match of personal interest and skills," and "helping and social responsibilities." Less important factors included "encouragement/role models," "clerkships and courses," and "residence issues." Those choosing general practice were interested in "diversity in diagnosis and treatment," and those opting for specialty practices included "working with new technology" to be important.[24,26,28,30]

As Miller and colleagues noted, "Variations in levels of motivation to learn among established general practitioners have received scant attention. . . . This study suggests that individual motivation is both complex and unstable in response to external factors. We draw attention to the possibility of motivation immaturity in recruits to general practice, the contribution of values, and the presence of demotivators." [29] The authors suggest that understanding better the motivational factors of physicians will assist in the continued learning process of general practitioners.

Several studies[32-40] have considered why physicians, more specifically general practitioners in the United Kingdom, are unhappy. The conclusions are that a large percentage feel undercompensated, unrespected, and not in control of how they provide care.

DISCUSSION

The most generic consideration for whether physician behavior is medically ethical is whether the behavior is in the best interest of the patient or, more broadly, in the best interest of patients. This aspect of medical ethics has been extensively discussed. The text by Pellegrino and Thomasma,[52] *For the Patient's Good: The Restoration of Beneficence in Healthcare,* deals with this in a thorough and penetrating way. The 3 classic aspects of medical ethics—autonomy, beneficence, and justice—deal with the patient's good. That is, however, an assumption.

The studies we reviewed, added to our own personal opinions, suggest that many students choose a career in medicine with the

goal of helping individuals, especially those who are ill. It seems certain, however, that this primary motivation is transformed both during medical school and later. Medical students considering what they wish to continue to do in their careers opt for fields that involve "a match of personal interest and skills" or "intellectual opportunities." Those interested in the subspecialties want a field in which they can work with new technologies. While "helping and social responsibility" continues to motivate some physicians, the importance of this as a driving force decreases. There are interesting differences between the motivations of those who go into primary care and between males and females. Based on the material sent to practicing physicians, the motivations clearly change. Among the most widely read journals are those dealing with medical economics and practice issues that appear to be largely or completely unrelated to "the best interest of the patient." Indeed, many of these specifically concern ways to capture the largest amount of charges possible.

One study showed that the major concern of residents graduating from US ophthalmology residency training programs was related to a failure to be instructed in the fields of practice management, interpersonal and communication skills, practice-based learning and improvement, and systems-based practice.[53]

The present report focuses narrowly on the issue of whether "the patient's good" is addressed in what is written in ophthalmic journals. The journals chosen are those that publish articles primarily directed toward practicing ophthalmologists, in comparison to those largely concerned with research, such as *Investigative Ophthalmology & Visual Science* and *Experimental Eye Research*. Although these and similar journals do report studies directly dealing with quality of life or functional ability, their primary concerns are more basic and more related to bench research. Selecting those for review would have necessarily skewed the results toward articles graded *C*, or perhaps even *D*.

We conclude that a small proportion of reports deal directly with quality of life or function related to vision, a slightly larger number with issues presumably related to patient well-being, most to matters fairly distantly related to the patient's good, and a small number seemingly unrelated to consideration of the well-being of patients. Clearly, development of knowledge requires passing through stages. However, the ultimate purpose of the knowledge deserves consideration. Is it, for example, for the well-being of the patient, the development of a strong curriculum vitae by the author, or financial reward? Who stands to benefit from the report, the diagnostic procedure, or the treatment? Is the beneficiary the doctor, the medical profession, the lawyer, the surgeon, the manager, the pharmaceutical company, the insurance company, the instrument maker, the researcher, the teacher, or the patient?

Studies of all kinds require some type of funding. The choices made by funding sources, then, have a major effect on the type of studies that are performed. Were a higher priority paid to investigations related to patient well-being, it appears certain that a greater proportion of investigations would deal directly with that subject.

The editorial decisions made by refereed journals relate to scientific design and methods. Clinical relevance may or may not be a consideration. Reports dealing with well-being and quality of life are difficult to perform and present scientifically because the issues are frequently amorphous and hard to measure.

Some of the many things physicians do in their professional lives are listed in Table 3. This list is clearly incomplete.

TABLE 3. PARTIAL LIST OF WHAT PHYSICIANS DO IN THEIR PROFESSIONAL LIVES

Acquire the educational skills necessary to apply to medical school
Apply to medical school
Persevere in their medical training through medical school and years following that
Examine patients
Diagnose patients
Treat patients
Obtain a license to practice
Obtain hospital privileges
Develop specialized skills in a particular subspecialty area
Decide which patients to care for
Decide how long to spend with patients
Decide who gets priority care
Decide when to start work in the morning, when to return home, and when to make themselves available professionally
Join the faculty of a teaching institution
Establish or join a partnership or a corporation
Advertise
Develop new technology or concepts
Prepare articles for publication
Publish articles
Teach
Perform research
Administer and manage a practice, a research operation, a development group, etc
Fundraise

Furthermore, it does not deal with the basic subject of this report, specifically *why* physicians do those things. Whereas there are many reports regarding activities such as medical teaching or office management, there are few considering why it is that physicians teach or manage. Presumably the answer would be the same as for virtually all other fields of human endeavor, specifically, that physicians do what they do in order to satisfy their own personal needs or desires. Two recent discussions of this matter are found in *How Doctors Think* by Jerome Groopman[54] and in commentary on the book by Richard Horton entitled *What's Wrong with Doctors?*[55] These authors come from quite different points of view, but both suggest that a deeper understanding of why doctors do what they do is important for patients if they are to get the best care possible.

Among the things included in Table 3 is one of the most fundamental things that physicians do, specifically, diagnose and treat patients or, more accurately, decide to treat or decide not to treat patients. Table 4 lists some of the reasons why physicians may elect to treat or not to treat. This study does not give information that allows deciding whether these reasons are valid or, assuming that they are all valid, putting them in order of priority. However, this review suggests quite strongly that "the patient's good" is not at the top of the list.

TABLE 4. PARTIAL LIST OF REASONS PHYSICIANS MAY DECIDE TO TREAT OR NOT TO TREAT PATIENTS

Why do patients get treated?

1. Because, in treating, the physician assumes control
2. Because patients have a finding associated with disease
3. Because patients have a disease
4. To prevent a finding from getting worse
5. Because physicians don't want to think that they missed treating something that needs to be treated (medicolegal)
6. In order to enroll patients in a study
7. Because the physician wants to try a new treatment
8. In order to receive a fee
9. Because patients want to be treated
10. Because patients are more likely to return if treated
11. To prevent patients from getting a disease
12. To prevent patients from developing a disability or to prevent an existing disability from worsening

What are the major reasons patients do not get treated?

1. Their physician does not realize that they are getting worse.
2. Their physician does not realize that treating them offers them their only hope.
3. The patients are in denial and do not want to face the reality that they are getting worse.
4. To treat the patient engages the physician as being responsible for helping the patient and therefore brings a responsibility to the physician that he or she may not want to assume.
5. The treatment carries risk and the physician does not want to make the person worse.
6. The physician does not know how.
7. The physician and/or the patient does not want to try to try to alter what fate or God is believed to have decided.
8. No treatment is available.
9. The many reasons that patients do not utilize treatments.
10. Economic reasons.
11. Because every treatment has some side effect.
12. Because of the principle *primum non nocere*
13. Because the patient will not get worse if not treated

The basic contention of this report is that physicians spend a major part of their time both in practice and in research on surrogate measures. It probably has become an increasing phenomenon as medicine has, over the past 2000 years, moved from almost total focus on symptoms, in which there was virtually nothing known about the body's biochemistry, to an emphasis on precursors or indicators of disease. New technologies, including not just instruments and devices, but also biostatistical methodologies, have made diagnostics and therapeutics available that until the relatively recent past were literally inconceivable.

Starr[56] and others have commented on the transformation of medicine, but they have not dealt extensively with what might be the greatest transformation of all, specifically, the substitution of process for purpose. This phenomenon is routine for virtually all organizations. The so-called Christian church metamorphosed from its founder's definition of 2 or 3 people getting together into an organization in which even the most spiritual of the leaders (eg, cardinals, parish priests, bishops, elders, or members of the vestry) usually are more involved with matters such as trying to keep a roof on the church building than they are with using their founder's

spiritual life as a model for their own. Budgets reflect priorities, and the budgets of even the most prestigious universities suggest that their primary purpose is maintenance of the physical plant or support of research, rather than teaching students. Hospitals, most of them originally founded as places where the poor, sick, and homeless could find safety and solace, are now managed to be profit-making institutions. Teaching hospitals are becoming parts of profit-making corporations. The Wills Eye Hospital for the Blind, Indigent and Lame no longer admits the indigent, the lame, or the blind. This characteristic change of institutions from one purpose to another is more typical than atypical. This involves a fundamental alteration of the primary purpose of the institution from, for example, charity to profit. Yet though the fundamental purposes of institutions change, their alleged purposes as reflected in their names often remain the same. As such, a fundamental disconnect develops between what the institution is called and what it does. So also for the professions.

In the field of medicine, this phenomenon has not been widely considered, either broadly or specifically. For example, a significant portion of the time and expense related to caring for patients in glaucoma involves testing and interpreting the visual fields. Yet there is strong evidence that the interpretation of visual fields is so difficult that meaningful conclusions are hard to reach[57-59] and that, except at the far extremes of completely normal or severely damaged, there is little relationship between the nature of a person's visual fields and either the quality of their life or their ability to perform the activities of daily living (Figures 1 through 6). Performing visual field examinations takes a considerable amount of technician and patient time. The total cost, when one considers all of the visual field examinations that are performed, is large. Such testing may be of help in establishing the longitudinal clinical course of the patient. However, if visual field changes relate as poorly to function as appears to be the case, one could question whether this large expenditure of time and money is appropriate.

In conclusion, this study has evaluated one way of considering the purposes of what physicians do, trying to get an insight into why physicians do those things. Specifically, the ophthalmic literature has been reviewed to determine whether the articles published indicate a primary interest in the well-being of patients. This review suggests that there is disturbingly little attention paid to considering what is presumably the desired goal of medical care, specifically making people's lives better.[60-63]

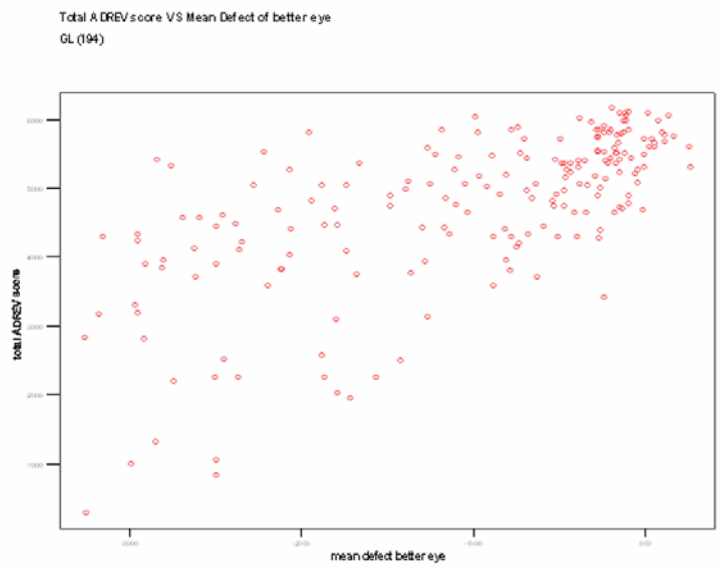

FIGURE 1

Relationship between the difficulty in performing the activities of daily living (y axis) and the mean defect is determined by a Humphrey visual field in the better eye of patients with glaucoma. The higher the score on the Assessment of Disability Related to Vision (ADREV), the better. Mean defect ranges from no defect to greater than 30 decibels.

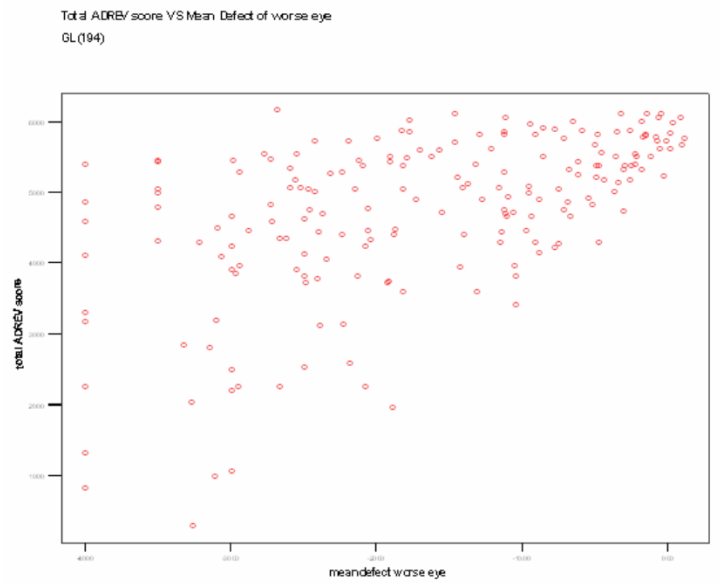

FIGURE 2

The effect of visual field loss in the worse eye of patients with glaucoma on the ability to perform the activities of daily living. ADREV, Assessment of Disability Related to Vision.

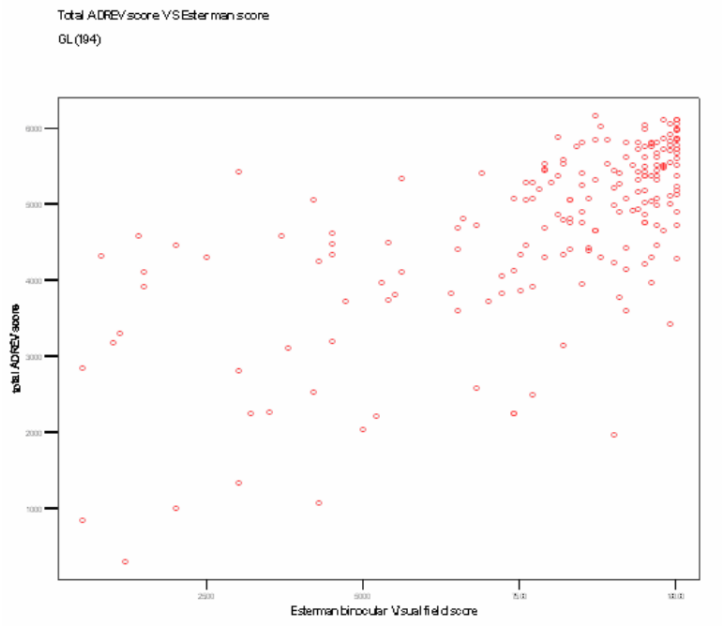

FIGURE 3

Lack of relationship between binocular visual field as determined by the Estermann test and the ability to perform the activities of daily living. ADREV, Assessment of Disability Related to Vision.

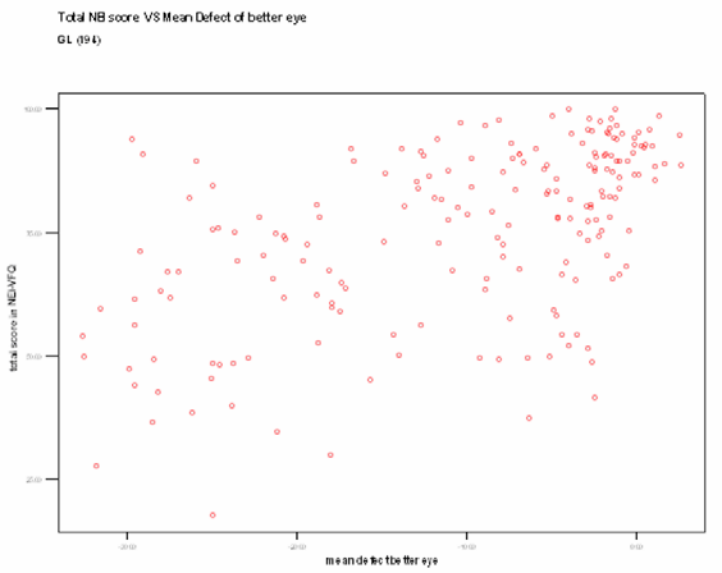

FIGURE 4

On the y axis is the total score of the NEI-VFQ-25(National Eye Institute Visual Function Questionnaire) to evaluate quality of life. The highest (best) score possible is 100. On the x axis is the mean defect as estimated by Humphrey Visual Field, ranging from no defect to greater than 30 decibels. This graph depicts the relationship for the better eye.

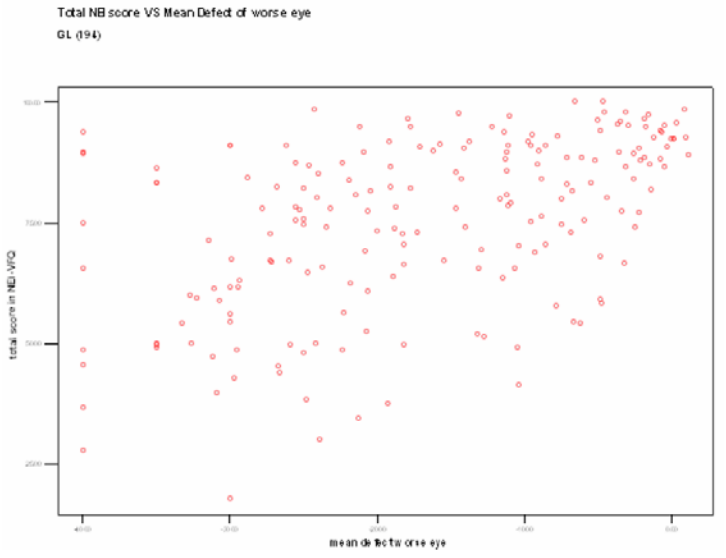

FIGURE 5

Quality of life on the y axis and amount of visual field loss on the x axis, regarding the worse eye of patients with glaucoma. NEI-VFQ, National Eye Institute Visual Function Questionnaire**.**

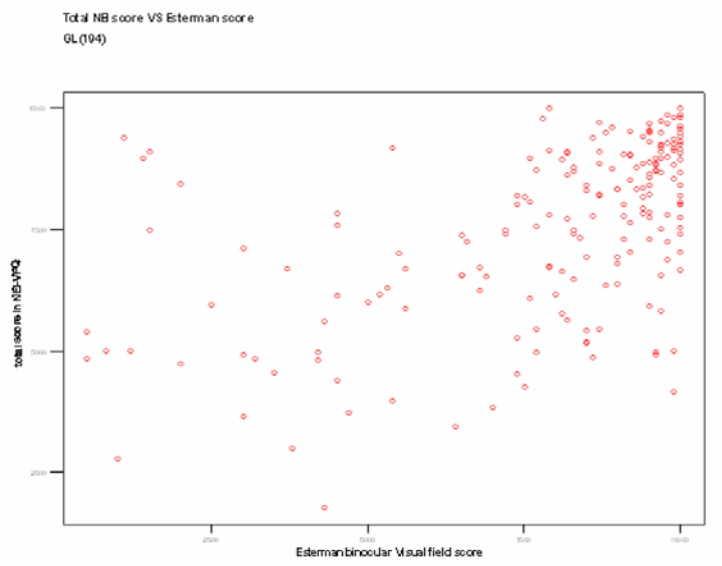

FIGURE 6

Quality of life on the y axis and amount of binocular visual field loss on the x axis where 100 represents no loss and 0 total loss. NEI-VFQ, National Eye Institute Visual Function Questionnaire.

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PEER DISCUSSION

DR RICHARD P. MILLS: Dr Spaeth's central thesis is that we physicians spend a lot of our professional intellectual energy in areas that are rather distant from patients feeling better. Fundamentally, people want to feel better, and when poor health gets in the way of that, they seek out medical care to get back to a good health status. But there are many things in life besides health and health care that affect the way we feel. Having no money, loss of a loved one, and being trapped in a snowstorm, are examples of non-health-related contributors to feeling bad. So when we speak of quality of life in a medical context, it is important to remember we mean health-related quality of life. Many large collaborative clinical trials now contain a quality-of-life measurement component to ensure that the connection between the studied treatment and patient well-being is maintained. It's often a surprise to critics of "squishy science" that quality-of-life measurement instruments have less variability than a Humphrey visual field test.

But all is not easy in measuring quality of life. One of the confounders is the extraordinary ability of the human organism to adapt to disability, given a situation that is not continuing to deteriorate. Another is that the measurement instruments are quite blunt and may not detect increments of change that are important to patients. Having said that, as Dr Spaeth says, it is important to continue to try to retain the connection between the surrogates we use, like visual acuity, intraocular pressure, lab values, and the treatment outcomes actually experienced by patients.

Anthropologists use cave drawings to deduce what was important for primitive man, and so Dr Spaeth and colleagues are using medical literature in the same way, to deduce what is important for physicians. They found we spend the majority of our time thinking about issues not directly related to patients' reasons for seeking medical care. So I applied their methodology, with only one rater—myself—to the 24 platform presentations at this meeting. I am pleased to report that the AOS, compared to the literature reviewed by Spaeth and associates, is more directly patient centered (Table), and with that observation I conclude.

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TABLE. COMPARISON OF LITERATURE REVIEW AND 2007 AOS ABSTRACT REVIEW

GRADE CLASSIFICATION	SPAETH LITERATURE n = 1083	2007 AOS PAPERS n = 24
A = related to quality of life (QOL) or function	33 (3%)	5 (21%)
B = probably related to QOL or function	229 (21%)	4 (17%)
C = possibly related to QOL or function	740 (68%)	13 (54%)
D = no apparent relationship to QOL or function	81 (7%)	2 (8%)

DR. IRENE H. LUDWIG: No conflicts. This was an excellent topic. I am glad you discussed this topic because this has been on my mind for a number of years. In my personal publishing experience, I have had an easy time gaining acceptance of articles which were of low clinical relevance, such as rare disorders I had encountered. Those submissions which I believed had the most relevance and I was most excited to publish, because I thought they would have broad applicability, were almost impossible to get through the process. The editor at Louisiana State University told me that she had never seen such lengthy comments from reviewers on the submissions of anyone else. They were often longer than the articles themselves because of the hostility to my ideas. Usually this problem was based on a personal disagreement of the reviewers with my results. This has resulted in my not publishing some very important papers because I just did not have the time to rewrite them 100 times. If some of the controls we designed with the intention of preventing poor clinical research from backfiring and, in effect preventing improvements by ensuring the maintenance of old-fashioned treatments that were not subject to the same controls, then could this not also prevent the involvement of clinicians who do not have the time to navigate the IRB process and rewrite multiple papers? This is why more articles in our literature are written by those who are not involved in patient care.

DR. GEORGE O. WARING, III: No conflict. George, you began discussing radial keratotomy and I would like to make a point that what we see is not often what we get. Radial keratotomy had the reputation of slashing for cash and, in some sense, refractive surgery has the reputation of just making money. The laser centers bring many people through at a discount so the doctor can get rich and so can the businessman, but there is a paradox. If you follow what Dick Mills said about measuring the quality of life in refractive

surgery patients, it turns out that correcting refractive errors has a big impact on quality of life for many patients. I have been practicing thirty years and have performed many cataracts extractions and corneal transplants, but it is the refractive surgery patients who breakdown in tears and say this is a miracle, not the cataract patients and the graft patients. So we must look beyond appearances when we are trying to judge the value what we do and ask if we are actually making patients well.

DR. ROBERT C. DREWS: The situation is not quite as bleak as the data would suggest. I submit that most physicians do not publish and perhaps the literature does not reflect the full spectrum of medicine.

DR. GARY C. BROWN: I do have a conflict of interest in that I am one of the editors of *Evidence-Based Ophthalmology*. I would like to say that there is a journal whose primary goal of the well being of patients, and it is *Evidence-Based Ophthalmology*. We review the best clinical trials with the best evidence and select articles from the entire medical literature that we believe are most clinically relevant. We also report on the cost effectiveness and cost utility analysis of the studies. What we do in healthcare is to help people. Very simply we help them live better or we make them live longer.

DR. MALCOLM R. ING: George, I think your topic is particularly important in this day and age of medicine. What is happening is that we receive less reimbursement for our patient care. This is being handled by some physicians who delegate many of their duties, or what has to be done for a patient, to technicians. I believe that this breaks up the doctor patient relationship profoundly and results in increased lawsuits and dissatisfaction with medical care in this country. We must be particularly cognizant of what you mentioned, as many of us chose medicine for exactly the purpose of helping people. We must resist the forces that are pushing us now in these directions because of what has happened to economics. Perhaps there is some light on the horizon. You mentioned the female medical students seem to be leaning more toward patient care, and with our rising population of female physicians that now comprises over 50% of medical school enrollment, we may have a counter trend.

DR. ALLAN J. FLACH: I have no conflict of interest, despite the fact that I am from the area of alternative medicine, San Francisco. How effectively does medical care achieve the purposes of healthcare? Clearly it is not achieving it as you have started to explain. Alternative medicine is really taking much more than its scientifically justified share of time and money from our patients. If some of you would like a shock, then you should attend the spa and look at the price list of what guests are paying for here for another type of alternative medical care. The money spent on herbal and natural remedies has some value for sure, but for some reason our patients are more willing to pay astronomical sums for these treatments. Nonetheless, they are unhappy with some of the scientifically justified treatments that we provide and what we charge for them. Dr Spaeth, I would be really interested in your comments about the interface of alternative medical care with some of the very important issues you bought up this morning.

DR. GARY C. BROWN: That was a great paper.

DR. GEORGE L. SPAETH: Thank you, Dick, for your extending an observation beyond the original one. Regarding the comment of Dr. Ludwig, editors must pay attention to the scientific value of the submission. We evaluate treatments to more effectively help our patients by using scientific methods. Anecdotal studies are important, but as many of these reports deal with issues that are obvious to us, they are hard to interpret. As Dick pointed out, I believe that the solution is not for us to become less critical, but perhaps to design better studies. We should ask if the studies, such as those reported this morning about removing the internal limiting membrane, really make a difference to people. Is it wrong for people to get well in the first three months? Is that a high priority? We must ask those questions and then to answer them scientifically so the editors can accept them.

George Waring, your comments are fascinating. I love the phrase used to describe Greek physicians many years ago, “iatromats”. These physicians, shamans, and others used to treat their patients by inducing states of ecstasy. How many of us consider that? How many of us are specialists in ecstasy? Is that not what we should be doing? Is that not our job? I am aware of only two instances in ophthalmology when this happens; first with refractive surgery, and secondly in the case of glaucoma when the patient actually sees after their glaucoma procedure. They are very happy with that.

In response to the comment of Bob Drews regarding the question of whether the published literature accurately reflects what is happening, I do not think it does. However, certainly something is transforming the current medical students. What behaviors they see in medical school and observing how their teachers act are factors that affect them. Their mentors, to some extent, are being driven toward this sort of lifestyle. This relates to the comment of Malcolm on what physicians are being driven to do and the notion that we need to take back our profession. Some people here in this audience are working very hard in that field. I also have a comment regarding the issue that Malcolm raised on gender differences. It is very interesting to note that at Wills Eye Hospital, traditionally a place with few female residents, 7 of 8 residents in the group two years ago were women, and this was wonderful. They really care for their patients.

Regarding the comment of Allan on the popularity of alternative medicine, we must be doing something wrong because so many folks are deserting traditional medicine and moving to alternative medicine. Doug Rhee and I prepared an article on that topic with regard to ophthalmic care several years ago and the percentage census has changed dramatically over the recent years. Twenty years ago alternative care was considered end of the line care. Now, in many areas alternative care is the primary care and traditional physicians are sought only after the patient has not been able to get the kind of care they want from the alternative physician.

I appreciate all the comments from the members who discussed this paper. I am especially grateful to the program committee that was willing to take the risk of allowing this paper to be presented.