Attitude and Knowledge of Undergraduate Students of South Coastal Karnataka and Kerala Region towards Various Specialisations in Dentistry- A Cross Sectional Study

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ABSTRACT

BACKGROUND

Dentistry is a skill-based profession. Various specialisations are found in this field and several short-term certificate courses are also taking birth to cater to the need of newly graduated student population who want to set up practices afresh. We wanted to assess the attitude and knowledge of undergraduate dental students towards various specialisations.

METHODS

A cross-sectional survey of all final year dental undergraduates and house surgeons was carried out by distributing semi-structured questionnaire to 212 undergraduate dental students from various colleges in South Coastal Karnataka and Kerala region. Statistical analyses were carried out using chi-square test and Fisher's exact test.

RESULTS

The study found that 89.6% (n= 190) respondents desired to pursue a specialisation. 91% (n=111) of the total final year students and 87.8% (n=79) of total interns desired to specialise. Majority of them were females 76.9 % (n=163). Oral surgery was the first choice of specialisation amongst final years and conservative & endodontics among interns. Least preferred was oral pathology.

CONCLUSIONS

Attitude and knowledge of students varied widely with respect to gender, year of study, and external influencing factors. Females were more inclined to specialisation despite the obstacles they would face.

KEY WORDS

Specialisation, Dentistry, Attitude, Cross-Sectional Survey, Knowledge

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DOI: 10.14260/jemds/2020/441

How to Cite This Article:

Prasad DA, Jayasoman S, Prasad DK.
Attitude and knowledge of undergraduate
students of south coastal Karnataka and
Kerala region towards various
specialisations in dentistry- a cross
sectional study. J. Evolution Med. Dent. Sci.
2020;9(29):2023-2027, DOI:
10.14260/jemds/2020/441

Submission 29-01-2020,
Peer Review 13-06-2020,
Acceptance 19-06-2020,
Published 20-07-2020.

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BACKGROUND

Dentistry is an emerging career option in India. Under-graduation alone is not enough to hone the technical skills and expertise of students. With the advent of technology and internet-based knowledge, the aesthetic and functional needs of patients have increased. People are aware of the different treatment options available. Awareness of consulting a specialist is more and patients seldom go to a general practitioner. Pursuing a speciality has become more necessary than ever. This calls for the students need to specialise.

Compared to intake of undergraduate seats, post graduate intake is less¹. So, the opportunity narrows. Hence students must opt for lateral short-term courses to improve technical skills. There are eight specialisations to choose from namely clinical subjects like Prosthodontics, Endodontics, Oral and Maxillofacial Surgery, Periodontics, Pedodontics, Orthodontics along with non – clinical subjects like Oral Pathology & microbiology and Oral Medicine & Radiology. A variety of certificate courses like Implantology, Treatment of temporomandibular disorders, Aesthetics, Dental Photography, Smile designing etc. are also available. In India, there are centralised exams conducted for post-graduation and entries into these are based purely on merit. Pursuing post-graduation depends on a multitude of factors. Along with their personal interest, their family background and economic status plays a pivotal role. Since students are partially dependent on their parents to financing their post-graduation, their financial liabilities should be considered as an important factor.

The choice of a medical or a dental career is motivated beyond doubt by the financial and social status of those professions.² While some dental students are primarily driven by a desire for status, prestige, varied work, and the opportunity to put theory into practice, benevolent intentions regarding helping people and improving their appearance serve as incentive for others. Regardless of their reason for choosing dentistry as a career, the expectation of a secure and bright professional future is what keeps most students motivated during their dental education³. It is important to understand students' motives for choosing dentistry and their views concerning the future of their profession to preserve a motivated workforce.^{4,5} Possessing skills in the field is also a reason to opt for specialisation.⁶ Money, self-interest and encouragement were reasons of students from Japan and Sweden to opt for specialisation.⁷ Social standing and status were motivational factors for students from Chennai.⁸ The most dominant motivational factors for students from Canada, were the desire for a financially lucrative profession and job security, followed by a desire to work with or help people.⁹ In Wales students said they chose dentistry because of the opportunity to utilize their manual and technical skills, followed by the opportunity to help people and be self-employed and independent. In Scandinavian countries factors motivating students to choose dentistry as a career were a desire for varied work, the opportunity to put theory into practice, and altruism.¹⁰ In a study in Iran a significant relationship was found between students' interest in dentistry and their personal attitudes about the future of the profession.¹¹

In India very few studies have been conducted to understand the attitude and knowledge about undergraduates in which they indicate a wish to specialise or opt for general practice, the reasons for their choices, and their reported preparedness for future speciality training.

Aim

Aim of this study was to assess the attitude and knowledge of undergraduate students towards various specialisations, in dental colleges in South Coastal Karnataka and Kerala region.

Objectives

- To assess the attitude of undergraduate students towards pursuing specialisation.
- To determine the factors affecting choice of specialisation.
- To assess the factors influencing the choice between pursuing specialisation or certificate courses.

METHODS

A sample of 212 undergraduate students of both genders who were willing to participate in the study from South Coastal Karnataka and Kerala were included. The sample size was determined using the formula $Z_{1-\alpha/2} p(1-p)/d^2$ where $Z_{1-\alpha/2}$ is the normal standard variate, p is the expected proportion in population based on previous studies and d is the absolute error or precision. The study was a cross-sectional questionnaire with convenience sampling method conducted within a period of 6 months duration. A self -compiled questionnaire relevant to the present study was prepared and subjected to face validity. Each participant was given the questionnaire and the investigator assured completeness of the record. A single investigator was responsible for collecting the report to avoid bias. Informed consent was obtained from each subject and anonymity of responses was assured to the participants.

Statistical Methods

Data collected were analysed using IBM SPSS Statistics, Version 24 (Armonk, NY: IBM Corp). Descriptive data were presented in the form of frequency and percentages. Comparisons of the categorical variables between the gender and category groups were performed using the Chi Square test and Fishers test. P value < 0.05 was considered as statistically significant.

RESULTS

Response	Category		Total	Chi Square Test	
	Final Year	Intern		Chi Square Value	P-value
Yes	111 91.0%	79 87.8%	190 89.6%	0.57	0.45(NS)
No	11 9.0%	11 12.2%	22 10.4%		

Table 1. Comparison of Percentage of Willingness to Pursue Specialization between Final Year Students and Interns

*p<0.05 Statistically Significant, p>0.05 Non-Significant, NS

Response	Category		Total	Chi Square Test	
	Final Year	Intern		Chi Square Value	P-Value
Yes	88 72.1%	57 63.3%	145 68.4%	1.86	0.17 (NS)
No	34 27.9%	33 36.7%	67 31.6%		

Table 2. Comparison of Speciality Exposure in Their Respective Colleges between Categories

*p<0.05 Statistically Significant, p>0.05 Non-Significant, NS

	Category		Total	Chi-Square Test	
	Final Years	Interns		Chi-Square Value	P-Value
Choice of Specialization	Clinical	117 95.9%	82 91.1%	199 93.9%	2.07 0.15(NS)
	Non-clinical	5 4.1%	8 8.9%	13 6.1%	
First Choice of clinical subject for specialization	Oral surgery	37 30.3%	17 18.9%	54 25.5%	8.46 0.13(NS)
	Orthodontics	29 23.8%	22 24.4%	51 24.1%	
	Endodontics	31 25.4%	32 35.6%	63 29.7%	
	Prosthodontics	11 9.0%	3 3.3%	14 6.6%	
	Periodontics	5 4.1%	6 6.7%	11 5.2%	
	Pedodontics	9 7.4%	10 11.1%	19 9.0%	
	Oral surgery	28 23.0%	13 14.4%	41 19.3%	
Second Choice of clinical subject for specialisation	Orthodontics	35 28.7%	28 31.1%	63 29.7%	3.05 0.55(NS)
	Endodontics	23 18.9%	16 17.8%	39 18.4%	
	Prosthodontics	17 13.9%	14 15.6%	31 14.6%	
	Periodontics	19 15.6%	19 21.1%	38 17.9%	
first choice of non-clinical subjects for specialisation	Oral pathology	22 18.0%	8 8.9%	30 14.2%	12.05 0.007*
	Oral radiology	62 50.8%	34 37.8%	96 45.3%	
	Phd/research	17 13.9%	26 28.9%	43 20.3%	
	Not applicable	21 17.2%	22 24.4%	43 20.3%	

Table 3. Preferred Branches for Specialisation between Categories

*p<0.05 Statistically Significant, p>0.05 Non-Significant, NS

Demographics

Questionnaires were answered by (n=212) respondents. Out of which majority were in the age group of 21-22 years. Categorically (57.5%) respondents belonged to final year and (42.5%) were interns. (76.9%) respondents were female.

Desire to Pursue Speciality

89.6% (n= 190) respondents desired to pursue a specialisation out of which 91% (n=111) were final year students and 87.8% (n=79) were interns. (Table 1)

Speciality Exposure in Their Respective Colleges

Out of (n=212) respondents, majority 68.4% (n=145) of them felt that their respective college provided enough encouragement and exposure to pursue specialisations. Of this 72.1 percent were in the final year and 63.3 percent were interns. (Table 2)

Choice of Specialisations

Out of all the respondents, 93.9% (n=199) preferred to pursue specialisation in clinical subjects, of which 95.9% (n=117)

belonged to final year and 93.9% (n=82) were interns. Amongst the final year students, Oral surgery was the first choice of specialisation whereas among interns it was Conservative & Endodontics. Also, the second most popular choice of subject among final years and interns was Orthodontics. In non-clinical subjects the most popular choice for specialisation was Oral Radiology among both the final year students and interns. (Table 3). It was also observed that majority of male students (36.7%) preferred Orthodontics as their first choice of specialisation whereas female students chose conservative dentistry as their first choice (31.9%). (Table 4).

	Subject	Gender		Total	Fishers Value
		Male	Female		
Choice of Specialization	Clinical	46 93.9%	153 93.9%	199 93.9%	1.00(NS)
	Non-clinical	3 6.1%	10 6.1%	13 6.1%	
	Oral surgery	11 22.4%	43 26.4%	54 25.5%	
	Orthodontics	18 36.7%	33 20.2%	51 24.1%	
First Choice of clinical subject for specialization	Conservative	11 22.4%	52 31.9%	63 29.7%	0.003*
	Prosthodontics	7 14.3%	7 4.3%	14 6.6%	
	Periodontics	2 4.1%	9 5.5%	11 5.2%	
	Pedodontics	0 0.0%	19 11.7%	19 9.0%	
Second Choice of clinical subject for specialisation	Oral surgery	9 18.4%	32 19.6%	41 19.3%	6.71 0.15(NS)
	Orthodontics	20 40.8%	43 26.4%	63 29.7%	
	Conservative	6 12.2%	33 20.2%	39 18.4%	
	Prosthodontics	9 18.4%	22 13.5%	31 14.6%	
	Pedodontics	5 10.2%	33 20.2%	38 17.9%	
	Oral Pathology	8 16.3%	22 13.5%	30 14.2%	
	Oral Radiology	22 44.9%	74 45.4%	96 45.3%	
first choice of non-clinical subjects for specialisation	PHD	11 22.4%	32 19.6%	43 20.3%	0.86 0.84(NS)
		8 16.3%	35 21.5%	43 20.3%	
	N/A				

Table 4. Preferred Branches for Specialisation between Genders

*p<0.05 Statistically Significant, p>0.05 Non-Significant, NS

	Factors	Category		Total	Chi Square Test	
		Final Year	Intern		Chi Square Value	p-value
Factors most likely to affect decision on specialization	Family and friends' expectations	12 9.8%	5 5.6%	17 8.0%	8.62	0.04*
	Financial reasons	30 24.6%	14 15.6%	44 20.8%		
	Further studying	16 13.1%	6 6.7%	22 10.4%		
	Personal interest	64 52.5%	65 72.2%	129 60.8%		
	Too time consuming	18 14.8%	16 17.8%	34 16.0%		
	Too expensive	64 52.5%	32 35.6%	96 45.3%		
	Too competitive for further studying	11 9.0%	15 16.7%	26 12.3%		
Discouraging Factors	Saturation of specialist	29 23.8%	27 30.0%	56 26.4%	6.80	0.08(NS)

Table 5. Factors Affecting the Choice of Specialisation between Categories

*p<0.05 Statistically Significant, p>0.05 Non-Significant, NS

Factors Influencing Decision to Specialise

Of the given factors, majority of students in both final year and internship cited their personal interest as a major factor which would affect their decision to specialise. This was followed by financial reasons in both categories. A major deterring factor to pursue specialisation among both interns and final years was that they found it to be expensive to pursue further studies. (Table 5).

Stress as a Factor

A total of 72.2% (n=153) respondents felt that pursuing post-graduation was stressful of which 76.7% (n=69) were interns and 68.9% (n=84) belonged to final year.

Perception of Different Fields

The students' responses were sought regarding their perception of fields with best future in terms of personal quality of life, patient's quality of life and financial benefits. Majority of final year students, 33.3% (n=38) felt Orthodontics was the branch which was the best in terms of personal quality of life whereas 32.6% (n=29) chose Endodontics. Concerning patient's quality of life, both final years (34.3%) and interns (41.1%) chose Endodontics. The specialisation with the best future in terms of financial benefit was found to be Orthodontics by 55.7% respondents who were in final year and 48.8% respondents who were interns.

DISCUSSION

The questionnaire was designed to cover demographic characteristics, speciality preferences, exposure to various specialities and factors that influenced career preferences such as financial background, family background, and peer pressure. Final year and house surgeons were included in the study since they would have enough exposure and knowledge. As a sign of change in the student mentality, 89.6% students in the present study were inclined towards choosing specialisation in future.

This finding was similar to findings of Ravi K et al, Khami et al and Gallagher et al.^{8,11,12} But the trend is different from the results found by Karibe et al⁷ where only 37% and 17 % of Swedish and Japanese students preferred specialisation in dentistry respectively. This result was also in contrast from one reported by Aditya S,¹³ who found a willingness of 35.1% to pursue post-graduation among dental interns from India. There are also studies conducted where more than half the students were undecided whether to pursue specialisation or not.¹⁴ Out of a total of 190 students who intended to pursue specialisation, 144 respondents were female, a trend shown in other studies as well.⁶ Decision to pursue specialisation can be affected by multiple factors, one being the exposure and encouragement from their respective colleges. In this case around sixty eight percent respondents felt that they had sufficient exposure and encouragement from their colleges. Previous studies have proved the positive effect of encouragement on students.¹⁴

In India, clinical subjects in dentistry include six subjects which comprise of oral surgery, orthodontics, conservative and endodontics, prosthodontics, periodontics and pedodontics. Out of this the most popular amongst final year was found to be oral surgery and amongst interns it was found to be conservative dentistry and endodontics. Second most popular choice of subject amongst both interns and final year was orthodontics. This was in concurrence to a study done in the UK.^{15,14} All the clinical subjects are taught in the final year in under-graduation; hence it can be assumed that the approach towards the subject by a college and interaction with the clinical staff could be a decision-making factor for these undergraduate students. In India, oral surgery is a male dominated field with fewer female surgeons practising, in this study majority of female students preferred oral surgery as their first choice of specialisation whereas male students preferred Orthodontics. This was in concurrence with another study conducted by Sharma et al,⁶ Ravi K et al⁸ and Garla BK.⁵ In contrast to this finding, in other study by Karibe H et al,² oral surgery was found to be very unpopular. It can be assumed that some graduates won't prefer oral surgery due to reasons like sight of blood, overnight duties and hectic procedures like handling of trauma cases⁶. Orthodontics as well as endodontics and conservative dentistry were the second most preferred subjects. Aesthetic concern and relief from pain/maintenance of normal function of oral cavity may be the prime reasons behind seeing an orthodontist and endodontist respectively. These branches seem to yield a good financial reward as well. Periodontics was found to be the least popular choice of specialisation. Non-clinical subjects include oral radiology, oral pathology and public health dentistry. Oral radiology was found to be the most popular non-clinical subject for choice of specialisation.

Personal interest in the subject attributing to 60.8% of the respondents, was found to be the most important factor influencing the choice of speciality, followed by financial reasons (20.8%) This finding was in concurrence with that found out by Huda N et al¹⁶ and Chang PY¹⁷ et al in Pakistani and Taiwanese dental students, respectively. Meanwhile 45.3% respondents felt that expensive post graduate courses were a major deterring factor from choosing to specialise. Students were also evaluated regarding their perception of field with best future in terms of personal quality of life, patient's quality of life and financial benefits. In terms of personal quality of life orthodontics was the most preferred subject and patient's quality of life endodontics was favoured. When it came to financial benefits again orthodontics was preferred. These results were similar to studies conducted at Harvard.

As perception is subjected to change over time, there is a need of longitudinal studies to capture the dynamics and changes in attitudes within the same group of students at different points during their studies. The self-reported nature of the data could have resulted in information bias. Keeping in mind these limitations, further research work needs to be carried out to find out the changing nature of perceptions regarding future specialisations and unidentified factors impact on graduates' career preferences in the field of dentistry.

CONCLUSIONS

This study shows that a major number of undergraduates had an intention to specialise, with Restorative Dentistry and Orthodontics being the most popular subjects, although some were still undecided at this stage. Age and parental occupation did not have any influence on intentions to specialise. Reasons behind students' willingness to pursue post-graduation in respective choice of subject was mostly due to their personal interest. A variety of factors appear to inspire dental students to choose a future dental speciality. So, further study is needed with larger sample size and different areas to confirm the trend of change of behaviour regarding future speciality choice and associated factors among dental students with years of study of dentistry.

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