

1 *Research paper*

2 *Can We Predict Postgraduate Dental Training Choice?; The Nigerian Experience*

3 **Abstract**

4 Objectives

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

12 Methods

13 Participants were dentists attending compulsory continuing professional development courses
14 at different centres across Nigeria. Graded Likert responses of 16 potential predictors of
15 dental postgraduate training choice were obtained through self-administered questionnaires
16 filled by 112 Nigerian dentists (mean age of 35.21 years $\pm$ 8.21). Data were analyzed after
17 necessary recodes to allow for meaningful statistical analysis. The predictive power of each
18 factor was determined by inter-specialty and intra-specialty comparisons.

19 Results

20 A total of 51 males and 61 females participated in the study with predictors rated from 2.29 $\pm$
21 1.23 to 4.09 $\pm$ 1.04.

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

29 Conclusions

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

38 Keywords: Postgraduate dental training, Nigeria, predictors.

39 *Can We Predict Postgraduate Dental Training Choice?; The Nigerian Experience*

40 **BACKGROUND**

41 Lop-sidedness in the number and distribution of specialists is a looming crisis for
 42 undergraduate and postgraduate dental education in Nigeria. Choice of dental specialties

43 appears to be based on popular opinions. Unfortunately, factors affecting such choices among
44 Nigerian dental graduates have been understudied. While some specialties attract lots of
45 residents, some other specialties grapple with only a handful of specialists.[1] For a long
46 time; there was also lopsidedness in the distribution of dental schools. The recent
47 accreditation of dental schools in the North and south-eastern geopolitical zones of the
48 Nigeria was a bold step towards correcting the anomaly in geopolitical distribution.[2]

49

50 Unfortunately, the sudden addition of three dental schools to the system has not been matched
51 with a commensurate increase in the number of undergraduate and postgraduate teachers and
52 trainers.

53

54 The over-dependence of the newly accredited dental schools on visiting lecturers points to the
55 problem with number while the complete absence of certain specialties in many dental
56 schools attests to the distribution crisis among the few existing specialists thus signaling a
57 looming crisis in the availability of undergraduate teachers and postgraduate trainers in
58 Nigerian dental schools and tertiary dental hospitals.

59

60 Creation of new dental schools will only be meaningful with adequate undergraduate and
61 postgraduate dental teachers. At present, there appears to be no framework of determining
62 predictors of choice of postgraduate dental training in Nigeria. It is the opinion of the authors
63 that understanding such predictors would greatly assist in planning. Postgraduate dental
64 trainers need a proper understanding of such predictors in order to achieve “targeted career

65 counseling.” Such career counseling would seek to influence and “shape” the choices of
66 dental students into favoring areas that are currently suffering from gross under-staffing.
67

68 The silent feminization of dentistry [3] which appears to be creeping into Nigeria appears to
69 have worsened the distribution problem. It is an unpublished perception among postgraduate
70 dental doctors that pass rates at both postgraduate medical colleges in Nigeria appear to have
71 declined over years. Though not backed by evidence, this factor is potentially capable of
72 affecting enrollments for postgraduate dental training. Understanding predictors of
73 postgraduate dental training choice as proposed in this study will assist undergraduate trainers
74 to work with postgraduate dental colleges in “influencing” future postgraduate dental career
75 choices among dentists while still in school.

76
77 Previous workers [4] advocated dental counseling as a panacea for the lopsidedness in
78 numbers per specialty. Because this piece of advice is yet to be heeded almost two decades
79 later, the few specialists being produced by the postgraduate colleges appear to have a
80 penchant for certain specialties to the detriment of others.

81
82 The authors of the current study believe that career counseling in postgraduate dental
83 education should be introduced. As stated earlier however, such counseling would only be
84 meaningful when backed by a predictive data of the likely choice of postgraduate dental
85 training.

86 The absence of research material in this regard is evidence to show that both the postgraduate
87 medical colleges and the postgraduate trainers are unaware of the looming crisis in the
88 number and distribution of undergraduate and postgraduate dental trainers in Nigeria.

89

90 The current study is an attempt to assess predictors of specialty choice among Nigerian dental
91 graduates with the hope that it will provide a database for understanding predictors of
92 postgraduate dental training in Nigeria.

93

94 **METHODS**

95

96 **Study Population, Setting and Instrument**

97

98 All participants were dentists working in undergraduate and postgraduate training centers as
99 well as dentists in private practice and government secondary and tertiary dental centers
100 across Nigeria. A literature search was conducted to deduce factors considered important to
101 dentists within and outside Nigeria. The questionnaires were validated using a pretest among
102 dentists in one of the Teaching hospitals where the study was conducted. The participants
103 filled self-administered questionnaires which assessed several potential predictors of
104 postgraduate dental training such as;

- 105 1. Interesting/stressful subject during undergraduate training
- 106 2. Gender
- 107 3. Relationship
- 108 4. Skills-related factors

5. Work-challenge related factors

6. Affluence –related factors

Sampling

The sampling method was purposive using all consenting participants attending continuing professional development programs and conferences. Since the inclusion criterion for the study was being a dentist, the authors considered it extremely time-saving to employ the use of self-administered questionnaires among dentists gathering for different events such as mandatory continuing professional development programs as well as dental specialty conferences. The sampling method was therefore non-random. It was ensured that each dentist recruited into the study only filled the questionnaire once.

Research questions

1. What affects postgraduate dental training choice among Nigerian dental graduates?
2. Are these factors predictable?
3. What is the current role of counseling in choice of postgraduate dental education
4. How can the Nigerian experience benefit other countries having similar challenges

Consent and confidentiality

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

Statistical analysis

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

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

Factor analysis was performed to identify groups of predictor. Potential predictors were assigned to the three resultant groups based on their score in the component matrix. The three groups were then renamed (based on the potential predictors within the groups) into Income-related predictors, Skills-related predictors and Work-Hours-related predictors.

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

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

153

154 For the purpose of meaningful statistical analysis, specialties were grouped as follows; Oral
155 & Maxillofacial surgery/Pathology, Restorative dentistry/Pedodontics (comprising
156 conservative, Prosthodontics, orthodontics and pedodontics), Preventive dentistry (All other
157 courses including periodontics, General Dental Practice, Dental public health).

158

159 The grouping of Oral and maxillofacial surgery and Oral pathology was based on traditional
160 classifications of these two specialties in many dental schools in Nigeria. Orthodontics and
161 pedodontics have traditionally been together under child dental health. Grouping of these
162 along with restorative dentistry was purely arbitrary for the sake of statistical analysis and
163 other specialties were grouped under preventive dentistry.

164 All p values ≤ 0.05 were considered statistically significant.

RESULTS

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

Factor analysis produced 3 prominent groups of potential predictors namely Income-related predictors (accounting for 27.7%), Skills-related predictors (10.8%) and Work Hours-related predictors (9.4%). All the factors assessed therefore accounted for 47.9% of potential predictors. **(Table 1 goes here)**

Skills and content were ranked highest by all respondents while affluence ranked least. Average values of predictors rated by respondents ranged from 2.29 ± 1.23 to 4.09 ± 1.04 . **(Table 2 goes here)**

Skills and content were generally highly rated by respondents. Some predictors showed both intra specialty and inter specialty high rankings while others showed either. **(Table 3 goes here)**

Preventive dentistry and Restorative/Child dental health were predominantly female-favored specialties while oral Surgery and Pathology were male dominated specialties. (p=0.000)**(Table 4 goes here)**

Eventual specialty choices were positively associated with “Interesting” undergraduate subjects ($p=0.000$) but not with “stressful” undergraduate subjects ($p=0.762$). (**Table 5 goes here**)

DISCUSSION

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 into manageable groups through factor analysis which resulted into three main groups – Income-related, Skills-related and Work-Hours-related predictors.

Counseling is part of the retinue for getting into postgraduate dental education abroad. [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 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 appear 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 corroborates a previous French survey of 1780 students [8] but 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 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 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.($p>0.05$)

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 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. The association with prestige corroborates 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, Pedodontics and periodontics appear to be relatively easy to predict based on our observations. The prediction is however even simpler for pedodontics 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 pedodontists.

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, pedodontics 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.

276

277 While clinical experiences in terms of what respondents found either stressful or interesting
278 had a strong influence on their eventual specialty choice, the role of undergraduate
279 experience in specialty choice is equivocal. While some studies report a link between the two
280 [18.19], other workers believe that post-graduation experiences exert a greater influence on
281 specialty choice [20]

282

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

289

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

293

294

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

299

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

303

304 **CONCLUSIONS**

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

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

314 **LIMITATIONS**

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

317 The authors agree that the issues raised in this study might not have been “thoroughly”
318 addressed but again this was not part of aim. Our aim was to highlight the current unhealthy

319 trend in specialty choice which is based popular opinion and at the same time propose the
320 inclusion on postgraduate dental advisors who can work with the predictive here proposed.

321

322

323 **RECOMMENDATIONS**

324 1. This study should be replicated among a larger number of Nigerian dentists.

325

326 2. Office of a Dental Postgraduate Advisor should be created in all dental postgraduate
327 training institutions in Nigeria.

Competing interests: Nil

Authors contributions:

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, data collection, data analysis as well as reading and editing of the final manuscript

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TABLES

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		

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

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

426

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

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	Pedodontics	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.

Other Specialties not included in table due to small numbers

Prosthodontics 2

Medical law and ethics 1

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%

Table 4 shows a strong male predilection for Oral and Maxillofacial Surgery/Pathology while Restorative Dentistry and Pedodontics as well as Preventive Dentistry enjoyed a female predilection.

$X^2=16.53$, $df=2$, $p=0.000$

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

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 significant role, stress didn't.

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

Stress: $X^2=1.85$, $df=4$, $p=0.762$