



# Millennial dental education: Insight into dentistry from the perception of interns

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## Abstract

**Aim:** To evaluate the field of dentistry from the perception of interns and to investigate dental intern's confidence in their self-perceived speciality, to understand student's perspective on dental education and work preparedness.

**Purpose of research:** To identify dental intern's motivation for choosing dentistry and future aspirations after dentistry. The study objective was to assess the confidence level of interns in the basic dental procedures thus evaluating the work preparedness among the interns.

**Materials and Methods:** A questionnaire survey which was converted into google form was circulated amongst various dental college interns in Maharashtra and the questionnaire was divided into 5 sections consisting of variable questions. The statistical analysis was done using statistical package for social science (SPSS) version 21.

**Results:** The study showed maximum respondent were in 22 to 24 age group, commonly females. (72%, n=295) (**P value=0.0024**) The most influencing factor was self-interest (25.80%, n=102) and most motivating factor was interest in medical field (20.90%, n=86) for majority of the interns who participated in the study. A significant number of interns (20.7%, n=85) wanted to do post graduation/MDS in India and were interested in private set (16.3%, n=67) up or working in clinic (11.9%, n=61). There was also a need observed by interns (93.9%, n=385) for conduction of educational programmes by institutions. (**P value=0.0006**) The study also depicted a broader career opportunity after dentistry by intern's response to do post graduation in abroad, practice abroad and also involvement in research work. The student attitude towards the profession was satisfactory. On assessing the confidence level of student's majority (41%, n=168) of the interns were confident in their work, which was followed by very confident (36%, n=147) group of interns.

**Conclusion:** The study yielded results which showed the interns demographic data, highlighted the

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motivation and influencing factor for choosing dentistry, the attitude of interns towards the profession and the confidence level of interns in basic dental procedures.

**Keywords:** Dental education, motivation, questionnaire, attitude

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## Introduction

Every field in medical science beholds a lot of efforts, skilled curriculum and tremendous years of practice to excel in the competitive world outside and dentistry as a branch is continuously evolving over the years.<sup>(1)</sup> The main aim of dental education is to prepare competent dental surgeons who are well versed, capable of performing dental practice on their own and providing comprehensive dental care to the society.<sup>(2)</sup> The graduating interns should be equipped with motivation, achieve their goal, accomplish some extent of mastery in the field and thus attain academic success fruitfully.<sup>(3)</sup> Dentistry as a professional career may change over time in relation to skills, team-working, continual innovation in techniques, and materials.<sup>(4)</sup> Indian Dental Association also focuses on educational programs to advocate, promote, and encourage continuing dental education by enhancing the knowledge and skills of dental professionals. IDA members include dental professionals, dental students, and affiliate. The organisation focuses on public oral health through various IDA Health Initiatives and National Oral Health Programme. American Dental Educational Association (ADEA), which represent the body of dental educational institutions in USA, has recognised student's input as critical in all aspects of dental education.<sup>(5)</sup>

The survey focuses on various multifactorial aspects affecting the interns who are the most critical parameter which can be assessed to know the reason to choose dentistry, the student's attitude towards the profession, the limitations, the skills acquired and at last the motivating factors associated with the same for a given age group. The aim of the dental curriculum overall India should be that the interns or graduated students can perform basic dental procedures like scaling and root

planing, extractions, impression making, restorations, etc. There is a strong need for the changes in the dental curriculum, constant revision and validation by experts. The questionnaire here is divided into various sections which deals with different aspects influencing the overall choice making, motivating factors, clinical confidence and future career options after dentistry. Innovative strategies to cultivate and support student learning should be highlighted through educational programmes and institutes should facilitate environment that leads to self-directed learning and encourage professional development and patient welfare.<sup>(6)</sup>

This study will help to assess the confidence and knowledge of the graduating interns and also highlight the limitations faced by them and to determine the readiness to practice after graduation amongst the dental interns.

## Materials and methods

### Data setting:

The present study was conducted in form of a questionnaire survey and the questionnaire was prepared in accordance with various domains of dentistry which was needed to be evaluated in this study and was circulated to interns of various dental colleges in Maharashtra. The study aimed at making this questionnaire survey available to maximum number of interns.

### Participant's recruitment:

The questionnaire was converted into a google form and was sent through email to interns of various dental colleges. The questionnaire was circulated amongst 450 dental interns of age group 22 to 24 years and they were given a time of 1 week to revert back. Information sheets about the study objectives were distributed to the participants; to ensure that they were well informed and their participation was

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voluntary in nature. After 1 week a total of 411 responses were received.

#### **Qualitative data:**

The study questionnaire was divided into 5 sections.

**Section I** consisted of 5 questions related to sociodemographic data of students.

**Section II** consisted of 1 general question about the primary motivating factor for choosing dentistry.

**Section III** consisted of 3 questions regarding future career plans and interest in dental speciality areas for post-graduation.

**Section IV** consisted of 1 question related to the attitude of students towards the profession.

**Section V** consisted of 9 questions about the self-perceived competency regarding general dental skills.

#### **Data analysis:**

Statistical analysis was performed using statistical package for social science (SPSS) version 21 for windows (Armonk, NY: IBM Corp). Descriptive qualitative data was expressed in percentage/proportion respectively. Confidence interval is set at 95% and probability error (level for significance) set at 5%. Comparisons of differences in confidence level, motivation, work preparedness, self-perceived competency amongst the study subject was assessed using Pearson chi square test.

#### **Ethics**

The study was submitted for ethical approval to the Institutional Ethics committee and was approved by the ethical committee with the registration number EC/NEW/INST/2019/329.

#### **Results**

Out of 450 participants, 411 responses were received by the dental interns who became part of the study:

The majority participants were in the age group of 22-24 year that is 58.4% (n=240) and participants in the age group of >24 were 21.70%, (n=89) and <22 year were 20% (n=82). 72% (n=295) of the respondent were female interns and remaining 28% (n=116) were male interns and this finding was found to be statistically significant. (P value < 0.005)

The majority of the dental interns about 45.4% (n=221) belonged to educated family background with both father and mother being graduates followed by 39.20% (n=182) parents with post graduate degree and 15.40% (n=140) parents belonged to the other categories. The result was found to be statistically significant. (P value < 0.005)

Majority of the interns who participated completed their high school from private school seen in 32.6% (n=134), 26% (n=106) from government school, 21.2% (n=87) from missionary schools and 20.2% (n=84) were from other educational institutes. (Table 1)

The most influencing factor seen for choosing dentistry was self-interest in 25.8% (n=106) followed by influence by the parents in 22.4% (n=92), 22.1% (n=91) influence by other factors, 14.8% (n=61) were influenced by friends and 14.8% (n=61) were influenced from other dentists. (Table 2)

Analysis of top most motivating factor for choosing dentistry amongst the respondents showed almost equal responses in all options given, with the highest number of students about 20.9% (n=86) pursuing dentistry because of interest in medical science, 13.1% (n=54) because of advice from close ones, 11.7% (n=48) due to financial stability, 11.2% (n=46) because of no emergency work, 10.5% (n=43) for the status and prestige, 9% (n=36) for the opportunities overseas, 8.30% (n=34) due to independence in job, 7.80% (n=32) because of good job security involved and 7.50% (n=32) due to flexible work hours.

The future choices evaluation amongst the interns revealed that majority that is 20.7% (n=85) of the interns wanted to pursue MDS speciality in India, 16.3% (n=67) wanted to open their own private clinic followed by 11.9% (n=61) who opted to work to get experience by working at other dental clinics. A significant number of interns that is 13.6% (n=48) showed interest in doing post-graduation abroad, 11.9% (n=61) showed interest in working abroad which directed towards the expanding scope of dentistry.

The maximum respondents, 93.9% (n=385) also felt a need to attend various dental education programmes to enhance their knowledge. The



above finding was found to be **statistically significant. (Pvalue<0.005))(Table 3)**

The assessment of student attitude towards the profession showed that majority of the participants, 26.8%(n=110) or the budding dentist were happy and satisfied with dentistry as a profession but also almost similar proportion, 23.6%(n=97) showed that they had fear of stability, financial problems after graduation. A considerable number of interns, 19 % (n=78) feared that they do not have enough skills and abilities to treat patients, 16.1 % (n=66) of them felt that they can have good patient doctor relationship and 14.6% (n=60) felt that their work does not give them time for extracurricular activities. **(Table 4)**

The assessment of interns regarding the skills practiced in dentistry was evaluated in terms of level of confidence categorizing into very confident, confident, less confident and no confident categories while performing various dental procedures which included basic dental procedures like recording case history, performing investigations, formulating treatment plans, root canal, restorations, delivering LA, restoring missing teeth and performing oral prophylaxis. The overall mean average of students performing various procedures who were confident was seen in 41% (n=168), 36% (n=147) were very confident in performing procedures, very few that is 6.15% (n=25) were in the less confident group and 1.76% (n=1) were not confident as per our findings. **(Table 5)**

#### **Discussion**

Dental education has tremendously evolved throughout the years and there is a wide future opportunities and choices one can make. The findings of the study may be utilized by dental institutions to provide courses that prepare students to effectively handle future career challenges. <sup>(7)</sup> Dental academia should collaborate with the decision makers in healthcare systems to organize career fairs. Guest speaker presentations (from the government sector, the private sector, and specialty program organizations) may be organized by dental colleges to enrich the awareness of the students about

employment situation and avenues for higher education. <sup>(8)</sup>

The survey results showed the background characteristics of interns who participated in the survey. The average age group of the interns who participated were in the age group of 22 to 24 years which was 58.40% indicating that students have joined and completed the graduation course at appropriate time. The maximum respondents about 72% were female interns and the result was **statistically significant (P value < 0.005)** which followed a trend that dentistry as a branch is preferred by a large number of females because of ease of private practice which allows for balance between personal and professional life. <sup>(3,5)</sup> The students belonged to well-educated families where most of the families, both mother and father were graduates seen in 45.4% families and post graduates in 39.20% in their respective fields and the result was **statistically significant (P value < 0.005)**. It is established that parent education plays a very central role in the decision making and future career development of child which was observed in our study. The educational background of the interns was quite satisfactory as majority of the interns about 32.60% studied their high school from private school followed by 26.00% from government school, 21.20% from missionary school and 20.20% from other educational institutes. The importance of high school education is crucial as it lays the foundation of the child future growth and motives for forthcoming years of life.

The main influencing factor behind choosing dentistry in this study was self-motivation and interest towards the field which was seen in 25.80% followed by parents, friends and other dental practitioners who acted as supportive factor for choosing dentistry. According to Karibe H et al study on career choice and attitudes towards dental education amongst dental students in Japan and Sweden, the most common influencing factor for choosing dentistry was interest to help others amongst Swedish dental students, while in Japanese students it was family expectations which was similar to our study where family in 22.4%

was the second most influencing factor for choosing dentistry for many interns.<sup>(9)</sup>

The study results showed that there are various motivating factors which equally played a role in selection of dentistry as a profession where the most important factor was self-interest in the field of medical science which was seen in 20.9% of the students, necessary to excel and emerge further in the field. Similar to our study results, interest, prestige, good work opportunity abroad, financial security and flexible work hours were the most important factor for choosing dentistry in Nigerian study.<sup>(10)</sup> In a study of Arab dental students, 'prestige' and 'helping people' were important motivating factors in the group of dental students.<sup>(11)</sup> In a comparative study in Iran, motives of senior undergraduate medical and dental students the factor analysis identified six motivational items: Social and professional status, healthcare and people, others' recommendation, personal interest and nature of occupation, occupational experience, and personal life. Medical students were more influenced by playing a role in community health and personal interest, while dental students were motivated by work independence and social factors.<sup>(11)</sup> Various studies conducted worldwide have reported that lifestyle issues had been highlighted as prominent in medical students' choice of a career amongst socioeconomic, cultural and lifestyle aspects.<sup>(12,13,14)</sup> Thus, based on the studies conducted the most important parameter for choosing dentistry was interest in the field of medical science which was also seen in our study.

The survey regarding the first choice for future career chosen after dentistry showed mixed responses by interns where the pioneer choice of interns was to do postgraduation/masters in their own country seen in 20.7% similar to Saudi female dental interns who felt post graduate study also a necessity for their career as compared to male students.<sup>(15)</sup> The results showed that many interns about 16.3% wanted to indulge in private practice and 11.9% wanted to work in a dental clinic supporting the increasing trend

of private dental practice in India. Due to the increased scope, quality of life and financial benefits many students want to pursue dentistry abroad.<sup>(16)</sup> In our study also 13.6% opted to do postgraduation and 11.9% wanted to pursue dental practice abroad. Very few around 11.90% of the interns showed interest in research field. The responses to first future career choices after dentistry received almost equal responses to every choice, highlighting the various career opportunities and diversified choices one can make after graduation. According to Khalaf et al, continued research on the topic of motivations behind a career in dentistry found that factors such as financial stability remained dominant themes amongst both males and females.<sup>(17)</sup> Their results differed from our study where in the most important motivating factor was interest in medical field seen in 20.9%.

About 93.90% interns felt that various educational programmes should be carried out in dental institutions to enhance their clinical skills and knowledge and the result was **statistically significant (p value < 0.005)**. Apart from curriculum, various CDE programmes, hands on demo training, exposure to clinical research will make students more well versed in their field.

Attitude of students towards the profession showed that a significant proportion of the interns around 26.80% were happy and satisfied with dentistry and 16.1% interns were happy about their doctor patient relationship which directs towards building a healthy future practice while on the other aspect almost same proportion of 23.6% felt stressed about their job and financial security, 19% of the interns feared that they do not have enough abilities and skills to practice dentistry. The stress factor can be attributed due to lack of clinical knowledge and practice amongst the interns and also can be due to financial aspects involved in setting up a clinic. A previous study conducted in King Saud University, Saudi Arabia, showed that 62% of the students said that establishing a private dental clinic required a long period of time.<sup>(15)</sup> In



North America, many dental students choose to work in private practice immediately after graduation instead of perusing postgraduate study in order to pay back their educational debts. <sup>(18)</sup>The above study result can be attributed to the fact that interns in our study felt insecure about job and finance. A small fraction of 14.60% felt that their profession do not permit them free time to do extracurricular activities.

The assessment of the confidence level in clinical skills which was a major parameter of the study showed that most of the interns that is 41% were confident in all the basic dental procedures, followed by 36% who were very confident in their clinical skills and with less confidence were 6.15% and a very small fraction of students about 1.76% showed no confidence in clinical skills. However, the majority of the interns were found to be confident in clinical procedures. There is still a scope of further enhancing the clinical skills of students at primary level and thus improving the confident ratio to very confident.

The aim of dental undergraduate education is to produce a self-sufficient dentist who after graduation is able to accept professional responsibility, appreciates and supports future development, utilizes further advanced techniques and understands the role of patient in decision-making. This means at

graduation the dentist must be competent to practice independently. <sup>(19,20)</sup>

**Conclusion:**

The survey results were satisfactory which assessed the sociodemographic data, motivating and influencing factor for choosing dentistry, evaluating the future career choices made by students and also assessing the clinical skills of the interns by checking their confidence level. We would like to conclude that dental education in India is quite satisfactory but still there is more room for enhancing the overall dental curriculum to make the graduating doctors and also the dental practitioners more established and well versed in their field.

**Future scope:**

The study showed that most of the interns gave satisfactory response but also there was a small fraction of them who did not give positive responses related to clinical skills, negative attitude towards dentistry so further reforms and enhancement can be made at the institutional level to make interns more competent. Also studies similar to this can be conducted on a larger scale which includes dental interns throughout India for better evaluation of the results and for better understanding and implementation of dental reforms and advancements in India.

**Table 1: Socioeconomic data of students**

Questions					P value
1.Age	<22 years	22 -24 years	24 years		
	20.00%	58.40%	21.70%		0.0055
2.Gender	Male	Female	Others		
	28.00%	72.00%	0.00%		0.0024*
3. Father education	Graduate	Post graduate	Other		
	53.80%	44.30%	1.90%		0.0041*
4.Mother education	Graduate	Post graduate	Other		
	37.00%	34.10%	28.90%		0.0955
5. School attended	Government	Private	missionary	Other	
	26.00%	32.60%	21.20%	20.20%	0.3645



**Table 2: Influencing factor on the choice of dentistry as first choice**

**\*Statistically significant**

Question						P value
Influencing factor on choice of dentistry as first choice	Parents 22.40%	Friends 14.80%	Dentists 14.80%	Self 25.80%	Others 22.10%	0.4412

**Table 3: Motivation of students, future career choices in the field of dentistry**

Question										P value
1.Motivating factor	Family /friend's advice	Prestige and social status	Interest in medicine	Independence in job	Flexible work hours	No emergency work	I can work abroad	Financial security	Good job security	
	13.10%	10.50%	20.90%	8.30%	7.50%	13.10%	9.00%	11.70%	7.80%	0.7063
2.First choice for future career plan	Working in a dental clinic	Private practice in India	Post graduation in India (MDS)	Post graduation abroad	Working abroad	Involvement in research	other			
	14.80%	16.30%	20.70%	13.60%	11.90%	11.90%	10.70%			0.5083
3.Need for dental education programmes by institutions	Yes	no								
	93.90%	6.10%								0.0006*

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**Table 4: Students attitude towards the profession**

**\*Statistically significant**

Students attitude towards the profession	I am happy and proud to be a dentist	I do not see enough abilities in self to treat patients	I am satisfied about my doctor patient relationship	My job does not leave me enough time for extracurricular activities	I feel stressed about my future job, financial security	P value
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			abilities			
	26.80%	19.00%	16.10%	14.60%	23.60%	0.0793

**Table 5: Self perceived competency regarding general clinical skills.**

**\*Statistically significant**

Question	Very confident	Confident	Less confident	No confidence	P value
1.Communicate with patient and elicit proper case history	44.00%	54.00%	1.50%	0.50%	0.0044*
2.Carry out necessary investigation procedures and reach a diagnosis	42.30%	52.10%	5.00%	0.60%	0.0089
3.Formulate a treatment plan best in patient interest	37.00%	60.1%	2.90%	0%	0.0046*
4.Perform restorations	41.60%	49.40%	9.00%	0%	0.0075
5. Carry out root canal treatment	36.00%	46.70%	10.00%	7.30%	0.0071
6.Administer LA and carry out simple extraction	40.4%	48.2%	9.70%	1.70%	0.0068
7.Writing a prescription without any errors	43.80%	51.60%	4.00%	0.60%	0.0100
8.Replace missing teeth with dentures, RPD and FPD	38.90%	44.80%	14.40%	1.90%	0.0084
9.Perform oral prophylaxis	45.00%	54.00%	5.00%	5.00%	0.0060

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