

1 **Predictors of postgraduate dental specialty training choice: the Nigerian experience.**
2 1. Dr Gerald Isiekwe; Department of Child Dental Health, University of Lagos, Nigeria.

3 2. Dr Modupeoluwa Ashiwaju; Department of Child Dental Health, University of Lagos,
4 Nigeria.

5 3. Dr Olubukola Olatosi; Department of Child Dental Health, University of Lagos, Nigeria.

6 4. Dr Solomon Olusegun Nwhator; Department of Preventive Dentistry, University of Nigeria
7 & Department of Preventive Dentistry, University of Abuja Teaching Hospital, Abuja, Nigeria.

8
9 Corresponding Author:
10 Dr Solomon Olusegun Nwhator; Department of Preventive Dentistry, University of Nigeria &
11 Department of Preventive Dentistry, University of Abuja Teaching Hospital, Abuja, Nigeria.
12 *Email: periodontologist2010@gmail.com*

13
14
15
16
17
18

ABSTRACT (ARIAL, BOLD, 11 FONT, LEFT ALIGNED, CAPS)

Objectives

The objectives of this study are three-fold. First, to highlight areas of shortage in postgraduate dental education in Nigeria, secondly to propose the introduction of dental advisors into our postgraduate dental training and thirdly, to propose a model that could assist such dental advisors in predicting postgraduate dental training choice among Nigerian dental graduates. It is hoped that such a model would possess enough predictive powers to assist would-be dental advisors in guiding fresh dental graduates aright in their choice of postgraduate dental training.

Methods

Participants were dentists attending compulsory continuing professional development events at different centres across Nigeria. Graded Likert responses of 16 potential predictors of dental postgraduate training choice were obtained through self-administered questionnaires filled by 112 Nigerian dentists (mean age of 35.21 years $\pm$ 8.21). Data were analyzed after

necessary recodes to allow for meaningful statistical analysis. The predictive power of each factor was determined by inter-specialty and intra-specialty comparisons.

Results

A total of 51 males and 61 females participated in the study with predictors rated from 2.29 ± 1.23 to 4.09 ± 1.04 .

While level of diagnostic challenge strongly predicted a postgraduate choice of Oral and maxillofacial surgery, affluence and income concerns were jointly predictive of choices in orthodontics and restorative dentistry. Being female was highly predictive of a choice of paedodontics ($p=0.000$) in combination with other factors while work-life balance had a strong influence on choice of preventive dentistry-related specialties. Periodontology had several peculiar indicators not shared by other specialties.

Conclusions

Some highly-rated factors like skills and course content are not as predictive as income, work hours, private practice opportunity and affluence. While there are indications of a gradual shift from an oral surgery predilection to restorative dentistry, a gender predilection still exists with paedodontics and oral surgery. Periodontics, Prosthodontics and other specialties are still endangered necessitating an urgent need for the office of postgraduate dental advisors in Nigerian postgraduate dental training. This will go a long way towards averting the looming manpower crisis in undergraduate and postgraduate dental education in the country.

Keywords: [Postgraduate dental training, Nigeria, predictors.

INTRODUCTION

Lopsidedness in the number and distribution of specialists is a looming crisis for undergraduate and postgraduate dental training in Nigeria. Choice of dental specialties appears to be based on popular opinions about the specialty such as associated prestige and affluence. Unfortunately, factors affecting such choices among Nigerian dental graduates have been understudied. Specialties like oral surgery and orthodontics attract

28 many residents but some specialties are grossly deficient in number[1] The lopsidedness in
29 the distribution of dental schools is being addressed with recent accreditation of dental
30 schools in the north and south-eastern geopolitical zones of Nigeria.[2] However, the sudden
31 addition of three dental schools to the system has not been matched with a commensurate
32 increase in the number of undergraduate and postgraduate teachers and trainers. [1], [2]
33 With only 3000 dentists in Nigeria (1: 50,000) and a total allowance for over 200 dental
34 students approved by the medical and dental council,[2], it is sad that only bout 120
35 specialist[1] have been produced by the national postgraduate medical college in 30 years.
36 The major problem however, is not about numbers alone but uneven distribution of
37 specialists.

38
39 The over-dependence of the newly accredited dental schools on visiting lecturers and
40 absence of whole specialties in many dental schools attest to the twain crisis of number and
41 distribution. A crisis in the availability of undergraduate and postgraduate trainers looms in
42 Nigerian dental schools and tertiary dental hospitals.

43
44 Creation of new dental schools will only be meaningful with adequate undergraduate and
45 postgraduate dental teachers. Equitable distribution can be enhanced by identifying
46 predictors among dental students with the view to proper counseling and incentives where
47 necessary. It is the opinion of the authors that understanding such predictors would greatly
48 assist in planning. Postgraduate dental trainers need a proper understanding of choice
49 predictors in order to achieve “targeted career counseling.” Such career counseling would
50 seek to influence and “shape” the choices of dental students into favoring areas that are
51 currently suffering from gross under-staffing. At present, predictors postgraduate dental
52 training choice are non-existent in Nigeria necessitating the present study.

53
54

55

56 The silent feminization of dentistry [3] which appears to be creeping into Nigeria appears to
57 have worsened the distribution problem. It is an unpublished perception among postgraduate
58 dental doctors that pass rates are declining at both postgraduate medical colleges in Nigeria.
59 Though not backed by evidence, this factor is potentially capable of affecting enrollments for
60 postgraduate dental training. Previous workers [4] advocated dental counseling as a
61 panacea for the lopsidedness in numbers per specialty. The neglect of this advice for two
62 decades has contributed to the current lopsidedness in specialty choice.

63

64

65 The objectives of the study were to identify shortage areas in postgraduate dental education,
66 to propose the introduction of dental advisors and to propose a model for predicting
67 postgraduate dental education choice among Nigerian dentists

68 **MATERIALS AND METHODS**

69

70 **Study Population, Setting and Instrument**

71

72 There is an estimated 3000 registered dentists in Nigeria with a vast majority working in the
73 south-west of the country in mostly urban centers. Participants in the current study were
74 dentists working in undergraduate and postgraduate training centers, private practice and
75 government secondary and tertiary centers across Nigeria. The study adopted a cross-
76 sectional study approach with data collected over 4 months. Geographical location played a
77 minimal role in the distribution of participants because questionnaires were distributed at
78 events that attracted practitioners from different geo-political zones of the country. The north
79 was however not well-represented as only a few dentists practice in this part of the country.

80 A literature search was conducted to deduce factors considered important to dentists within
81 and outside Nigeria. The questionnaires were validated using a pretest among dentists in
82 one of the Teaching hospitals where the study was conducted. The participants filled self-
83 administered questionnaires developed by the researchers assessing several potential
84 predictors of postgraduate dental training such as;

- 85 1. Interesting/stressful subject during undergraduate training
- 86 2. Gender
- 87 3. Relationship (marital status)
- 88 4. Skills-related factors
- 89 5. Work-challenge related factors
- 90 6. Affluence –related factors

91 **Sampling**

92 The sampling method was purposive involving all consenting participants attending
93 continuing professional development programs and conferences. Since the inclusion
94 criterion for the study was being a dentist, the authors considered it extremely time-saving to
95 employ the use of self-administered questionnaires at different events such as mandatory

96 continuing professional development programs and dental specialty conferences. The
97 sampling method was therefore non-random. It was ensured that each dentist recruited into
98 the study only filled the questionnaire once.

99

100 **Research questions**

- 101 1. What affects postgraduate dental training choice among Nigerian dental graduates?
- 102 2. Are these factors predictable?
- 103 3. What is the current role of counseling in choice of postgraduate dental education

104 **Consent and confidentiality**

105 To ensure confidentiality, the questionnaires did not include any personal identifiable data
106 and implied consent expressed by accepting to fill the questionnaire was taken as sufficient.

107

108 **Statistical analysis**

109 All data cleaning and analysis was done with PASW (SPSS) statistics,[5] Data were
110 primarily analyzed for frequencies and secondarily subjected to cross-tabulations. The
111 dependent (outcome) variable was choice of postgraduate dental education while potential
112 predictors of such choice served as independent/explanatory variables.

113

114 Potential predictors were rated using Five-level Likert responses which were subsequently
115 recoded into 1-5 (From Not important to Extremely important). Total and mean figures of
116 each graded response on the Likert scale were recorded to the identify relative strength of
117 each response. Being a five-level Likert scale, the obtainable averages ranged from 1-5 with
118 1 being the lowest and 5 being the strongest prediction strength.

119

120 Factor analysis was performed to identify groups of predictors. The purpose of factor
121 analysis here was for grouping of similar predictors rather than elimination of any factor.

122 Authors adopted this approach in order to assess the relative influence of all possible
123 predictors irrespective of seeming insignificance from component analysis. Potential
124 predictors were assigned to the three resultant groups based on their score in the
125 component matrix. The three groups were then renamed (based on the potential predictors
126 within the groups) into Income-related predictors, Skills-related predictors and Work-Hours-
127 related predictors.

128

129 Mean values of individual predictors were recorded and compared across specialties and the
130 relative strengths of each potential predictor within specialties were also identified. The latter
131 was used as an index of potential prediction power of groups of predictors.

132

133 Because many resultant figures yielded too many empty cells for valid analysis (> 20%), the
134 responses were further recoded as follows: Not important, Minimally important/Important,
135 and Very important/Extremely. These were therefore regrouped as 1= Unimportant, 2=
136 Important and 3= Greatly Important.

137

138 For the purpose of meaningful statistical analysis, specialties were grouped as follows; Oral
139 & Maxillofacial surgery/Pathology, Restorative dentistry/pediatric dentistry (comprising
140 conservative, Prosthodontics, orthodontics and pediatric dentistry), Preventive dentistry (All
141 other courses including periodontics, General Dental Practice, Dental public health).

142

143 The grouping of Oral and maxillofacial surgery and Oral pathology was based on traditional
144 classifications of these two specialties in many dental schools in Nigeria. Orthodontics and
145 pediatric dentistry have traditionally been together under child dental health. Grouping of
146 these along with restorative dentistry was purely arbitrary for the sake of statistical analysis
147 and other specialties were grouped under preventive dentistry. p values ≤ 0.05 were
148 considered statistically significant.

149 3. RESULTS AND DISCUSSION

150 One hundred and twelve dentists participated in the study. The response rate for filled
151 questionnaires was 85.5% (112 of 131) comprising 51 males and 61 females aged 23 to 55
152 years. (Mean age= 35.21 years $\pm$ 8.21, modal age= 33 years).

153

154 Factor analysis produced 3 prominent groups of potential predictors namely Income-related
155 predictors (accounting for 27.7%), Skills-related predictors (10.8%) and Work Hours-related
156 predictors (9.4%). All the factors assessed therefore accounted for 47.9% of potential
157 predictors.

158

Table 1: Principal Component Analysis using 3 Component Extraction		
Income-related predictors	Skills-related predictors	Work-Hours-related predictors
Affluence	Skills relevant to specialty	Challenging diagnosis
Income	Intellectual content of specialty	Predictable work hours
Prestige	Career counseling	Private practice opportunity
Patient type		
Residency length		
Few specialist in specialty		
Pre-dental school career plans		
Space availability in specialty		
Pass rate within specialty		
Grants		

159

160 Table 1 shows the relationship of the various predictors based on component
161 analysis. The results informed grouping into income-related, skills-related and work-
162 hour related factors.

163

164 Skills and content were ranked highest by all respondents while affluence ranked least.

165

166 Average values of predictors rated by respondents ranged from 2.29 $\pm$ 1.23 to 4.09 $\pm$ 1.04.

167

Table 2: Average values of predictors as rated by respondents	
Skills	4.09 $\pm$ 1.04
Content	4.07 $\pm$ 0.93
Private practice	3.77 $\pm$ 1.09
Work Hours	3.61 $\pm$ 1.31

Challenging	3.51 ± 1.19
Income	3.51 ± 1.19
Prestige	3.31 ± 1.26
Patient type	3.15 ± 1.36
Few specialists	2.95 ± 1.34
Space availability	2.88 ± 1.33
Length	2.74 ± 1.21
Pre-school plans	2.72 ± 1.32
Grants	2.69 ± 1.31
Counseling	2.66 ± 1.29
Pass rate	2.64 ± 1.33
Affluence	2.29 ± 1.23

168
169 Table 2 shows the relative strengths of predictors as rated by respondents- skills being rated
170 highest and affluence rated lowest.

171

172

173 Skills and content were generally highly rated by respondents. Some predictors showed both
174 intra specialty and inter specialty high rankings while others showed either.

175

176

Table 3: Average Likert Ratings of Predictors by Specialty

	Conservative Dentistry	Dental Public Health	General Dental Practice	Oral and Max. Surgery	Oral Medicine	Oral Pathology	Orthodontics	pediatric dentistry	Periodontics
Skills	3.96 ± 0.93	4.17 ± 1.33	4.13 ± 1.13	4.09 ± 1.24	3.86 ± 1.07	4.40 ± 0.89	4.18 ± 1.05	4.30 ± 0.95	4.00 ± 1.00
Content	3.80 ± 1.00	4.50 ± 0.84	4.38 ± 0.52	4.35 ± 1.03	4.00 ± 0.82	4.20 ± 0.44	4.18 ± 0.66	3.50 ± 1.08	4.22 ± 0.44
Challenging	3.48 ± 0.96	3.00 ± 1.54	3.50 ± 1.41	3.83 ± 1.40	3.71 ± 0.95	3.20 ± 1.48	3.44 ± 1.03	3.20 ± 1.32	3.67 ± 1.12
Work Hours	3.56 ± 1.19	4.50 ± 0.55	4.25 ± 0.89	2.61 ± 1.37	3.43 ± 1.27	4.60 ± 0.89	3.81 ± 1.42	3.70 ± 1.06	4.00 ± 1.32
Patient type	2.96 ± 1.17	2.67 ± 1.97	3.37 ± 0.74	2.96 ± 1.49	2.57 ± 1.51	2.80 ± 1.30	3.00 ± 1.55	4.30 ± 0.82	4.00 ± 0.71
Income	3.80 ± 1.08	3.00 ± 1.26	3.38 ± 1.19	3.00 ± 1.31	3.14 ± 1.21	3.20 ± 0.84	4.13 ± 1.15	3.30 ± 0.67	4.00 ± 0.87
Affluence	2.32 ± 1.22	1.67 ± 1.21	2.38 ± 0.92	1.96 ± 1.26	1.71 ± 0.76	2.00 ± 1.22	2.50 ± 1.46	2.80 ± 0.92	2.67 ± 1.22
Length	2.52 ± 1.23	2.00 ± 1.26	3.25 ± 0.89	2.78 ± 1.38	2.43 ± 0.98	2.80 ± 1.30	2.75 ± 1.24	3.00 ± 1.05	3.33 ± 1.11
Private practice	4.20 ± 0.71	3.17 ± 1.47	4.50 ± 0.76	3.21 ± 1.41	3.71 ± 0.95	2.80 ± 0.84	4.13 ± 0.89	3.50 ± 0.71	3.67 ± 1.00
Prestige	3.48 ± 1.19	3.00 ± 1.41	2.75 ± 1.16	3.48 ± 1.31	2.14 ± 0.90	3.00 ± 1.58	3.63 ± 1.02	3.00 ± 1.05	3.89 ± 1.27
Few specialists	2.64 ± 1.08	2.17 ± 1.47	2.87 ± 1.64	2.87 ± 1.39	1.71 ± 0.49	3.40 ± 1.82	3.38 ± 1.20	2.90 ± 1.37	4.00 ± 0.87
Pre-school plans	2.68 ± 1.07	1.83 ± 1.17	2.13 ± 1.64	3.17 ± 1.44	2.43 ± 1.51	3.20 ± 1.48	2.44 ± 1.21	2.70 ± 0.95	3.00 ± 1.32
Counseling	2.64 ± 1.19	2.83 ± 1.83	2.13 ± 1.46	2.52 ± 1.41	2.86 ± 1.46	2.80 ± 0.84	2.44 ± 1.21	2.90 ± 1.10	3.56 ± 1.24
Space availability	2.72 ± 1.21	2.5 ± 1.38	2.25 ± 1.49	2.83 ± 1.47	2.00 ± 1.00	2.40 ± 1.14	3.25 ± 1.24	3.30 ± 0.95	3.67 ± 1.41
Pass rate	2.40 ± 1.19	3.00 ± 1.41	2.13 ± 1.55	2.52 ± 1.41	2.00 ± 1.15	2.80 ± 1.30	2.94 ± 1.29	2.90 ± 1.20	3.44 ± 1.42
Grants	2.44 ± 1.12	3.00 ± 1.90	2.37 ± 1.414	2.52 ± 1.51	2.29 ± 1.11	3.60 ± 0.89	2.75 ± 1.29	2.70 ± 1.06	3.33 ± 1.12

Key: Green=Strongest Inter-specialty rating
Yellow=Strongest Intra-specialty rating
Blue=weak Intra-specialty rating
Green+Yellow= Combined Strongest Inter & Intra specialty rating.

* Tel.: +xx xx 265xxxxx; fax: +xx aa 462xxxxx.
E-mail address: xyz@abc.com.

182
183 Other Specialties not included in table due to small numbers
184 Prosthodontics 2
185 Medical law and ethics 1

186
187 Preventive dentistry and Restorative/Child dental health were predominantly female-favored specialties while oral Surgery and Pathology were male dominated specialties.
188 ($P=0.000$)
189

Table 4: Specialty choice by gender

			Specialty			Total
			OMFS&Path	Preventive	Resto/Paedo	
Gender	Female	Count	6	21	34	61
		% within Gender	9.8%	34.4%	55.7%	100.0%
	Male	Count	22	10	19	51
		% within Gender	43.1%	19.6%	37.3%	100.0%
Total	Count	28	31	53	112	
	% within Gender	25.0%	27.7%	47.3%	100.0%	

190
191 Table 4 shows a strong male predilection for Oral and Maxillofacial Surgery/Pathology while Restorative Dentistry and pediatric dentistry as well as Preventive Dentistry
192 enjoyed a female predilection.
193 **$X^2=16.53$, $df=2$, $P=0.000$**
194
195 (
196 **Eventual specialty choices were positively associated with “Interesting” undergraduate subjects ($P=0.000$) but not with “stressful” undergraduate subjects**
197 **($P=0.762$).**

* Tel.: +xx xx 265xxxxx; fax: +xx aa 462xxxxx.
E-mail address: xyz@abc.com.

Table 5: Specialty choice by perceived interest & stress of subject at undergraduate level

		Specialty			Total
		OMFS&Path	Preventive	Resto/Paedo	
Interest	OMFS&Path	19	6	5	30
	Preventive	3	19	5	27
	Resto/Paedo	6	6	43	55
Total		28	31	53	112
Stress	OMFS&Path	8	12	23	43
	Preventive	4	3	5	12
	Resto/Paedo	16	16	25	57
Total		28	31	53	112

199 Table 5 shows the relative strengths of stress and interest in a subject during undergraduate years in shaping future postgraduate dental career. While interest played a
200 significant role, stress didn't.

201 Interest: $X^2=69.85$, $df=4$, $P=0.000$

202 **Stress: $X^2=1.85$, $df=4$, $P=0.762$**

203

204

205 DISCUSSION

206 The dearth of research into influencers of postgraduate dental training in Nigeria necessitated the current study. The authors attempted the large number of factors assessed
207 into manageable groups through factor analysis which resulted into three main groups – Income-related, Skills-related and Work-Hours-related predictors.

208

Counseling is part of the routine for getting into postgraduate dental education abroad in the developed world .[6] This is yet to be imbibed in Nigeria hence the current lopsidedness. The authors believe that the current study would serve as a baseline career counseling tool for would-be counselors in the various institutions involved in postgraduate dental training in Nigeria.

While possessing relevant skills and intellectual content were ranked highest by respondents corroborating a previous Jordan study among medical students, [7] these factors appeared to be of little predictive value since virtually all respondents rated them very highly.

In an attempt to identify predictors of postgraduate specialty among respondents therefore, we analyzed differences both within and across specialties. The predictive power of any factors was thus rated by how they fared within and across specialties. The most predictive factors ranked highest both within and across specialties.

Based on this analysis, private practice opportunity appeared highly predictive of a choice of postgraduate career in General dental practice. This corroborated a previous French survey of 1780 students [8] but was at variance with an American report which rated intellectual challenge and demographics higher predictors of a choice of General dental practice as a specialty.[9]

It would be necessary to replicate this study among a larger audience of Nigerian dentists to come to an evidence-based position for would-be postgraduate dental advisors.

Would-be dental postgraduate advisors might be interested in the multiple predictive ability of a strong concern for Predictable work hours.

In combination with a strong concern for private practice opportunity, predictable work hours appeared strongly predictive of a choice of postgraduate training in general dental practice. It appeared strongly predictive of a postgraduate career choice in Oral pathology when partly influenced by Pre-school plans and Grants for overseas training.

Again, in combination with the intellectual content playing a prominent role, along with opportunity for private practice, work hours appeared predictive of a choice of a dental postgraduate training choice in Dental public health. Work-life balance is a known influencer of postgraduate career choice among doctors [10] but unlike the previous study,[10] the current study failed to establish any gender bias in work-life balance considerations.($p>0.05$) The study found insignificant associations of career choice with stress and difficulty of the specialty or subject.[10]

A love for challenge appeared highly predictive for a choice of Oral and maxillofacial surgery. This factor appeared strongly predictive enough to singly predict a choice of postgraduate career in Oral and maxillofacial surgery among respondents, corroborating a previous report. [11]This might be connected with the “masculine” perception of a career in Oral and maxillofacial surgery which featured prominently in the current study ($P=0.000$) corroborating previous studies [12-14] It is pertinent for would be dental postgraduate advisors to note that “Challenge” (how challenging a specialty is perceived to be) predicted the choice of several postgraduate dental specialties. It therefore appeared to be multiply predictive among respondents. In combination with private practice opportunity, challenge was highly predictive of a postgraduate dental career choice in Oral medicine while it was highly predictive of a choice of Oral and maxillofacial surgery in combination with prestige- corroborating a previous study.[13]

While income as a single factor appeared strongly predictive enough of a choice of postgraduate training in orthodontics, it shares its predictive powers with conservative dentistry when in combination with Private practice opportunities. It is pertinent for would-be dental postgraduate advisors to note that though income appears singly predictive of choice of orthodontics, concerns for private practice opportunity are also highly important for choosing a postgraduate career in orthodontics. There is a striking resemblance between these findings and a survey of American orthodontic residents with about 90% opting for private practice rather than an academic career. [15]

Some factors influencing choice of postgraduate dental training in Nigeria appeared to be less predictive because their highest ranking across specialties did not coincide with highest ranking within the specialties. Such factors appeared to exert their predictive powers in a group rather than being individual predictors.

Overall, pediatric dentistry and periodontics appear to be relatively easy to predict based on our observations. The prediction is however even simpler for pediatric dentistry with two strong predictors- being female and patient type in combination with weaker predictors like skills and affluence. The female predilection for children specialties among doctors is well-documented in literature [12,16,17] and has been observed in a Nigerian study [4] but it has not been well researched among Nigerian pediatric dentists.

It's also pertinent for would-be dental postgraduate advisors to note that gender also appeared to have strong predictive power on other specialties. While surgery was positively associated with being male, preventive dentistry, pediatric dentistry and conservative dentistry were strongly associated with being female ($P=0.000$).

Interestingly, periodontics appeared special in many ways being the only specialty influenced by the presence of few specialists and being the only specialty with the highest number of multiple predictors most of which are not important to other specialties. The multiple, predictors included counseling, pass rate and space availability. Another striking difference between periodontics and the other specialties was an aversion for private practice. This is an important factor to note by would-be dental postgraduate advisors.

While clinical experiences in terms of what respondents found either stressful or interesting had a strong influence on their eventual specialty choice, the role of undergraduate experience in specialty choice is equivocal. While some studies report a link between the two [18,19], other workers believe that post-graduation experiences exert a greater influence on specialty choice [20]

However, though "interesting subjects" during undergraduate years had the predictive power on specialty choice, "stressful subjects" exerted no such predictive influence. This is probably because many respondents went ahead to study subjects they previously perceived as stressful during their undergraduate training. It is also possible that respondents had resits in subjects they considered stressful and had to read extra to pass this subjects thereby subsequently developing interest.

270 The suggestion for postgraduate dental advisors is in agreement with a study carried out among dental students in the United States which concluded that mentoring and
271 faculty encouragement affected the decision to pursue a postgraduate dental career.[21]

272

273

274

275

276 It is also pertinent to point out that the observation of the apparent multiple predictive power of “challenge” in postgraduate dental specialty choice seems to be more
277 predictive in deciding to take on postgraduate dental training rather than a predictor of specialty choice as corroborated by a recent study. [22]

278

279 The authors believe that adopting the predictive model as suggested in the current study would go a long way in assisting other countries passing through similar challenges
280 in building their undergraduate and postgraduate dental teaching team.

281

282 CONCLUSIONS

283 Skills and content are the most highly-rated factors affecting choice of postgraduate training among Nigerian dental graduates but they are not predictors. The deciding highly-
284 predictive factors appear to be income, work hours, private practice opportunity and to a lesser extent, affluence. There was a significant female predilection for pediatric
285 dentistry, restorative dentistry and preventive dentistry while oral and maxillofacial surgery enjoyed a male predilection. Periodontology on the other hand seemed to have
286 multiple relatively uncommon predictors.

287 The gradual shift from an oral surgery predilection to restorative dentistry informs the need to incorporate the office of postgraduate dental advisors into the postgraduate
288 dental curriculum in Nigeria.

289 LIMITATIONS

290 The number of the respondents limited the practicability of some statistical calculations which necessitated grouping and potential loss of comparisons.

291 The authors agree that the issues raised in this study might not have been “thoroughly” addressed but again this was not part of aim. Our aim was to highlight the current
292 unhealthy trend in specialty choice which is based popular opinion and at the same time propose the inclusion on postgraduate dental advisors who can work with the
293 predictive here proposed.

294
295

296 **RECOMMENDATIONS**

297 ✓ This study should be replicated among a larger number of Nigerian dentists.

298

299 ✓ Office of a Dental Postgraduate Advisor should be created in all dental postgraduate training institutions in Nigeria.**Competing interests: Nil**

300 SAS Institute. SAS 9. <http://support.sas.com/software/index.htm>. Accessed 10 April 2005.

301

302

303 **COMPETING INTERESTS:** Nil.

304

305 **AUTHORS' CONTRIBUTIONS**

306

307 **Authors contributions:**

308

309 All authors (1,2,3) involved with conceptualization, data collection and reading and editing of the final manuscript.The corresponding (4) was involved in conceptualization,
310 data collection, data analysis as well as and reading and editing of the final manuscript”

311

312 Consent .All authors declare that ‘implied informed consent was obtained from the patient (or other approved parties) for publication.

313

314 **ETHICAL APPROVAL : A QUESTIONNAIRE-BASED STUDY WITH APPROVAL GRANTED BY THE ORGANIZERS OF EVENTS WHERE QUESTIONNAIRES WERE**
315 **DISTRIBUTED AND FILLED.(WHERE EVER APPLICABLE)**

316

317

318

* Tel.: +xx xx 265xxxxx; fax: +xx aa 462xxxxx.

E-mail address: xyz@abc.com.

REFERENCES

1. Faculty of Dental Surgery, NPMCN: <http://fds-npmcn.edu.ng/Fellows>. Accessed 06 November, 2012.
2. Accredited dental schools. MDCN. <http://www.mdcnigeria.org/Dental%20Schools.htm>. Accessed 06 November, 2012.
3. McKay JC, Quiñonez CR. The feminization of dentistry: implications for the profession. *J Can Dent Assoc.* 2012; 78:c1.
4. Arowojolu, M.O, Aderinokun, G.A., Arotiba J.T. and Dosumu O.O. (Choice of Specialty Training Among Nigerian Dental Graduates. *Odonostomatologie Tropicale.* 1997; 77: 21-24.
5. PASW (SPSS) Statistics 18, Release 18.0.0 (July 30, 2009).
6. Regional and Specialty Advisors.<http://www.rcseng.ac.uk/fds/faculty-advisers>. Accessed 06 November, 2012.
7. Khader Y, Al-Zoubi D, Amarin Z, Alkafagei A, Khasawneh M, Burgan S, El Salem, K, Omari M. Factors affecting medical students in formulating their specialty preferences in Jordan. *BMC Med Educ.* 2008; 8:32.
8. Weissman C, Zisk-Rony RY, Schroeder JE, Weiss YG, Avidan A, Elchalal U, Tandeter H. Medical specialty considerations by medical students early in their clinical experience. *Isr J Health Policy Res.* 2012; 1(1):13.
9. Kassebaum DG, Szenas PL, Schuchert MK. Determinants of the generalist career intentions of 1995 graduating medical students. *Acad Med.* 1996; 71(2):198-209.
10. Goldacre MJ, Goldacre R, Lambert TW. Doctors who considered but did not pursue specific clinical specialties as careers: questionnaire surveys. *J R Soc Med.* 2012 Apr; 105(4):166-76.
11. Aasland OG, Røvik JO, Wiers-Jenssen J. [Motives for choice of specialty during and after medical school]. *Tidsskr Nor Laegeforen.* 2008; 128(16):1833-7.

338

- 339 12. Fukuda Y, Harada T. Gender differences in specialty preference and mismatch with real needs in Japanese medical students. BMC Med Educ. 2010; 10:15.
- 340 13. Scott IM, Matejcek AN, Gowans MC, Wright BJ, Brenneis FR. Choosing a career in surgery: factors that influence Canadian medical students' interest in pursuing a
- 341 surgical career. Can J Surg. 2008 Oct; 51(5):371-7.
- 342 14. Maseghe Mwachaka P, Thuo Mbugua E. Specialty preferences among medical
- 343 students in a Kenyan university. Pan Afr Med J. 2010; 5:18.
- 344 15. Noble J, Hechter FJ, Karaikos N, Wiltshire WA. Motivational factors and future life plans of orthodontic residents in the United States. Am J Orthod Dentofacial Orthop.
- 345 2010 May; 137(5):623-30.
- 346 16. Bittaye M, Odukogbe AT, Nyan O, Jallow B, Omigbodun AO. Medical students' choices of specialty in the Gambia: the need for career counseling. BMC Med Educ.2012;
- 347 12(1):72. [Epub ahead of print]
- 348 17. Minkovitz CS, Chandra A, Solomon BS, McDonnell KA, Silver GB, Tonniges TF. Community pediatrics: gender differences in perspectives of residents. AmbulPediatr.
- 349 2006; 6(6):326-31.
- 350 18. A. Saigal P, Takemura Y, Nishiue T, Fetters MD. Factors considered by medical students when formulating their specialty preferences in Japan: findings from a
- 351 qualitative study. BMC Med Educ. 2007; 7:31.
- 352 19. Al-Heeti KN, Nassar AK, Decorby K, Winch J, Reid S. The effect of general surgery clerkship rotation on the attitude of medical students towards general surgery as a
- 353 future career. J Surg Educ. 2012; 69(4):544-9. doi: 10.1016/j.jsurg.2012.04.005.
- 354 20. Nuala Campbell, Ahmed Sabra, Lorraine Alderson, Stephanie Bull. Choosing a specialty. BMJ careers. 2009. [http://careers.bmj.com/careers/advice/view-](http://careers.bmj.com/careers/advice/view-article.html?id=20000585)
- 355 [article.html?id=20000585](http://careers.bmj.com/careers/advice/view-article.html?id=20000585). Accessed 2012.11.07.
- 356 21. Scarbecz M, Ross JA. The relationship between gender and postgraduate aspirations among first- and fourth-year students at public dental schools: a longitudinal
- 357 analysis. J Dent Educ. 2007 Jun;71(6):797-809.
- 358 22. Saeed S, Jimenez M, Howell H, Karimbux N, Sukotjo C. Which factors influence students' selection of advanced graduate programs? One institution's

359
360 experience. J Dent Educ. 2008 Jun;72(6):688-97.
361
362 ”
363 -
364