

A Study of Prospective Ophthalmology Residents' Career Perceptions

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Abstract: Objectives: The purpose of this study was to identify differences in ophthalmology resident candidates and practicing ophthalmologists' career perceptions. A secondary aim was to evaluate specific demographic factors (e.g., gender, ethnicity, career interests, etc.) among residency candidates regarding their career perceptions.

Methods: A survey instrument (Critical factors in Career Perceptions) was sent by e-mail to prospective residents (n= 122). Group differences were calculated using a one sample t-test analysis.

Results: Compared to practicing ophthalmologists (n = 56), residency candidates were more likely ($p < 0.05$) to expect greater professional job satisfaction from a number of career factors (e.g., time with patients, physician teamwork, etc.); family-personal factors (e.g., diversity of job skills, sole professional responsibility, etc.); and financial factors (i.e., income and security) than those in practice. Gender differences between candidates revealed that women were more interested in spending time with patients and in computer technology applications.

Conclusions: These results suggest that medical school and residency program leaders to consider specific factors ophthalmologists encounter in their profession so that residency candidates have a more realistic view of their chosen profession. Several recommendations for resident recruitment and curriculum development are provided.

Key Words: resident career perceptions; ophthalmology career satisfaction; ethics/professionalism

Personal as well as professional goals, values, and interests are often formulated prior to commencing a professional career. Applicants to residency programs frequently chose their field of specialty based upon rather naive perceptions of that specialty. These initial perceptions may differ from those of physicians practicing within that specialty and may differ by the applicant's gender. Although their viewpoints are further refined during residency, significant career choices are based on those initial perceptions. In particular, understanding the career perceptions of ophthalmology resident applicants may provide a greater understanding of their unique capabilities and preferences for this medical specialty. In fact, ophthalmology is recognized as a medical specialty for the high degree of patient contact across all age groups; the amount of surgical procedures; and the potential for a favorable life-style.¹ Not surprisingly, long-term physician job satisfaction is shown to relate to career turnover² as well as satisfaction during the residency training experience.³

The purpose of this study was to more accurately assess and describe the perceptions of ophthalmology residency training candidates towards their chosen profession. By understanding these perceptions,

residency programs may be better able to select applicants able to achieve greater career satisfaction.

Methods

An electronic survey was delivered to resident applicants qualified for review to the University of Texas Medical Branch at Galveston (UTMB), Department of Ophthalmology and Visual Sciences, for the entrance year 2003. The survey was based upon a validated and administered survey of Critical Career Factors among practicing ophthalmologists developed by the American Medical Association (AMA). Modifications in the survey were made to measure anticipated perceptions without changing the original survey's intent. The instrument consisted of twenty items using a Likert-type rating scale on a 10-point continuum (e.g., "1" having lesser value to "10" having greater value) as well as five open-ended questions added to the original instrument. The modified survey was piloted among similar resident respondents for clarity, appropriateness, and comprehension. IRB approval was obtained in accordance with established ethical standards for expedited institutional research. This study was a cross-sectional survey of residency candidates using an e-mailed questionnaire with survey responses stored within the departmental web page.

The Critical Factors assessed by the survey included

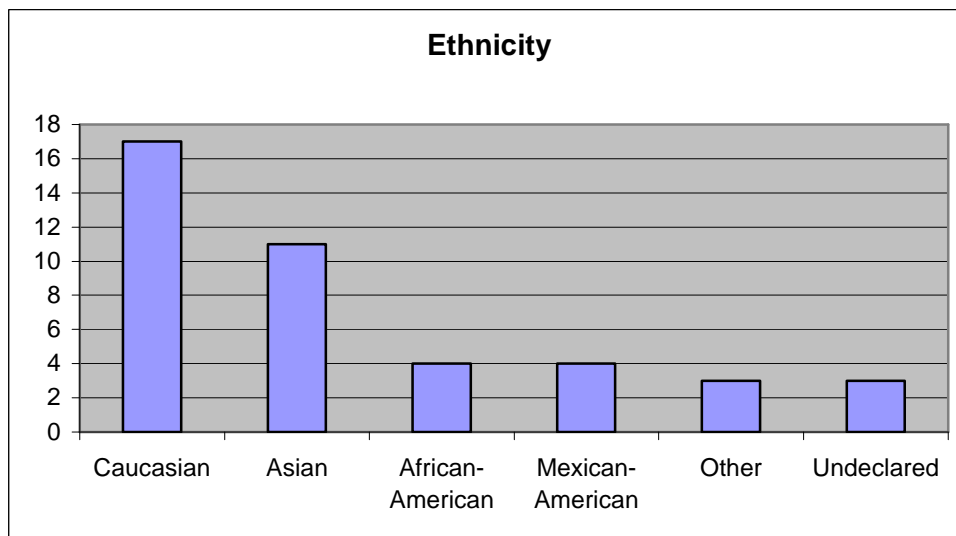
- Autonomy – amount of autonomy;
- Time – the amount of time applicant expected to spend directly seeing and caring for patient;
- Continuity – the degree of continuity of care anticipated with patients;
- Routine/Diversity – extent to which similar or different tasks are preferred;
- Family/Leisure – amount of time spent with family or in leisure activities;
- Expertise – anticipated level of expertise (i.e., general or sharply defined);
- Income – income level compared to other specialties;
- Innovation – amount of innovation required;
- Intellectual – specific versus theoretical problem solving approach preferred;
- Physician Interaction – amount of time interacting with other physicians;
- Manual/Mechanical – extent to which manual/mechanical activities are preferred;
- Pressure – amount of pressure anticipated dealing with crises, scheduling conflicts, and patient decisions;
- Responsibility – degree of responsibility expected to assume;
- Schedule – regularity of work hours;
- Security – anticipated job security and confidence in income;

- End Results – extent to which work provides opportunity to see end results;
- Status – rating of status compared to other specialties;
- Computer/Technology – extent to which computer based technologies will impact work; and
- Family Influence – extent to which family and personal values determine career decisions.

Critical Factors were divided into four broad categories: Career-oriented issues; Personal-family issues; Financial issues; and Gender-related issues. Career-oriented issues included time, continuity, expertise, physician interaction, manual/mechanical, pressure, schedule, end results, status, and computer/technology. Personal-family issues consisted of autonomy, routine/diversity, family/leisure, innovation, intellectual, responsibility, and family influence while Financial issues included income and job security.

An initial e-mail survey was sent April 2002 with a second e-mail submission to non-responders by June 2002. Responses by the residency candidates (n= 42) were then compared to the responses of practicing ophthalmologists (n = 56) who completed the original instrument administered by the AMA. Regrettably, no other data was available regarding AMA practicing physician scores (e.g., demographics; practice patterns; etc.). A one-sample t-test was used to compare means for critical factor

Table 1. Ethnicity Categories of Respondents (n= 42)



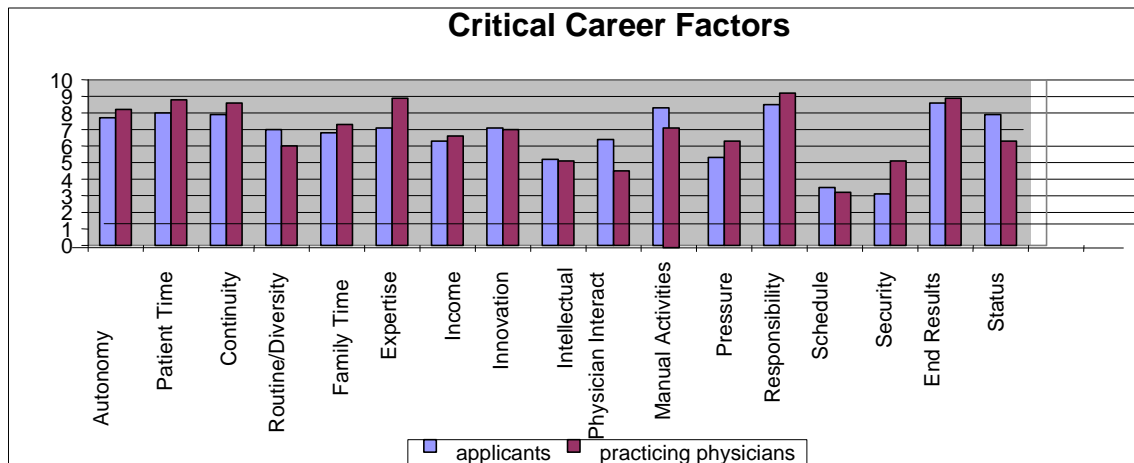
scores between the two groups (e.g., candidates and practicing physicians). A two-sample t-test was used to measure gender differences on each critical factor among residency candidates. Means and Standard Deviations were calculated using Excel with data analyzed from the resident applicants at the 0.05 level (< p). A Bonferonni Adjusted Probability was used to determine the critical value of the t-test.

Results

One hundred and twenty-two qualified applications were received for the entering class of 2003. Electronic responses to the survey were

Career Issues represented the most striking difference between ophthalmology resident applicants and practicing ophthalmologists among career perception categories. In particular, most resident candidates perceived that they would spend lesser amounts of time with their patients on a less regular (mean = 7.97), continuous, basis. They likewise perceived a lower level of expertise (mean = 7.10) in a teamwork setting with other physicians (mean = 6.39). Moreover, they rated a career in ophthalmology as having greater status (mean = 7.87) than other subspecialties. Yet, they underestimated the pressures of dealing with crises and patient

Table 2. Critical Factor Results (Mean of responses by candidates compared to those given by practicing physicians)



received by 40 applicants with two returned by the postal system for a total of 42 (34.4 %). There were 18 (43 %) female and 24 (57%) male participants with a mean age of 27.54 years. Figure 1 illustrates the reported ethnic background of the respondents.

Resident candidates (n= 42) revealed career interests among several categories. Nearly one third (35.7 %) sought careers in academic medicine while most (55 %) held private practice interests with the remaining (7 %) expressing research career interests. There were 2.3% who were undecided in their career interests.

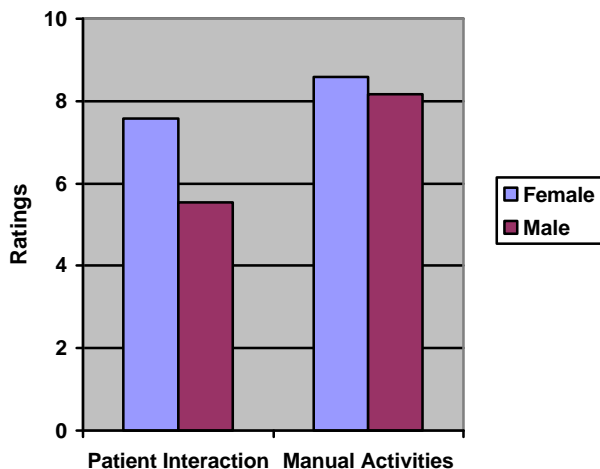
Perceptions in the following critical factors were found to be significant (p < 0.05) by a one-sample t-test: Patient Interaction Time, Continuity, Routine/Diversity, Expertise, Physician Interaction, Manual/Mechanical Activities, Pressure, Responsibility, Security, Status, Computer/Technology, and Family Influence (See Table 1).

decisions (mean = 3.52). Finally, among Career Issues, they perceived that significant amounts of their time would be spent performing highly skilled manual/mechanical activities along with computer technology applications (mean = 7.95).

Residency candidates perceived several Personal-Family Issues as being significant. They expected greater diversity in job skills (mean = 6.97), lesser degrees of sole responsibility in their profession (mean = 8.44), and greater family influences on career decisions than that of practicing physicians (mean = 7.39).

Only one Financial Issue was found to be significant for residency candidates. Although reported on a reversed scale (e.g., Likert-scale rating where greater security was rated a “1” as demonstrated by the significantly lower mean value of 3.14) they expected greater levels of professional security (mean = 3.15), although lower income

Table 2. Significant Gender-related Mean Differences for candidates



expectations than experienced by practicing physicians (mean = 6.29).

Critical Factors were then analyzed concerning different career perceptions based upon applicant gender (See Table 2). Female residency candidates indicated two factors that were significantly different from their male counterparts: time spent directly caring for patients ($p = 0.054$) and using computer-related technology ($p = 0.001$).

Qualitative findings from open-ended survey questions were provided by most ($n = 38$) of the respondents. Their classifications are described in the Discussion section.

Two open-ended questions provide added insight into individual residency candidate career perceptions. In particular, they were asked to describe the most and least appealing aspects of their chosen profession. Several themes emerged. These were classified from the candidate's perspective, or viewpoint. The most cited comments were categorized into themes. The predominant theme regarding the question on the 'most appealing' nature of the ophthalmology profession was revealed by six subjects who indicated the professions' "highly specialized medical and surgical" career attribute. Other appealing career aspects were expressed by two subjects who reported the specialties' "specific expertise, clinical and technical skills, and continuity of patient care". The 'least appealing aspects' of the profession were revealed by three subjects regarding "insurance and medical care cost reimbursement" concerns. Other 'least appealing' aspects were cited by two subjects who cited concerns for

"procedural/legal risk" and competition from optometrists. Thus, many of the concerns and comments expressed by the candidates are supported by these research results for aspects of the ophthalmology profession (e.g., financial, legal, and competition).

Discussion

The aim of this study was to determine the differences in career critical factors between residency candidates and practicing ophthalmologists. This was conducted to consider the possibility that each group might hold differing perspectives about what is important for career satisfaction. We provide a discussion of the study results related to career issues, personal and family issues, financial issues, as well as gender issues.

Career Issues - career issues offered the most interesting results for career perspectives by both groups (e.g., residency candidates and practicing ophthalmologists). Work-related expectations offered no statistical difference between groups with respect to income level, work schedule, amount of autonomy, amount of family/leisure time, innovation required, intellectual approaches to problem-solving and seeing the end results of their work. This consistent viewpoint may be attributable to candidate investigation and inquiry from varied professional information sources (e.g., career analysis, recruitment literature). On the other hand, there are apparent career perceptions differences in the two groups.

Residency candidates reported significantly different response levels to career issues than physicians in practice. Candidates expected less time to be spent in direct patient care along with less continuity of care for the same patient on a regular basis than found by practicing physicians. Academic health centers tend to have fellowship sub-specialists, which practice primarily within their specialty. This may lead candidates to feel that ophthalmology is a sharply defined specialty compared to those in comprehensive ophthalmology practice. Teaching facilities, on the other hand, tend to be large practices affiliated with hospitals. Within these hospitals, other physicians may be more accessible leading the applicants to believe that they will encounter more manual and mechanical activities. This most likely reflects the fact that medical students are often expected to perform their own diagnostic testing whereas practicing ophthalmologists may have technologists perform some of these activities while they interpret the test findings.

The resident candidates anticipate that interaction with other physicians will be a common feature, once in medical practice. Perceptions for higher status with other medical specialties were overstated when compared to practicing ophthalmologists. In contrast, it is interesting to mention that they underestimated the amount of career pressure when compared to practicing ophthalmologists.

Residency candidates tend to hold a more idealistic perception of their career expectations than found among practicing physicians. Equally important, they indicated that they will be able to witness the end result of their work along with a regularity of their work schedule. Residency candidates anticipated greater utilization of manual and mechanical devices as well as computer technology in their eventual medical practice. This latter point, although not surprising given the expanded use of technologies in medical education training, is of particular note because computer-based diagnosis and treatment technologies will continue to be standard practice, especially for the ophthalmology profession. Furthermore, advances in science and technology will continue to affect surgical practices.⁵ Molecular biology, nanotechnology for less invasive surgical procedures, and advanced imaging methods will impact subspecialty care. Telemedicine will likewise find greater applications for diagnostic and referral information. In addition, other smart technologies such as medical training simulators will reinforce procedure skills that allow for self-directed performance in surgical applications.

As expected, residency candidates underestimate the amount of pressure (e.g., administrative and surgical demands for time) in the field of ophthalmology given the limited professional responsibilities of those in practice. Ophthalmologists are faced with these patient care pressures on a routine basis and we expect would be more likely to rate pressure higher than would residency candidates. Likewise, it is not surprising that candidates would overestimate the status of their chosen specialty. Therefore, one may assume that candidates bereft of professional experiences lack a valid framework upon which to determine many of the specific career expectations.

Personal-Family Issues - Residency candidates and practicing physicians share similar perceptions regarding personal and family issues. This could be because certain personality types align with certain

occupational fields, including ophthalmology. Both residency candidates and practicing physicians indicated that their medical discipline offers autonomy, opportunity for innovation, as well as time for family and leisure activities. They prefer a balance between theoretical and specific problem solving approaches. Candidates anticipate that their careers will afford more diversity than was reported among practicing physicians. This may be attributable to the fact that many residency training facilities are within academic health centers and tertiary healthcare institutions with large referral bases along with greater numbers of unusual and complicated patient cases. As discussed in the section on career issues, these training centers often include more sub-specialists that provide medical students a broader clinical experience than in the typical private practice setting. Therefore, as with career issues, experiences could skew the candidates' frame of reference for the practice of ophthalmology.

Residency candidates differed from practicing physicians by underestimating the amount of responsibility expected in medical practice. This lack of experience may shape their perception for the extensive responsibility extant in medical practice. Likewise, their perceptions of personal and family values indicate a more dominant role in their career decision-making. While practicing physicians have already made important and enduring career decision, most residency candidates have yet to initiate these long-term career considerations (e.g., private practice versus academic medicine; geographic location/lifestyle; family/child-rearing; etc.).

Residency candidates further indicated a significant degree of influence among personal and family values on their career decisions. Here again, lack of other life experiences (e.g., competitive healthcare market forces; child-rearing responsibilities; etc.) may contribute to this rather idealistic viewpoint. Many are drawn to the field of ophthalmology because of its perceived controllable lifestyle for personal and family time.⁵ In fact, surgical residents' while in training shift their main issues and concerns from those of a personal nature to more financial perspectives.⁶ Furthermore, female residents show greater concerns than men when accommodating their work-life balance, especially for child-rearing. Child-rearing during the residency years can be demanding, both emotionally and physically.⁷ On the whole, personal and family influences play significant roles in forming important career decisions.

Interestingly, residency candidates' Personal-Family Issues were found to be similar to those of practicing ophthalmologists. Both groups consistently viewed autonomy, innovation and intellectual development in much the same manner. Specifically, they expressed considerable motivation for autonomy, innovation or intellectual problem-solving expression in their medical practice. This observation may suggest that both groups realize that they are not independent from healthcare influences and that ophthalmology practice may involve a fair degree of routine, lack true innovation with intellectual development in a non-research environment remaining somewhat limited. Similarly, both groups felt that family and leisure were important for their quality of personal and professional life expectations.

Financial Issues - Among financial issues, only security was indicated as a significant ophthalmology professional attribute. Residency candidates anticipated a significantly lesser amount of certainty in the profession and its related income potential than those in practice. Moreover, both groups agreed that higher income, when compared to other specialties, was not a determining factor in their career expectations. This may be attributable to an awareness of evolving practice management patterns and healthcare financial reforms. Higher income levels than other subspecialties may not materialize given the tumult in healthcare financial reform measures. Limitations in insurance reimbursement and rising malpractice costs in a more competitive healthcare marketplace continue to fuel practicing physician concerns. Applicants have yet to experience these challenges and may overestimate the degree of security that this profession provides. Therefore, residency-training programs ought to consider interventional strategies that improve the work environment for residents that promote career satisfaction.⁸

Gender-related Issues - When residency candidates were compared by gender, the data reveal that time spent with patients and the applications of computer technology were the only factors where there were statistically significant differences. Female candidates expected to spend greater amounts of time in the patient-physician encounter. They likewise anticipated greater use of computer technologies in their eventual practice as compared to their male counterparts.

The number and proportion of women graduating medical schools in the United States has risen from 5.0% in 1961 to 42.4% in 2000. This has implications for life-style issues in both primary and

specialty care specialties.⁹ Changing enrollments indicate differing values and skills that may affect residency training and the world of practice. Furthermore, women primary care physicians "are more influenced than men by both personal and family values" and "are more often in dual-career families and/or are less motivated by financial aspirations, or are more altruistic" in their career decisions.¹⁰ Societal expectations that "women handle the responsibility of child rearing to a greater extent than men" are deeply engrained.⁶ These dynamic factors may play a significant role in the career decisions by participants in this study.

There were several limitations in the study. Only prospective residency candidates who applied to the department were surveyed through their e-mail addresses. A cover letter indicated that although not anonymous, the survey results and subjects would remain confidential. Only AMA member physicians provided data in the original survey. All data are self-reported by the research subjects. In an attempt to eliminate conflict of interest concerns for prospective residency applicant acceptance, the survey was administered to the qualified applicants after the residency match results were released. This was done so that applicants understood that survey completion had no bearing on their eventual residency program selection. The study was based upon assumptions that career decisions include objective and subjective criteria. In addition, it is assumed that poor career choices yield job dissatisfaction and reduced quality of patient care delivery.

Conclusions

This study provides evidence that residency candidate career perceptions differ from those of practicing ophthalmologists. Our results suggest that prospective ophthalmologists are of the opinion that once into their medical practice; they would have opportunities to spend more time in a continuous medical relationship with their patients. Similarly, they foresaw their careers being diverse in terms of work tasks. Sharing their expertise among fellow physicians were particular ambitions held by candidates. Although job pressure was not considered excessive, they did feel that they'd encounter considerable job responsibility associated with vision care, although in a less secure environment.

The increasing numbers of women medical graduates will likely mean additional women residency applicants, thus altering the role of women in the medical field. Ophthalmology careers may be

of interest because of a perceived lifestyle, career and family balance.

Although ophthalmology has historically tended to produce greater private practice opportunities¹, the changing medical profession workforce (i.e., increased gender and ethnic diversity; older resident age; increased expectations for career satisfaction; as well as changing child-rearing roles for either parent) may contribute to increased interests in academic medicine or other medical practice options.

Another career factor of increased interest is the application of information and diagnostic technologies. Computer technology and mechanical devices were found to be more an interest to residency candidates than those in practice, perhaps explained by the fact that younger generations are more informed about technology.

Surprisingly, prospective female residents revealed the most interest in computer technology applications perhaps due to its time-saving efficiencies. This has additional implications for evidence-based practice and telemedicine. Patients who are better informed will use information access via the Internet and physician e-mail than ever before⁵. In this way, computer based resources will benefit resident training and professional practice.

The influence of candidate family and personal values were found to be more highly rated than those in practice. Women residents appear to be concerned about balancing family and career issues for career satisfaction. Women physicians are found to have 20% fewer work hours than males⁵. This may be an important consideration in resident recruitment and curriculum that allow for a balanced career-family lifestyle.

We recommend that resident faculty include career factors related to graduate medical education general competencies (e.g., Patient Care; Communications and Interpersonal Skills; Professionalism; etc.) during the recruitment interview process. Such recommendations may be of special concern to residency programs affiliated with academic health centers where shorter patient hospital stays and a lesser emphasis on teaching in out-patient clinics place added burdens on faculty to teach important career factors¹⁰. Residency programs need to consider the critical factors that determine career satisfaction when recruiting prospective colleagues. In addition, core curriculum designs should incorporate practice management objectives related to Career and Financial Issues in clinical

practice. The perceptions of Personal-Family Issues are important for both recruitment and instruction of residents as well as medical students. Career planning during medical school and residency training should be offered so that career, personal and financial issues are effectively explored. In this way, important core competencies for interpersonal communications, professionalism and medical practice are considered particular strengths associated with women candidates.

Therefore, guiding the process of career expectations assists medical students and residents towards effective career decision-making. A changing patient population by ethnicity and age demographics coupled with greater competition in the ambulatory care setting will further influence decisions for practice options. Creating experiences that include private practice role modeling may likewise create a more realistic perception of ophthalmology practice. Moreover, assessing career critical factors may fortify resident general competencies in such domains as interpersonal and communications skills; professionalism; and systems-based practice. Therefore, resident career critical factors may enhance their career satisfaction and longevity as future ophthalmologists to meet the vision care needs of a changing and diverse patient population.

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