

RESIDENCY EDUCATION: BENEFITS AND ROLE IN OPTOMETRY

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Abstract

Background: Optometry's expanding scope of practice has precipitated the development of issues within the profession such as specialization in optometry and the demand for increased entry-level skills of graduating optometrist. Residency education may play a role in both specialization and increased entry-level skills. A study was designed to evaluate the current role of residency education in optometry and what residency education may offer optometrists. **Methods:** An attempt was made to distribute a survey to all optometrists who had completed a residency programs in the year 2002. Of an estimated potential population of 215 former residents, 81 surveys were distributed to those for which contact information was acquired. **Results:** The return rate was 45.3%. Private practice was the most common practice setting with 52.3% of the responses. The majority of the former residents (55.9%) practiced in settings that required residency training. The median annual income for the former residents was between \$70,000 and \$80,000. Responses were overwhelmingly positive for all of the following; satisfaction with current mode of practice, additional training recognized by colleagues, residency training has led to the development of increased competence, and residency training is valuable expenditure of time. The majority of the former residents (59.4%) elected to complete a postgraduate residency program for the purpose of enhancing general eye and vision care skills. Fifty-percent of the residents completed programs that focus on specialty training. Of those who elected to complete a residency program for the purpose of enhancing general eye and vision care skills, 21% completed a program that focused on specialty training. **Conclusion:** The benefits of residency education are mostly subjective in nature and not easily measured. The results of this study show benefits in

the very positive attitude former residents have towards the completion of a residency program. Another benefit of residency completion is increased opportunities for practice setting. This study did not conclude that residency education results in careers with higher pay. The former residents were found to have a median income lower than the median income for optometry as a whole. The most common motivation for pursuing residency education is not for the purpose of specialization but for the enhancement of general vision and eye care skills. However, more of the former residents completed programs with specialty focus.

Introduction

In relatively recent years, the profession of optometry in the United States has experienced significant expansion in scope of practice. The expansion began with legal struggles for topical diagnostic pharmaceutical agents and therapeutic pharmaceutical agents. It continues with the current state-by-state battle for oral prescribing privileges up to quests in some states for injectibles and select laser procedures. In November of 1998, Oklahoma made a great expansion in optometry's scope of practice by granting laser privileges to accredited optometrists for procedures such as Nd:YAG capsulotomy, argon laser trabeculoplasty and photorefractive keratectomy(1).

The expanding scope of practice in optometry has given rise to some issues within the profession. One issue is that the expanding scope necessitates optometrists to graduate with entry-level skills far superior than in the past. Schools and colleges of optometry find that more and more material must be covered within the same four-year period. Another issue created by the expanding scope of the optometry is the branching of

optometry into subspecialties. Residency education may play a role in both of these issues.

Residency education is defined by the Accreditation Council on Optometric Education (ACOE) as "...a planned program of post-O.D. clinical education that is designed to advance significantly the optometric graduate's preparation as a provider of patient care services beyond entry level practice. A residency must be a minimum of twelve months and must be composed of appropriately supervised clinical eye/vision care provided by the resident. A residency should also include a well-designed mix of self-directed learning, seminar participation, instructional experiences, and scholarship"(2).

Residency completion is not mandatory to practice optometry. However, in addition to opening doors for those who wish to perform research and/or become educators, residency education may provide increased entry skill level for all optometrists and further education for those who wish to pursue certain subspecialties. These factors may contribute to the increasing interest in residency education. A study published by Optometric Education in spring 2003 titled "Optometry Student Interest in Residency Education," estimates that should the desire to pursue residency education continue as found, the demand will outnumber the positions available(4). With the expansion of the optometric profession, eyes are turning to residency education and it's role in optometry. A study was designed to examine the role of residency education in optometry and the benefits that residency education may provide optometrists.

Methods

A survey was used in this study. I designed the survey and a faculty member at the Michigan College of Optometry reviewed the survey. Changes were made based on the

suggestions of the faculty member. No trial of the survey was administered.

The sample included all optometrists who completed residency programs in the United States in the year 2002. This population was chosen to balance the ideals of a population who had recently completed a residency program and also have had time to practice after the completion of the program. At the time of the survey the former residents had almost one year and a half to practice following residency completion.

An attempt was made to contact the residency advisors and individual residency coordinators for each school and college of optometry and inform them of the survey. Contact information available for the former residents was requested. In cases where privacy constraints did not allow the release of contact information, the coordinators were asked to forward the survey to the former residents. Nine of the 16 schools contacted cooperated either completely or partially. One of the schools did not hold contact information for their former residents and was therefore unable to participate. Some schools contacted the former residents and requested their permission to release their contact information. Contact information was acquired for 69 former residents. In addition, 12 surveys were forwarded.

ORMS (Optometric Residency Matching Service, Inc.) did not include school-based programs in the 2001 match. Therefore only estimates can be made as to how many residents completed residency programs in 2002. Dr. Chuck D. Haine, president of ORMS, Inc., estimates that approximately 185 residents were initially placed as a result of the matching process. It is estimated that there were 215 residency programs in 2001 at 125 sites. By the start of the programs on July 1, 2001, only a few positions remained open (Haine C. personal contact. January 2003).

Much of the contact information available for the former residents consisted of email addresses only. These former residents were contacted and given the choice of providing their address so that they may be mailed a hard copy of the survey with a stamped return envelope, or to respond via email to an address reserved specifically for receipt of the surveys. The remaining former residents were mailed the survey along with a stamped return envelope.

Results

Eighty-one surveys were distributed. Of those, 34 were completed and returned. Some of the contact information acquired was no longer correct and was returned without reaching the former residents. This was the case for at least seven of the surveys. This yields a return rate of approximately 45.3%. Some of the surveys did not have answers listed for each question. The actual amount of answers for each question may vary.

The survey consisted of nine items. Refer to appendix A for the complete survey.

Mode of Practice

A summary of the results for question 1, current mode of practice, is listed in Table 1. Thirty-four individuals answered question 1. The former residents were instructed to check all areas that apply. Eight individuals indicated two or more modes of practice. Some were dually employed and indicated both areas of practice. This was true for at least four cases. In at least one case two modes were indicated to describe a single position. This leaves three of the dual answers unclear. Therefore the responses are reported exactly as indicated without regard to whether or not the individuals practiced in

one or more modes. The most frequent response was private practice. Either alone or in conjunction with another mode of practice, 52.3% of the answers included private practice. In addition to the results listed below, two individuals occasionally provided care in nursing homes.

Table 1: Current Mode of Practice

Mode of Practice	Percent of Answers	Number of Answers
Private	32.4%	11
Private/Educational	11.8%	4
Corporate	5.9%	2
Corporate/Private	5.9%	2
Educational	14.7%	5
Educational/VA	2.9%	1
VA	5.9%	2
VA/Private	2.9%	1
Indian Health Services	5.9%	2
HMO	2.9%	1
Ophthalmology	5.9%	2
Contract	2.9%	1

Educational Requirements for Current Position

Thirty-three individuals responded to question 7, which inquired of the requirements for the position currently held. For example, did the position require residency training or a specified number of years in practice? “No Requirement” signifies that an O.D. degree and licensure were the only requirements for their current position. The results are summarized in Table 2.

Table 2: Requirements for Current Position

Requirement	Percent of Answers	Number of Answers
Residency Required	55.9%	19
No Requirement	34.3%	11
Research Experience	2.9%	1
Not Applicable	5.9%	2

Income, Job Satisfaction and Recognition

Thirty-three individuals responded to question 2, current year's anticipated income. The results are summarized in Figure 1. The median annual income was between \$70,000 and \$80,000.

Questions three and five were more subjective in nature. Question 3 was stated "Satisfied with current mode of practice?" The former residents were then given levels to which they could either agree or disagree with the statement. Of the 34 who answered the question, 76.5% agreed with the statement on some level. The results are summarized in Figure 2. Question five stated, "Others, including potential employers/partners, recognized your training as valuable experience." Again the former residents were given levels to which they could either agree or disagree with the statement. Thirty-three former residents responded to the question and the results are summarized in Figure 3. The answers neutral, disagree and strongly disagree each represent 2.9% of the responses.

It was hypothesized that income, job satisfaction and perceived recognition for residency completion may be affected by whether or not the former residents practiced in a

Figure 1: Anticipated Income for Current Year

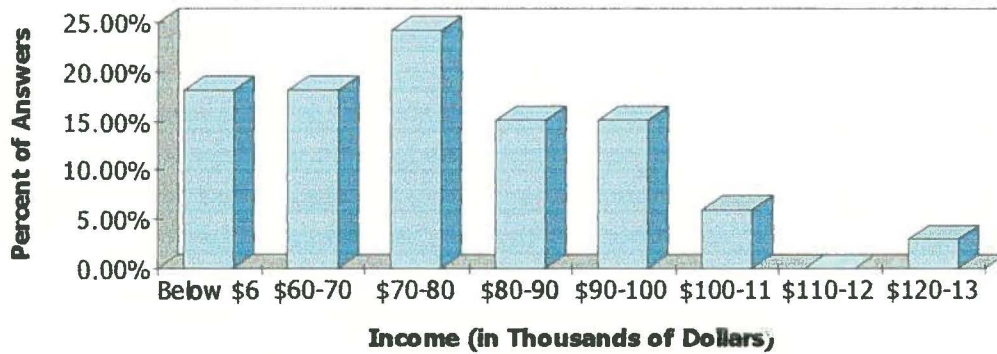
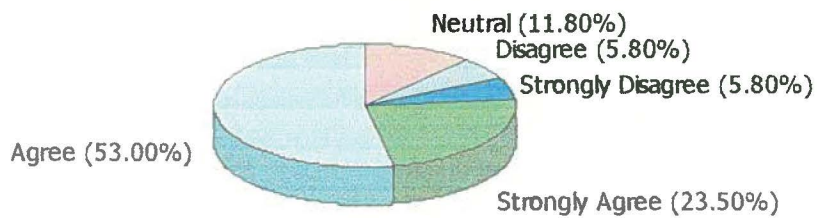
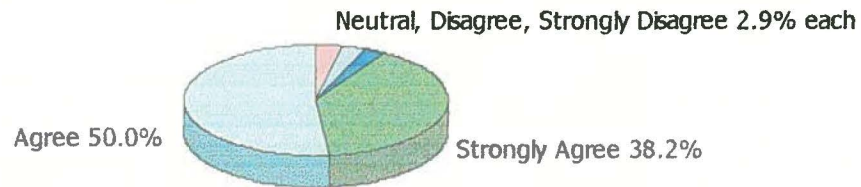


Figure 2: Satisfied with Current Mode of Practice



position that required residency training. However, none of the relationships were found to be significant to the 0.05 level. A X^2 of 3.480 was measured for satisfaction with current mode of practice with a p-value less than or equal to 1. A X^2 of 4.678 was measured for perceived recognition for residency completion with a p-value less than or equal to one. A X^2 of 10.583 was measured for income with a p-value less than or equal

Figure 3: Additional Training Recognized as Valuable by Others



to 0.20.

Increased Competency and Value of Time Spent

Questions 4 and 6 were subjective measures. Question 4 states “Found residency to be valuable expenditure of time.” Questions 6 states, “Residency training has given you a much higher level of competency.” Again, these statements had levels to which they could either be agreed with or disagreed with. The vast majority of responses were positive for both questions. The results are summarized in Table 3.

Table 3: Results of Questions Four and Six

Answer	Found Residency Valuable	Feels Superior
Strongly Agree	70.6%	81.8%
Agree	26.5%	15.1%
Neutral	2.9%	3.0%
Disagree	-	-
Strongly Disagree	-	-

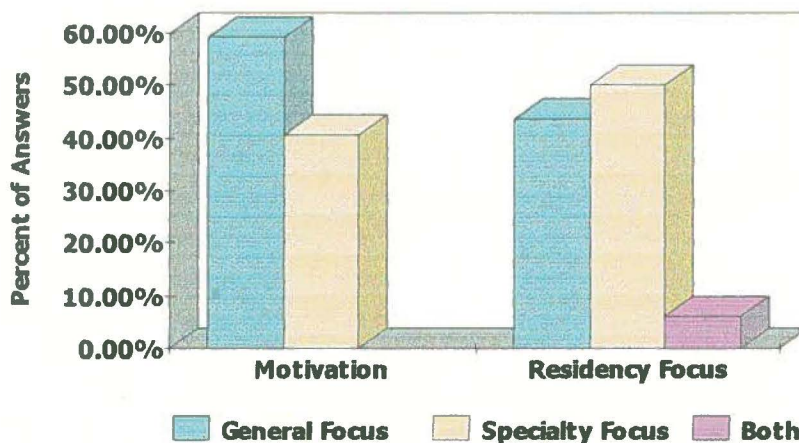
Specialization versus General Eye and Vision Care

Questions 8 and 9 examined specialization and residency education. Question 8 inquired of the motivation for electing to complete postgraduate residency training. Was the purpose to enhance general eye and vision care skills, or to become specialized in an optometric subspecialty such as low vision? Question 9 looked at what kind of training was provided by the program. Was the focus on specialty training, or on more general skills? Thirty-two individuals responded in a manner that could be analyzed. Two individuals provided responses that were unable to be analyzed. 59.4% of the former residents elected to complete a residency in order to enhance their general eye and vision care skills. 40.6% chose residency education for the purpose of specialization. 43.75% of the former residents completed programs that focused on general eye and vision care, while 50.0% completed programs that focused on specialty training. The remaining 6.25% claimed that their respective programs provided elements of both general and specialty training. The results are illustrated in Figure 4. Of those who chose to complete a residency program for the purpose of enhancing general skills, 21% completed a program that focused on specialty training.

Discussion

The purpose of this study was to take a look at the benefits of post-graduate residency education and its role in optometry. There has been talk of how the expanding scope of optometric practice has made it an increasing challenge to produce optometrists with entry-level skills in a four-year program. The expanding scope of practice has also brought up issues of specialization in optometry. Attention has turned to postgraduate

Figure 4: Specialty vs. General



residency education.

In evaluating the role of postgraduate residency education in optometry one could first take a look at what role postgraduate education plays in similar professions.

Optometry, dentistry, podiatry and even ophthalmology, inherently, are specialties.

Further specializations within these professions are then known as subspecialties(5). For some professions residency training is a prerequisite to becoming “specialized.”

Furthermore, the word “specialize” varies in its implications from one profession to another. Residency completion is not mandatory to practice general dentistry. However, to become specialized in various dental subspecialties completion of a postgraduate residency program is required(5). Residency programs may be up to four years in

length(5). The word specialize for dentistry is limiting, which means those practitioners

who have not completed the required training are not permitted to practice the subspecialty(5). Ophthalmology employs mandatory postgraduate residency training. Ophthalmology also has subspecialties. However, general ophthalmologists are not limited from specialty practice as dentists are(6). As for podiatry, a minimum one-year postgraduate residency program is mandatory for licensure in most states. There are both surgical and non-surgical based residency programs. Surgical based programs require 1-3 years of training. Non-surgical based programs typically are only one year. Many times graduates complete both surgical and non-surgical based residencies(7).

Post-graduate residency programs are neither required nor lead to formal specialization in optometry. Residency completion is known to open doors to additional modes of practice such as educational settings and government based health care delivery systems such as veteran's hospitals. Those who complete a residency program receive a certificate of completion from the school or college of optometry the program belongs to. There is an interesting debate over specialization in optometry and the role a residency program may play in specialization. This debate is discussed in an article published in Optometric Education in spring 2003 titled "Specialization and Credentialing in Optometry." There is concern that specialization will exclude general practitioners from providing care that they are capable of providing. However, there is also desire to have a method of formally recognizing those optometrists with special training. This would help to differentiate between the true specialists and those who may simply be interested in a specific subspecialty but have not acquired any further training or experience. This argument also proposes that specialization in optometry would help the profession by creating confident referrals between optometrists(5).

A good portion of the discussion over residency education involves specialization. It is interesting to note that the outcome of this survey suggests that the majority of former residents did not pursue post-graduate education for the purpose of specialization but rather for the purpose of enhancing general eye and vision care skills. Even so, the majority of the former residents completed programs that focused on specialty care. The study published by Optometric Education in spring 2003 titled, "Optometry Student Interest in Residency Education," surveyed third and fourth year optometry students. This study found that the number one factor by both numerical rank and by Kruskal-Wallis Rank for the decision to participate in residency education was the "need to develop confidence/improve skills"(2). "Desire for specialty experience," ranked third numerically as a factor in the decision to pursue residency education(2). Together these findings suggest that those who wish to specialize do not represent the majority of those who pursue residency education even though the majority of those who complete residencies completed programs that focused on specialized experience.

In similar professions, such as dentistry, it seems to be the rule that the more education, the higher the income. According to the American Dental Association as of 2001 general dentists averaged \$120,000 to \$150,000 per year while those who specialize averaged \$175,000 to \$250,000 per year(6). Optometry appears to have an opposite trend. This study finds former residents earn less on average than other O.D.'s. The median income for former optometry residents was somewhere between \$70,000 and \$80,000. The lowest being below \$60,000 and the highest between \$120,000 and \$130,000. The most recent information located on optometrists' incomes is from the year 2000. The median income for salaried optometrists in the year 2000 was \$82,860(8).

According to the American Optometric Association the median income for all optometrists in private practice in the year 2000 ranged from \$115,000 to \$120,000(8). The former residents appear to have a slightly lower income than optometry as a whole. This could result from a number of circumstances. These optometrists have had less than two years to practice after the completion of their residency program. Many indicated that they belong to private practice. It is known that though optometrists in private practice earn less initially, in the long run they typically end up with higher end incomes. In addition, 55.9% of the former residents practiced in a position that requires residency training. These positions often do not pay as high. Such examples are positions in educational settings and veteran's hospitals. Based on these results it cannot be concluded that residency completion offers monetary benefits.

There are other rewarding aspects to consider. Consider questions 4 and 6 regarding how former residents feel about the time they spent completing the residency program and competency. No former resident replied either disagree or strongly disagree. This says that nearly everyone who completes a residency program feels that it was a valuable year of study that has given them a level of competence superior to the level they would have had they not completed the residency. It is difficult to prove that postgraduate residency education produces superior optometrists. What we can say is that residency education produces optometrists who feel that the additional time they spent in training was valuable and has provided them with superior competence. This in itself is of value.

Responses to questions 3 and 5 demonstrated slightly more variation in answers. These questions looked at career satisfaction and recognition from colleagues. Question 5

evaluated the perceived recognition for the residency training. The responses were still overwhelmingly positive. It was thought that recognition by colleagues of residency training might be influenced by whether or not the setting required residency training. However, there was no significant relationship between residency requirements for current position and recognition from colleagues. This suggests that settings other than those that require residency training also recognize the value of residency completion.

Question 3 was designed to examine whether those who complete postgraduate education generally end up in career modes that they are satisfied with. The majority of responses were positive. It was thought that satisfaction in current mode of practice would be influenced by the requirements for the position held. For example, if an optometrist holds a position that requires residency training the optometrist may make more use of the training than if they were in a position that did not regard residency training as a requirement. Practicing in a position that did not require residency training may be less gratifying. However, there was no significant relationship between residency requirements and satisfaction with mode of practice. This finding suggests that it is not necessary for a residency trained optometrist to take a position that requires residency training in order to be satisfied with their position.

Question one surveyed current mode of practice among former residents. How do the practice settings of former residents vary as compared to optometry overall? Table 4 illustrates this comparison using data from Optometry's report, "The State of the Profession: 2002" and data from this study from the corresponding mode of practice(9). For both populations the most common mode of practice was private. The proportion was not as overwhelming for the former residents as it is for optometry as a whole (50.1%

Table 4: Mode of Practice Among Optometrists

Mode of Practice	Optometry Overall	Former Residents
Private Practice	87.4%	50.1%
Private Ophthalmology	4.6%	5.9%
HMO's, Clinics, Hospital	4.0%	2.9%
Chains, Super-Optical (Corporate)	2.8%	11.8%
Government and Other	1.2%	17.6%

of former residents versus 87.4% of optometry overall). The most obvious differences are illustrated in corporate and government practice settings. While those practicing in a corporate setting represent 2.8% of optometry overall, they represents 11.8% of the former residents. At first this may be surprising. However, half of the former residents involved with corporate practice also participate in private practice. It is possible that the former residents are "moonlighting" while they establish private practice. It may not be as surprising that there is an even more significant difference in the proportion of those practicing in government institutions between these two populations (17.6% for former residents versus 1.2% for optometry overall). There are two factors that may contribute to this significant difference. First, government institutions, such as VA's and Indian Health Services, show preference to residency-trained optometrists. The second contributing factor is that optometrists who complete a postgraduate residency program most often take positions that require residency training. This fact was illustrated in this study as well as a study titled "Outcomes of Residency Education: Postresidency Practice

Settings.” The study, published by Optometric Education in spring 2003, found that 65.6% of former residents practiced in a setting that either required or recommended residency training(10). This study found that 55.9% of the former residents surveyed practiced in settings that required postgraduate residency education. This comparison illustrates that postgraduate residency education may open doors to additional modes of practice, such as those within government institutions and educational settings.

Conclusion

The outcomes of this study suggest that many of the benefits that postgraduate residency education provides optometrists are subjective in nature. Such benefits include perception of a year well spent in training, satisfaction with mode of practice, perception of increased competence as a result of completing a program, and recognition of additional experience as valuable by colleagues. None of these subjective measures varied significantly with whether or not residency completion was required for the current position held. An objective benefit of residency education is having more practice options available. Educational institutions, research and government facilities are some practice settings that may require or recommend residency completion. It cannot be concluded from the results of this study that residency education provides monetary benefits. However, the population surveyed in this study had practiced less than two years after completing a residency program. This and other factors prevent this study from concluding that completion of a residency program increases the probability of lower pay.

The results of this and another study suggest that most common factor in the pursuit of residency education is not specialization but the desire to enhance skills. Even

so, the majority of the former residents surveyed in this study completed programs that provided specialty focus. It is possible that the expanding scope of optometry is calling for a level of proficiency that some optometrists feel is not completely achievable within a four-year program and therefore seek additional training. This is not to suggest that programs with specialty focus are not beneficial to enhancing overall skills. However, the majority of optometrists are seeking residency education to further enhance general skills. The schools and colleges of optometry may benefit from knowing the motivations of those seeking residency education for the development of residency programs in the future

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Appendix A: Survey of Former Residents

1. Current mode of practice? (check all that apply)

Private
Corporate
Educational
Veterans Health Administration
Other

2. Current year's anticipated income?

Below \$60,000	\$60,000 to \$70,000
\$70,000 to \$80,000	\$80,000 to \$90,000
\$90,000 to \$100,000	\$100,000 to \$110,000
\$110,000 to \$120,000	\$120,000 to \$130,000
Above \$130,000	

3. Satisfied with current mode of practice?

Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree

4. Found residency to be a valuable expenditure of time.

Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree

5. Others, including potential employers/partners, recognized your training as valuable experience.

Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree

6. The residency training has given you a much higher level of competency.

Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree

7. What were the requirements for the position you now hold? For example, "3 years experience or residency completion."

8. You elected to complete a residency program for the primary purpose of (chosed that which applies most):

Enhancing general eye and vision care skills
Specialization (to become a specialized in cornea for example)

9. The residency program provided experiences that focused mostly on:

General eye and vision care
Specialty Training

10. Any thing you would like to add about residency training?