

STUDENT PREFERENCES IN CAREER PATHS USING MATCH, JOB AND INCOME DATA

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ABSTRACT

Many options are available for dental students after finishing their education. Dental graduates must try to envision their career paths beyond graduation. Graduates may choose a residency program or they may choose to work in a solo practice or dental chain practice. Our aim is to evaluate dental students' preferences for general versus specialty residency match programs in relation to the strength of the job market and income. This study analyzed data from 2007-2016 regarding the General Practice Residency (GPR), Advanced Education in General Dentistry (AEGD), Oral Maxillofacial Surgery (OMS), Pediatric Dentistry (PED), Orthodontics (ORTHO) and Dental Anesthesiology (ANES) in the National Matching Program with the strength of the job market as tracked by the number of classified advertisements in Journal of the American Dental Association and dental income. Dental students appear to incorporate these economic factors into their preferences for their career path.

KEYWORDS

Dental Match, Jobs, Income, Dental Career Paths

1. INTRODUCTION

Dental graduates must try to envision their career paths beyond graduation. Graduates may choose a residency program or they may choose to work in a solo practice or dental chain practice. Our aim is to evaluate dental students' preferences in career paths by comparing the student preferences of general versus specialty residency match programs from the National Matching Program [1] to the strength of the job market by using the classified advertising index as described by Lee et al [2] and income data obtained from the American Dental Association [3].

2. MATERIALS AND METHODS

Publically available data published by the National Matching Services Inc. for the Postdoctoral Dental Matching Program from 2007-2016 were collected and analyzed. There are six residency programs in the Postdoctoral Dental Matching of the National Matching Services [1]. The data collected for five residency programs included: General Practice Residency (GPR), Advanced Education in General Dentistry (AEGD), Oral Maxillofacial Surgery (OMS), Pediatric Dentistry (PED), and Orthodontics (ORTHO). The data was collected for Dental Anesthesiology (ANES) from 2011-2016 because this program did not join the match until 2011. The number of

applicants participating in the match, the number of positions offered, and the number of positions filled were recorded.

The classified advertisements in the job opportunities available section of the Journal of the American Dental Association from January 2007 through December 2016 using the method reported by Lee et al [2] were collected and recorded. Private practice and dental chain practice advertisements were tracked to measure the strength of the job market.

Income data for dentists from 2007-2016 was obtained from the American Dental Association. This included the median annual income of general practitioners and specialists [3].

Student preference for general residency was calculated by subtracting the overall % fill from the % fill of general programs. Student preference for specialty residency was calculated by subtracting the overall % fill from the % fill of specialty programs.

A negative number may indicate that the program is not as interesting while a positive number may indicate that it is more appealing. The % of filled positions is a measure of the student preference.

The % filled general is the total general positions filled divided by total general positions offered. The % filled specialty is the total specialty positions filled divided by total specialty positions offered. The % filled overall total is all positions (general and specialty) filled divided by all positions (general and specialty) offered.

3. RESULTS

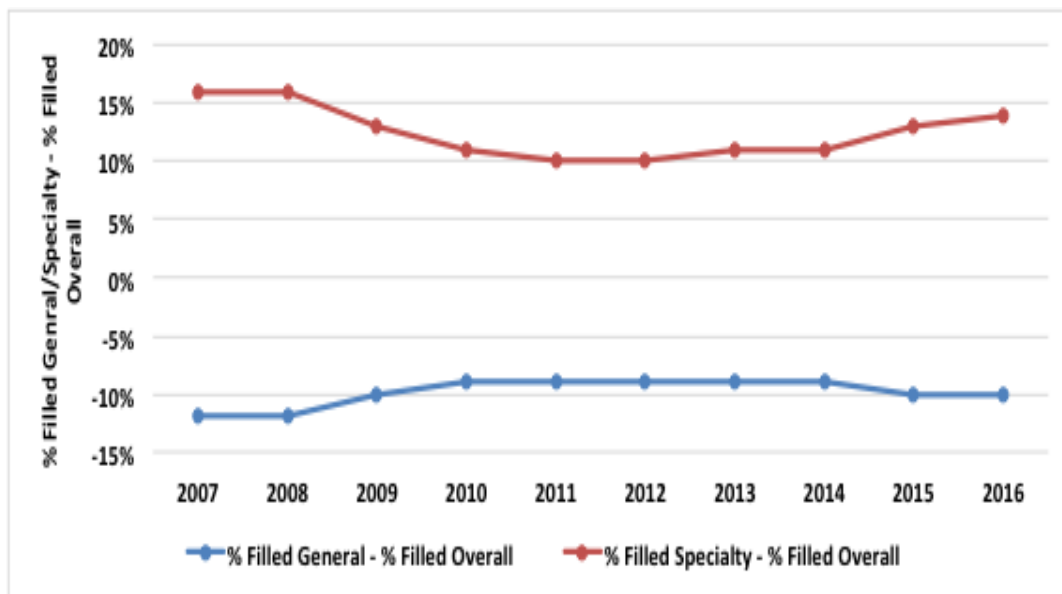


Fig 1: Student Preferences for General and Specialty Match Programs

Fig 1 shows an increase of about 3% in student preferences in general residency positions and decrease of 6% in student preferences in specialty residencies.

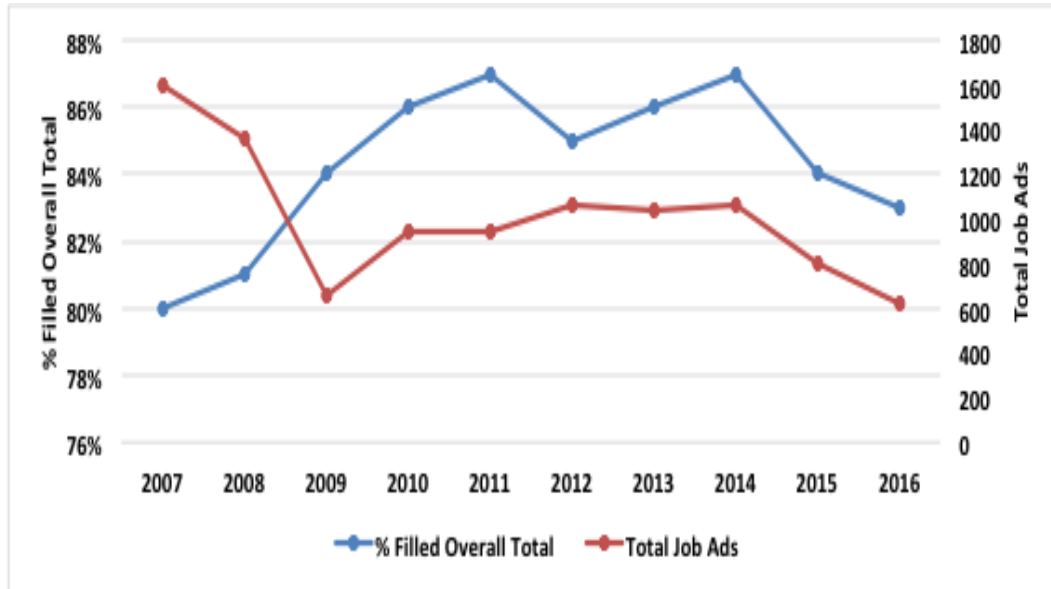


Fig 2: % Filled Overall Match Positions compared to Total Job Ads

Fig 2 shows a decline in the total number of job advertisements in 2009 with an increase in the overall percentage filled of the residency positions. After this the % fill and job advertisements paralleled each other.

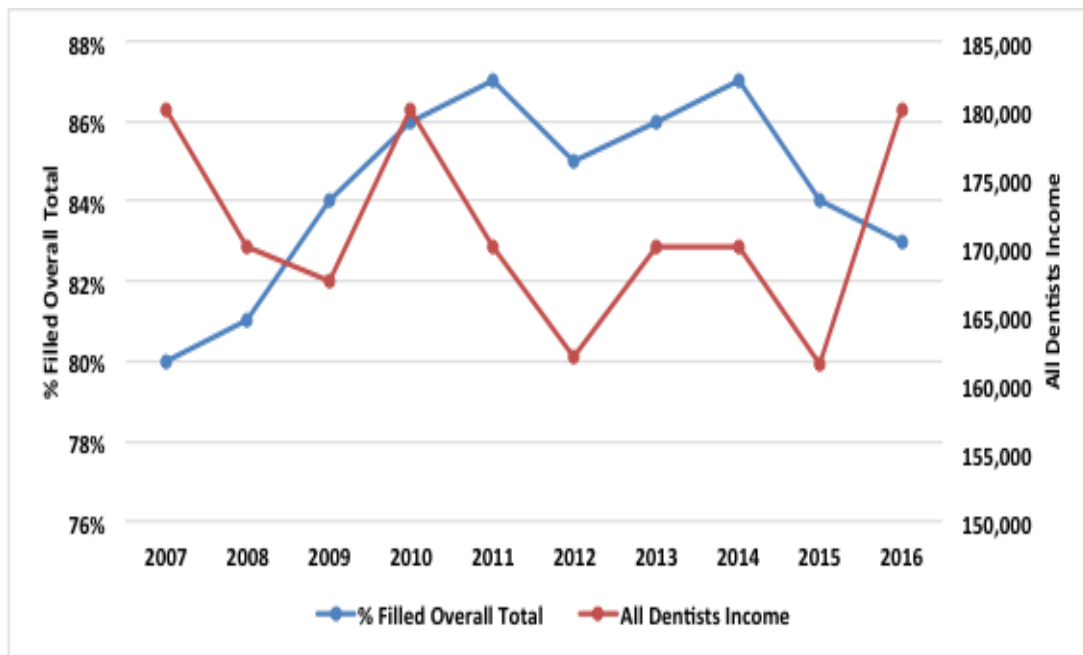


Fig 3: % Filled Overall Match Positions compared to all Dental Income

Fig 3 shows that during 2007-2009, there was a decrease in the total income of dentists and a rise in the % Overall Filled Residencies. The changes from 2010-2015 in the % Overall Filled Residencies parallel the changes in the total income of the dentists. Although there was an increase in dental income in 2016, the % Overall Filled Residencies showed a small decline.

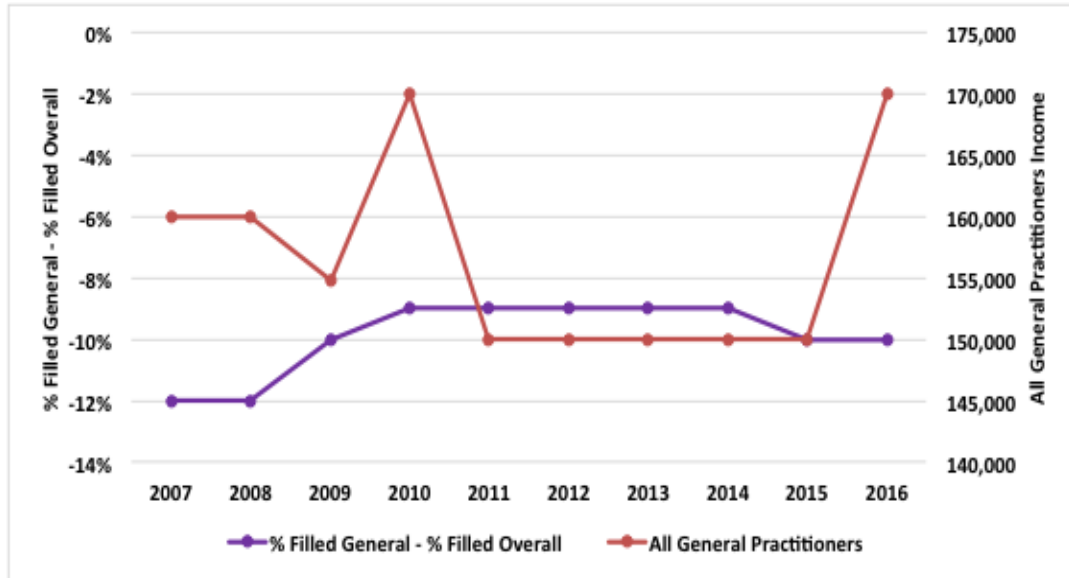


Fig 4: Student Preferences for General Residencies vs General Practitioners Income

Fig 4 shows a decrease in 2009 and a spike in 2010 for the General Practitioners Income and a mild rise in student preference for general residency programs from 2007-2010. From 2011-2015 the changes in the student preference of general residency parallel the changes in the general practitioners income. The increase in dental income in 2016 did not change the student preference for general residency.

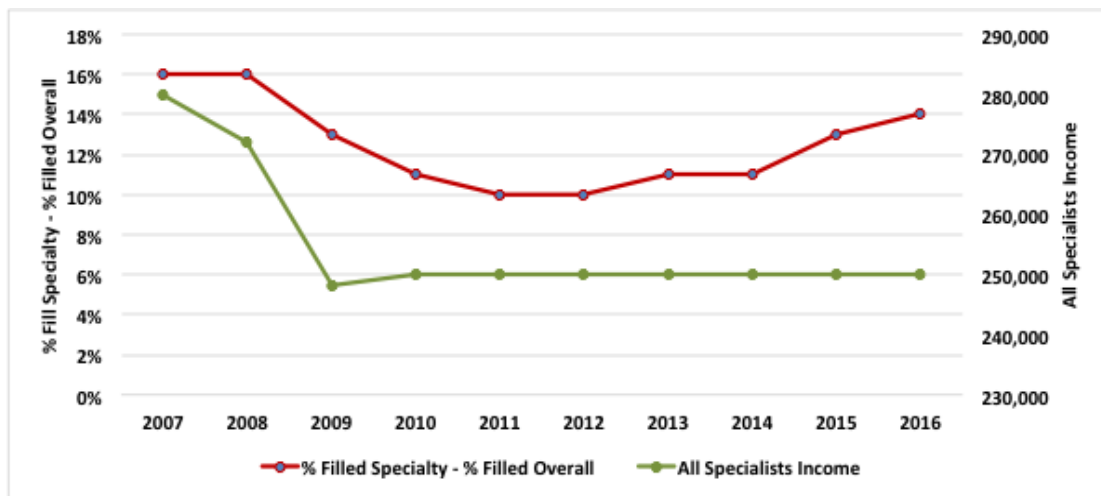


Fig 5: Student Preferences for Specialty Residencies vs Specialists Income

Fig 5 shows a decrease in 2009 for the specialty income and the preference for student specialty residency programs. From 2010-2015 the changes in the specialty income parallel the changes in the student preference for specialty residencies. There was a small increase in student preference in 2015-2016 despite no change in dental specialty income.

The trend in the student preference over the years is an indication of how the students view the residency. A downward trend indicates the program is not as popular while an upward trend indicates that the students are more interested in the program. There may be a lag in student preference with job and income data because students apply one year in advance for the positions.

4. DISCUSSION

Public opinions have often suggested that dentistry has been resilient to economic downturns where there hasn't been a true dental recession since the 1960s [4]. In fact, the growth rate of the dental marketplace has been estimated to be around 4% to 6% per year on average and even during economic downturn years, there is still minimal growth [4]. This is partly due to the fact that demand for essential dental services remains relatively consistent, but the slower growth rate is due to the reduction in demand for elective higher end cosmetic procedures [5]. Even though it seems that the dental marketplace appears to be sheltered from the economy, the economy seems to have a profound effect on the mentality of dental graduates when it comes to choosing their future career paths. Our study primarily suggests that dental graduates identify their career paths based on the job market and job income. Another important economic factor is student debt. Other factors might also affect their career decisions such as family, location of practice and the students' desire to pursue a specialty program.

One of the most important decisions that dental graduates have to decide is whether they should specialize or practice as a general practitioner. In the case of enrolling in a specialty program, our results suggest that these graduates are guaranteed a higher and a more stable salary than graduates who decide to practice as a general practitioner. However, enrolling in a specialty program is competitive and these students may need to pay tuition throughout the training, which ranges from two years to six years [6]. As a result, these graduates are incurring more student debts than those who choose to enroll in a general residency program. The graduates who want to become specialists are unable to generate income throughout their training. On the other hand, graduates who choose to enroll in a general residency program are guaranteed a stipend during their training. As such, these graduates are able to generate income the moment they graduate from school. The ability to generate income as well as minimizing expenses is especially important during the times of economic downturn such as the great recession of 2008. Thus, it is not surprising to observe that there is an increase in student preferences in general residency positions coupled with a decrease in student preferences in specialty residencies following the economic downturn of 2008 as shown in Figure 1. Furthermore, the additional student debt also plays a role in influencing graduates decision to pursue a specialty program [7]. The extra expenses incurred during their specialty training as well as the inability to generate income are important factors for students to consider especially when the economy is performing poorly. Thus, the economy as well as student debt appears to influence the career choice of dental graduates. However Nasseh reported that demographics such as race and sex had a higher association than educational debt for some career choices, [8].

Although the dental marketplace seems to be sheltered from economic downturns, our results as shown in Figure 2 suggest that the economy does play a role in determining the job availability of dentists. This is demonstrated by the fact that the amount of job advertisements following the great depression of 2008 decreased. As a result, less dental practices were hiring dentists leading to slower growth of their practices. This finding is coupled with an increase in the enrollment in residency positions. Thus, due to the increasing competitiveness of obtaining a position in private practice, more graduates decide to enroll in residency programs when the economy is performing poorly. By enrolling in a general practice residency program, these graduates are able to generate income through stipends while waiting for the economy to recover and more positions become available. As a result, our results suggest that the health of the economy plays a role in determining the career choices of fresh graduates where a poor economy leads to an increase in the enrollment of residency programs.

In addition to economic trends, income is another key financial factor that significantly influences students' preferences in career paths. Figure 3 shows the relationship between percentage of filled

residencies and all dentist income. The overall relationship is parallel after 2010. From 2007-2009 there was decrease in total income of dentists and rise in percentage of filled residencies. The decrease in all dentists' income can be attributed to the economic recession during that time period. Individuals are less likely to spend money on expensive elective dental procedures such as dental implants and veneers during economic downturns, which negatively affect all dentist incomes. Although there was an increase in dental income in 2016, there was not a corresponding increase in student preference, which may be because of the time lag in the application process. Future research is needed to see the trend in student preference. As shown in Figure 4 and 5, incomes for general practitioners and specialists improved in 2010 following the end of the recession. With the economy improving, many people's financial situation recovers and that enables them to afford elective dental care, hence increasing incomes for both general dentists and specialists. Figures 4 and 5 demonstrate that student preferences in choosing either general residency or specialty training closely follow the income trend for both career options. Income, affected by the economy, is a substantial incentive for students when it comes to choosing their career path. Other financial factors such as educational debt further motivates the students to consider income as a key aspect when they make post-graduate career choices. Since the 1970s, there has been an increasing trend of U.S. dentists pursuing specialty training after dental school [9]. Nonetheless, "rising educational debts...counter this trend as increasing numbers of dentists choose to immediately pursue general dentistry at graduation" [9]. The significance of educational debt should not be overlooked when considering financial factors prior to making career decisions.

Moreover, there are other external factors that influence an individual's decision in post dental school career choices. Students who planned on entering private practice immediately post graduation ranked "the influence of a family dentist, family other than spouse and spouse's occupation, significantly higher than students with other career plans" [9]. Encounters with a successful family dentist can be the inspiration behind one's decision to pursue general dentistry. Dental students who plan to immediately enter practice may have more pressure to hasten entry into the work force and generate income due to their spouses' occupation, or lack thereof [9].

Positive encouragement and support from family and friends are also crucial. Dental education is relatively long compared many other careers. Specialty training takes another 2-3 years; individuals may be less likely to pursue further dental training if they face pressures from people around them. Encouragement from people including but are not limited to spouses, relatives, mentors, faculty can greatly increase the pursuit of a specialty program after dental school [10].

Furthermore, gender and spouse occupation can have an impact in post-dental school career paths. "Female dental students plan on entering private practice immediately after graduation at a higher rate than their male counterparts; 69% of graduating females anticipated immediately entering practice, compared to 52% of males" [9]. More women are working as associates in practices than owning their own dental practice and relatively more women had taken career breaks than men; the career breaks were attributed to child rearing [10]. As a result of the traditional roles that many women assume with child rearing, female students' "immediate career plans may reflect these responsibilities" [9]. In contrast, "male dentists were more active in continuing education than females" [11].

Many factors influence students' preferences in career paths. A positive experience with a mentor, a research expert or a dental professional can encourage one to pursue different career options available after dental school such as education, research or dental residency. However, the factor that has the most impact would be finance/economy. Educational debt can defer one's pursuit of specialty training while economic downturns can affect income for dentists of different

fields. Ultimately, it is the combination of all the factors that will eventually help the students to determine their future career path.

5. CONCLUSION

There was an increase in student preference for general residency positions and there was a decrease in student preference for specialty residency programs which coincided with the economic downturn. The decline in the strength of the job market as indicated by classified job advertisements resulted in an increase in the % filled of residency positions. After the economic recession the changes in the income of general practitioners and dental specialists parallel the changes in student preferences for general and specialty residencies.

Dental students appear to incorporate economic factors such as the strength of the job market as indicated by classified job advertisements and income data into their preferences for their career path.

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