Motivational Factors and Future Plans of Nigerian Orthodontic Residents

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Abstract: This study was conducted to investigate factors influencing career choice of Nigerian orthodontic residents and to identify their future plans. All orthodontic residents in the Nigerian residency training programs were invited to complete a survey in July 2010. Data were categorized by demographic variables and were analyzed with statistical methods including chi-square analyses. Twenty-eight of the thirty-seven orthodontic residents in Nigeria completed the survey. The most important factor influencing the decision to pursue specialty training in orthodontics was a “passion for orthodontics” (42.9 percent), followed by “intellectual stimulation/challenge” (25 percent). The decision to become an orthodontist was made by 32.1 percent of the respondents while in dental school; 35.7 percent decided after completing dental school during private practice and 14.3 percent during a dental residency, while 3.6 percent had already decided before starting their dental school studies. Eleven residents (39.3 percent) said they plan to work in a private practice environment. Only four residents indicated that they will most likely practice primarily in an academic setting, while ten were undecided. Most residents (85.7 percent) reported planning to practice in an urban setting. A passion for orthodontics was the major attraction for orthodontic residency training for most residents in Nigeria, and few residents were considering academic career choices after graduation.

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Postgraduate dental training in Nigeria involves various disciplines of dentistry including orthodontics and is regulated by two examination bodies, the Fellowship of the Medical College in Dental Surgery and Fellowship of the West African College of Surgeons. A review of the literature on motives of residents for choosing orthodontics as a specialty reveals that residents in various countries have been found to choose orthodontics as a career because of intellectual stimulation or challenge, passion for orthodontics, workload flexibility, and predictability, among other reasons. These studies established that most residents were interested in entering private practice with little time dedicated to research.

It is important to document the priorities and future plans of those choosing orthodontics as a specialty. This information can assist in recruitment strategies, particularly in recruiting candidates with an interest in academic dentistry as well as candidates interested in practicing in underserved and rural areas after graduation. The crisis in recruitment and retention of orthodontic educators has been well documented. Since research has found that most residents plan to enter private practice with little time dedicated to research, it has been suggested that the orthodontic community must continue to provide supporting evidence that there will continue to be a shortage of persons interested in pursuing academic careers, thus underscoring the need for strategies directed towards a solution. Our study identified factors that motivated Nigerian orthodontic residents to choose orthodontics as a career and included information on their career plans after graduation.

Materials and Methods

This study received approval from the Lagos State University Teaching Hospital Research Ethics Board. The heads of all the Nigerian orthodontic residency programs were contacted, and permission was obtained to contact their residents to complete the survey.
A thirty-four-item questionnaire was sent to all thirty-seven residents enrolled in these orthodontic residency programs in July 2010. Questions on the survey were multiple-choice and closed ended, and responses were provided anonymously. The survey was divided into sections for demographics, reasons for choosing orthodontics, and future plans after graduation. Data from the survey were compiled into an Excel 2003 spreadsheet (Microsoft, Seattle, WA, USA) and categorized by demographic variables. Descriptive statistics and comparative analyses using chi-square testing were completed with the Statistical Package for the Social Sciences software (version 11.0, SPSS, Chicago, IL, USA) by gender, age, and year of program. Statistical significance was set at p<0.05.

Results

Of the thirty-seven total questionnaires distributed, twenty-eight were completed and returned, for a response rate of 75.7 percent. Of the respondents, twelve (42.9 percent) were male, and sixteen (57.1 percent) were female; half were in the thirty to thirty-four years of age category. Table 1 shows the gender, age, and year of program of the residents who completed the survey. Chi-square analysis showed no significant differences between age categories, gender, and year of programs (p>0.05) for any categories of results. Seven (25 percent) of the residents had completed formal education other than the required dental degree before entering orthodontic training (Table 2).

Residents were given a list of factors influencing their decision to pursue orthodontics as a career and were encouraged to select all factors that influenced their decision. A passion for orthodontics was the most common reason given by these respondents. Intellectual stimulation or challenge, workload flexibility and predictability, and job satisfaction were other important factors identified (Figure 1). Identifying the single most important factor for choosing orthodontics revealed a passion for orthodontics (42.9 percent), intellectual stimulation or challenge (25.0 percent), and workload flexibility and/or predictability (14.3 percent) (Figure 2). The decision to pursue orthodontics as a career was made by nine (32.1 percent) respondents during dental school and eighteen (64.3 percent) after dental school (Figure 3).

Respondents were asked about their plans for practice after graduation and were encouraged to indicate all answers that applied. While many of the residents were undecided (35.7 percent, n=10), the most popular choice was to practice in a private setting (39.2 percent, n=11). Only four residents (14.3 percent) intended to pursue a full-time research and teaching career (Table 3). Most residents (85.7 percent) said they plan to practice in an urban setting. Once in practice, 46.4 percent (n=13) of the residents said they would like to spend 25 percent of their practice time in clinical or didactic research, 25 percent (n=7) to spend 50 percent or more in clinical or didactic research, and 25 percent were undecided.

Discussion

There has not been a published study of motivational factors and future plans of Nigerian orthodontic residents. Our survey of the literature found three surveys of orthodontic residents from the United States,1-3 a survey of residents in Canada,4 and a survey of residents in the United Kingdom.5 In 1994,
Keith and Proffit\(^1\) published the results of a survey of 168 U.S. residents at the Graduate Orthodontic Residents Program conference, representing 81 percent of those attending. Bruner et al.\(^2\) conducted a similar study in 2003 at the same meeting in addition to mailing a survey to residents who did not attend the meeting, with a response rate of 77 percent. In 2010, Noble et al.\(^3\) published the results of an anonymous electronic survey of U.S. orthodontic residents with a response rate of 40.6 percent. Noble et al.\(^4\) also conducted a survey of orthodontic residents in Canada with a response rate of 81.48 percent. Keith et al.\(^5\) published a survey of orthodontic residents in the United Kingdom with responses from fifty-
seven residents (a response rate of 64 percent). Our response rate of 75.7 percent was comparable to that of Bruner et al.\(^2\) of 77 percent in the United States.

In this Nigerian study, women in orthodontic training outnumbered the men. A survey of gender distribution of dentists in Nigeria revealed that, over a twenty-year period, there has been a consistent rise in female dental practitioners from 15.3 percent in 1981 to 35.1 percent at the end of 2000 and projected that gender balance will be attained in the year 2015.\(^{14}\)

### Reasons for Choosing Orthodontics

The three most common reasons why Nigerian residents chose orthodontics as a career are a passion for orthodontics, intellectual stimulation and challenge, and workload flexibility and predictability. These three factors also emerged as the top most important factors. An interesting finding was that future job satisfaction was selected with high frequency when residents were permitted several options but was not among factors chosen as a most important factor. This implies that although anticipated job satisfaction was part of the respondents’ overall reasons to become orthodontists, it was not a strong factor influencing their decision.

Our results can be directly compared with the Canadian and U.S. studies because similar multiple-choice options were used. Nigerian residents were similar to U.S. and Canadian residents with respect to ranking passion for orthodontics and intellectual stimulation and challenge as the most important factors influencing their decision to pursue orthodontics as a career. Therefore, there appears to be a common thread in the expressed motivations for choosing a

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Table 3. Future plans of orthodontic residents

<table>
<thead>
<tr>
<th>Plan</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice orthodontics as an associate</td>
<td>7.1%</td>
</tr>
<tr>
<td>Practice orthodontics by buying into a group practice</td>
<td>10.7%</td>
</tr>
<tr>
<td>Practice orthodontics by starting a new practice</td>
<td>21.4%</td>
</tr>
<tr>
<td>Pursue a full-time research and teaching career</td>
<td>14.3%</td>
</tr>
<tr>
<td>Military</td>
<td>3.6%</td>
</tr>
<tr>
<td>Practice orthodontics in a community hospital</td>
<td>7.1%</td>
</tr>
<tr>
<td>Undecided</td>
<td>35.7%</td>
</tr>
</tbody>
</table>

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Figure 3. Time when residents decided to pursue a career in orthodontics, by number of responses
career in orthodontics by orthodontic residents in the United States, Canada, and Nigeria.

Keith and Proffit\textsuperscript{1} in the United States and Keith et al.\textsuperscript{2} in the United Kingdom found that the most common reason for residents to choose orthodontics as a career was expected job satisfaction. These studies cannot be directly compared with our Nigerian study because different multiple-choice options were offered although the responses could be related. A passion for orthodontics and intellectual stimulation could be related to an expectation for future job satisfaction.

More Nigerian residents than those in the other studies said they decided to become orthodontists after dental school. This finding raises the question of when their passion for the specialty was developed. Was it developed during dental school where there is limited access to clinical orthodontics, or was it developed after dental school while practicing general dentistry or another specialty? Their passion for orthodontics could have been influenced by other confounding factors such as dissatisfaction with or lack of passion for general dentistry or other specialty areas, general perception of orthodontics as a special dental specialty, or perception of the lifestyle and financial security of orthodontists in their community. Also, limited access to clinical orthodontics in undergraduate dental education could have led the residents to the perception that orthodontics requires a higher intellectual level; thus, they may associate orthodontics with intellectual stimulation.

**Future Plans After Graduation**

In terms of future plans after graduation, our study found that 39.2 percent of residents intended to enter private practice, the most popular being establishing a solo practice (21.4 percent) followed by joining a group practice (10.7 percent), with four out of twenty-eight residents considering full-time academia (Table 3). It is important to note that 35.7 percent of the residents were yet undecided about their practice plans or settings of their practice.

Keith and Proffit\textsuperscript{1} found that 84 percent of U.S. orthodontic residents intended to enter private practice, with only 6 percent planning to teach. Bruner et al.\textsuperscript{2} found similar results, with 82 percent of U.S. residents indicating an intention to enter private practice after graduation and only 3 percent planning for academia. Noble et al.\textsuperscript{4} found that while 82 percent of Canadian residents indicated interest in working in a private practice, only two out of the forty-four respondents showed interest in pursuing an academic career. In the United Kingdom, orthodontic residents expressed similar responses, with 7 percent expressing an interest in academia after graduation.\textsuperscript{5}

This Nigerian study further confirms the concern of educators and professional organizations that the future of orthodontic education is in a crisis situation and that orthodontics, like other dental professions, will continue to have difficulties in the recruitment of full-time academics. However, 46.4 percent of Nigerian orthodontic residents indicated an interest in spending 25 percent of their time on research. This might mean an interest in a part-time academic career. Unfortunately, the survey did not ask about the intention to pursue a part-time academic career.

The choice of practice plans and reasons for choosing orthodontics as a career by Nigerian orthodontic residents appear divergent. If passion for orthodontics and anticipated intellectual stimulation or challenge were motives for choosing orthodontics as a career, one would expect more residents to be interested in a full-time academic career, as well as planning more time for research. It could be that orthodontic educators are failing to convert this expressed passion into enhanced interest for teaching and research. Alternatively, confounding motivational factors such as earning potential and perception of lifestyle of orthodontists may have influenced their decisions.

Possible solutions to the crisis in orthodontic education have been suggested. These include increased flexibility to move through academic ranks, more training stipends, \textsuperscript{9,15} supplementation of salaries through intramural and extramural practices, the use of government fund to subsidize a student’s education with the requirement that the student enters academics, mentorship of dental students by faculty in order to get them involved early in research and inspire them early in their career to contemplate an academic career, provision of funds to sponsor residents during their training, as well as provision of research grants and programs for dental students to obtain additional degrees to stimulate and nourish an interest in research, and attempts to generate an interest in teaching and research during dental school by summer research projects or research projects leading to a bachelor of science degree in dentistry.

Most Nigerian orthodontic residents (85.7 percent) in our study reported planning to practice in an urban setting. Similar trends were found in the United States, Canada, and Nigeria.
States and Canada. This finding suggests that the orthodontic specialty needs to ensure access and availability of orthodontic care in suburban and rural underserved areas, either by accepting students from these areas who planned to return to these communities to practice or by developing outreach programs in these areas with the residents providing necessary orthodontic services as part of a social obligation to address access to care issues. This might instill in residents a sense of social responsibility for ensuring access of care to all people.

Conclusions

This study found that the most important reason that Nigerian residents choose orthodontics is a passion for orthodontics; intellectual stimulation or challenge is also an important factor. Most Nigerian residents plan to enter private practice with little time dedicated to research. The decision to become an orthodontist was made by many of the residents after dental school. Few residents plan to have academic and research careers. There is a need for a change in recruitment process to accept candidates with a passion for research and academics in order to solve the academic crisis. Orthodontic programs also need to provide measures that will increase the number of orthodontists willing to practice in underserved areas.

REFERENCES