

Choosing Public Health Dentistry as a Career: A Cross-Sectional Study

GUNTIPALLI M. NAIDU¹, GHANASYAM PRASAD M.², CHAITANYA RAM KANDREGULA³, SURESH BABBURI⁴, PRATAP KVNR⁵

ABSTRACT

Objectives: The purpose of this study was to assess the attitude of dental students towards considering Public Health Dentistry as their future career.

Materials and Methods: A questionnaire based, cross-sectional survey was conducted, which included dental students from different years of study. It consisted of 27 questions that were graded on five point Likert scale.

Results: A total of 293 of the 320 registered undergraduate students participated in the study, with an overall response rate of 91.5%. Among the sample, 80 (27%) were males and 213 (73%) were females. Among the total sample which was studied, it was observed that only one third (35.4%) of them had high attitude

towards selecting Public Health Dentistry as a future career, and nearly two thirds of them (58.02%) had an average attitude, with very few students having low attitude (6.48%).

Conclusion: The present study concluded that there was an average attitude of 58% among dental students, which showed that they had a considerable amount of interest in pursuing post graduation in this speciality. Efforts should be intensified, both by dental council and by the dental colleges, to develop this speciality, keeping in mind the increasing attitude of dental undergraduates towards it. This also helps in increasing the number of dental personnel who are specialized in implementation of oral health policy, which does not exist in India.

INTRODUCTION

In India, prior to 1980, there were only 39 dental colleges with few dentists being available for services, but the scenario changed after 1980, with a rapid increase in the number of dental colleges, which reached around 240 in 2007. Correspondingly, the number of Dental Surgeons in the country has also increased from few hundreds to almost 80,000. There is about 3.5 times increase in the population since then and number of dentists has increased more than 3,000 times [1]. This enormous increase had led to a feeling of anxiety due to saturation in the minds of budding dentists. This feeling is intense, especially among interns and many are not able to decide as to what future course they should take up to establish themselves.

Studies have been conducted to know the motives behind choosing dentistry as a career option. Studies were done at University of Toronto [2], Israel [3], India [4], England [5], Australia [6], Ireland [7], United States of America [8], to quote a few. The prime motive behind choosing dentistry as a career option ranged from financial security, to independence, to becoming a specialized professional, to job satisfaction, to status and to service of common man.

In India, dental students have to go ahead with either clinical practice or they have to pursue post-graduation degree (higher education), as these are the only available options for the budding dentists, selection of which is again influenced by several factors. There are only few studies which have explored these factors. To know these factors, some dental students were interviewed and most of them favoured higher education as their future choice, but when they were asked about choice of the specialty, there were varied responses. Most of them favoured Conservative dentistry and Endodontics, Orthodontics, Oral and Maxillofacial Surgery, Pedodontics and Periodontics as their choice. Similarly, in Nigeria, students' preferences were more towards the clinical specialties, while Dental Radiology, Dental Anaesthesia, Dental Public Health and Oral Medicine were not considered at all by the students [9]. Ohaeri JU et al., found a similar result on medical interns,

Keywords: Public Health Dentistry, Career, Attitude

where Radiology, Community Medicine and Anaesthesia were not favourably considered [10]. Among the various disciplines of dentistry in India, Public Health Dentistry is considered as a non clinical department and it is given less priority by the students as their choice in post-graduation, though it forms the basis of dental health care services and holds the key for developing awareness about the social aspects of the profession and the responsibility towards community. Keeping this in view, a study was conducted with an aim to explore the attitude of dental students on selecting Public Health Dentistry as their future career at Mamata Dental College, Khammam, India.

MATERIALS AND METHODS

This questionnaire based, cross-sectional survey was conducted during June 2011 and July 2011. Questionnaire was distributed to students during class hours for each year, with prior permission from Dean of the Institution. A total of 320 undergraduate dental students who were registered under Dr. NTR University of Health Sciences, India, were approached for their participation in the survey. After explaining the aims and objectives of the study, verbal consents were obtained from the participants prior to the start of the survey. Students were assured that their information would be held confidential. Ethical clearance was obtained from the ethical committee of Mamata Dental College, Khammam, India.

Inclusion Criteria: All students present on the day of the survey were included.

Exclusion Criteria: Students who were absent on the days of survey and who were not willing to participate were excluded.

A self-administered, pretested, structured questionnaire was employed to record the data. The questionnaire consisted of two sections; the first section included information on demographic characteristics, and second section explored the attitudes of dental students regarding considering Public Health Dentistry as their future career and it consisted of 27 questions that were graded on five point Likert scale, with grades; STRONGLY AGREE (4), AGREE

(3), UNDECIDED (2), DISAGREE (1) and STRONGLY DISAGREE (0). The scores were given in the parenthesis. Minimum and maximum scores ranged between 0 and 108.

Sample size calculation

Pilot study was conducted on 40 participants, in which 26% of them showed a positive attitude.

$$N = \frac{(Z\alpha + Z\beta)^2 \cdot 2 \cdot P(1 - P)}{d^2}$$

$Z\alpha = \infty$ error; $P = \leq 0.5$, $Z\alpha = 1.96$.

$Z\beta = 0.8$ (80% power)

$\rho = 0.38$

D = difference to be detected. It is 10%.

$$N = \frac{(Z\alpha + Z\beta)^2 \cdot 2 \cdot P(1 - P)}{d^2}; \quad N = \frac{(1.96 + 0.8)^2 \cdot 2 \cdot 0.26(0.74)}{(0.1)^2}$$

N = 293.

A sample size of 293 was required to test the hypothesis with 95% confidence interval and 80% power to reject the null hypothesis.

Test-retest reliability was performed to test the reliability of the questionnaire, it was found to be good with Cronbach's alpha (α) 0.75.

Descriptive analysis was undertaken to present the findings from this study. Differences between groups were examined by using Chi-Square test for proportions, t-test and ANOVA, with post hoc tests for means. Statistical analysis was done by using SPSS, version 12 and the significance level was set at p value of < 0.05.

RESULTS

A total of 293 of the 320 registered undergraduate students participated in the study, with an overall response rate of 91.5%.

Among 293 students, 80 (27%) were males and 213 (73%) were females. The age distribution was in between 17-23 years. 13.6% of the study population belonged to the age group of 17-18 years, while 43.4% of them were between the ages of 19-20 years. While 34.1% of the study population was in between 21-22 years, only 8.9% were above the age of 23 years. Participation varied according to the years of study (29%, 20.4%, 16.7%, 19.1% and 14.6% for first year, second year, third year, fourth year and interns respectively). This has been illustrated in [Table/Fig-1].

The responses for the attitude questions were categorized into three factors, which are low attitude (includes score 0-35), average attitude (score 36-75) and high attitude (score 76-108). Among the total sample which was studied, it was observed that only one third (35.4%) of them had high attitude towards selecting public health dentistry as their future career and nearly two thirds of them (58.02%) had an average attitude, with very few students having low attitude (6.48%) [Table/Fig-2].

While only 6.25% of the male students had high level of attitude, nearly half of the female students expressed high level of interest (46.48%) in choosing Public Health Dentistry as their future career. This was a significant finding and a high level of variation in attitude between males and females was found [Table/Fig-3].

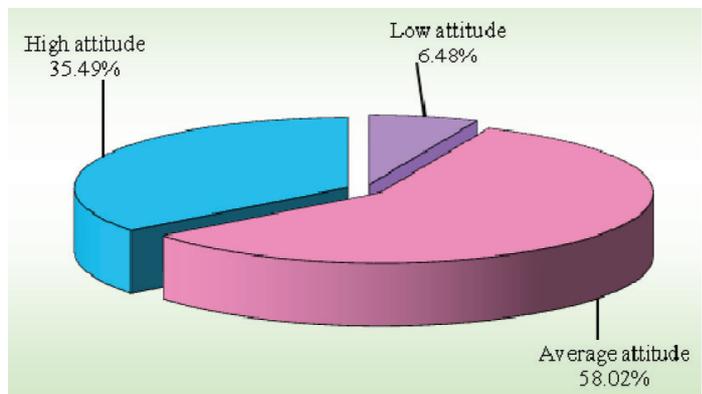
When mean of the total attitude score was compared between males and females, it was found to be significant, with females having higher mean levels [Table/Fig-4].

When attitude was compared between years of study, high attitude was found to be more among interns and fourth year students, whereas more number of first, second and third year students had average attitude. Low attitude was found to be more in first year students as compared to the students from remaining years of study. The association between the years of study for low, average and high attitudes was found to be significant, with interns and fourth year students having high attitude levels [Table/Fig-5].

When mean attitude was compared between different years of study, it showed high significant difference, with means of interns and fourth year students having high attitudes. On doing multiple comparisons, it was found that significant difference existed between first year and fourth year students and between first year students and interns [Table/Fig-6].

| Variable | n | Percentage | |
|---------------|-------------|------------|------|
| Gender | Male | 80 | 27 |
| | Female | 213 | 73 |
| Age | 17-18 | 40 | 13.6 |
| | 19-20 | 127 | 43.4 |
| | 21-22 | 100 | 34.1 |
| | >23 | 26 | 8.9 |
| Year of study | First year | 85 | 29 |
| | Second year | 60 | 20.4 |
| | Third year | 49 | 16.7 |
| | Fourth year | 56 | 19.1 |
| | Interns | 43 | 14.6 |

[Table/Fig-1]: Socio-demographic characteristics of the sample. Table shows the general demographic characteristics of the sample population.



[Table/Fig-2]: Clearly shows the distribution of the entire study population according to the levels of attitude. Most of subjects exhibited an average attitude towards choosing public health dentistry as a career.

| Gender | Low attitude | Average attitude | High attitude | Chi-square value | p value |
|--------|--------------|------------------|---------------|------------------|---------|
| Male | 19 (23.75%) | 56 (70%) | 5 (6.25%) | 79.82 | 0.001** |
| Female | 0 (0%) | 114 (53.52%) | 99 (46.48%) | | |

[Table/Fig-3]: Distribution of attitude scores in relation to gender. *p<0.05 **p<0.001. Shows that significant difference exists in between male and female students with high percentage female students showing higher interest to choose Public health dentistry as a career.

| Gender | Mean | SD | t-value | p-value |
|--------|---------|---------|----------|---------|
| Male | 61.3079 | 10.3482 | -10.6992 | 0.0000* |
| Female | 74.0002 | 8.5109 | | |

[Table/Fig-4]: Comparison of male and female students with respect to attitude scores (%) by t-test. *p<0.05; **p<0.001

| Year of study | Low attitude | Average attitude | High attitude | Chi-square value | p value |
|---------------|--------------|------------------|---------------|------------------|---------|
| 1st year | 14 | 49 | 22 | 151.69 | 0.000** |
| 2nd year | 0 | 60 | 0 | | |
| 3rd year | 1 | 38 | 10 | | |
| 4th year | 4 | 23 | 29 | | |
| Interns | 0 | 0 | 43 | | |

[Table/Fig-5]: Distribution of attitude scores in relation to year of study. *p<0.05; **p<0.001. Shows a significant difference in the student's attitude. The results clearly showed that the students had a better attitude towards the subject with the increase in the year of study

| Year of study | Mean | S.D | F value | p value |
|----------------------|-------|-------|---------|---------|
| 1 st year | 66.13 | 10.96 | 26.19 | 0.000** |
| 2 nd year | 67.50 | 4.42 | | |
| 3 rd year | 69.58 | 6.30 | | |
| 4 th year | 71.86 | 13.76 | | |
| Interns | 82.84 | 4.31 | | |

[Table/Fig-6]: Comparison of mean attitude between different years' of study. *p<0.05; **p<0.001

DISCUSSION

Among the various disciplines in dentistry, Public Health Dentistry forms the basis for dental health care services and it holds the key for developing awareness on the social aspects of the profession and the responsibility towards community, amidst all those who are engaged in the profession [11]. Operation of a meaningful and balanced oral health care delivery system requires specialists from all aspects of dentistry [9]. In India, of all the various disciplines of dentistry, Public Health Dentistry is the one which was given least importance by dental colleges, as is evident from the paucity of post graduate seats which are available in the country; the reason being the attraction towards clinical dental specialties by dental undergraduates.

The dilemma of choosing a branch becomes even more profound, especially when one is choosing a career in a specialty which is still in its budding stage and is growing for e.g. Public Health Dentistry. Little interest is developed towards the subject during graduation, reasons being,

1. The academics are shared by Department of Periodontics in most of the dental colleges.
2. The trend of teaching and training of curative approach rather than preventive and promotive approaches.

Keeping this in view, the present study was conducted to know the attitudes of dental students towards choosing Public Health Dentistry as their future career, which can help in establishing post-graduation courses in various Public Health Dentistry departments among existing universities. Due to scarcity in the number of studies which are concerned with this aspect, no comparisons could be made with other studies.

The present study found an average attitude towards joining public health dentistry among 58% of the sample, which showed that they had a considerable amount of interest in pursuing post-graduation in this specialty.

Attitude towards the specialty was significantly less among male students as compared to females, which could be due to their assumptions and misinterpretations about Public Health Dentistry as a non clinical specialty, that doesn't include clinical training and so "loss of hands" on dental practice. Other reasons for this low attitude towards public dental health among male students may be lower income, lower professionalism, poorer working conditions in communities and greater dependency on the job as compared to other specialties of dentistry [12]. However, this result was not in accordance with that of study conducted by Gurmukh Singh and Hiremath SS et al., in which higher inclination to join public health dentistry was seen among males [13].

Attitude towards dental public health was found to be more among students from higher academic years as compared to those from first and second years. This may be due to their increased awareness on the importance of doing post-graduation, demand for it in the society and better income which was associated with it, as compared to under graduation. This reflected their attitude towards post-graduation in general rather than specifically towards public health dentistry, but most of them felt that public health dentistry was a challenging job, as they had to face community and solve dental health problems. Among the first and second year students, this awareness was less, as they were still in the early years of the course and were not exposed to working in a clinical environment, where they would usually come to

know the difference between under-graduation and post-graduation.

CONCLUSION

In the past one decade, Dental Council of India has made some efforts in establishing post-graduation in Public Health Dentistry, but these efforts should be intensified further, both by council and by the dental colleges, to develop this specialty, keeping in mind the increasing attitudes of dental undergraduates towards it. This can also help in increasing the number of dental personnel who are specialized in implementation of oral health policy, which does not exist in India.

LIMITATION

A major limitation of the present study was the low number of respondents. Because of this limitation, the present results should be viewed as preliminary. Further studies with larger sample sizes, which involve the entire country are needed, to know the attitude of dental students towards choosing public health dentistry as their future career.

SUGGESTIONS AND RECOMMENDATIONS

The findings of the present study suggest that there has been a change in the dynamics in the post-graduation studies, from it being a male dominated profession to a nearly equal number of females joining the course. There is a need to broaden the scope of the specialty and to make it more practical. Proper orientation on the subject from the under graduation level is the need of the hour. Prior counselling of the students who are not aware of the future prospects of the subject should be done.

The students who seem to view academics/teaching as their future prospects with regards to this specialty require more attention. It is necessary to broaden the limits of the subject spectrum from just being a lucrative teaching option in terms of financial interests, to a specialty which is much useful to the people of the country. Innovative and strategic areas of alliance with other fields of dentistry and medicine should be sought during and after post-graduation for the students. Interactions between the students should be encouraged, for them to carry out at least small pilot projects in the field and to give shape to committed and confident public health dentists for the future.

REFERENCES

- [1] Guidelines for meaningful and effective utilization of manpower at dental colleges for primary prevention of Oro-Dental Problems in the country. A GOI-WHO collaborative programme: Biennium. 2006-2007.
- [2] Reid AE. Recruitment into dentistry: the results of a recent national study of dental education in Canada. *J Dent Educ.* 1976;40:158-65.
- [3] Eli I, Shuval JT. Professional socialization in dentistry. A longitudinal analysis of attitude changes among dental students towards the dental profession. *Soc Sci Med.* 1982;16:951-55.
- [4] Chattopadhyay A, Deol RS. Reasons for choice of dentistry as a career in Calcutta: a survey report. *Indian J Dent Res.* 1990;2:140-44.
- [5] Morris S. What kind of people want to become dentists? General Dental Council Recruitment Working Party survey of first year undergraduate dental students. *Br Dent J.* 1992;173:143-44.
- [6] Brand AA, Chikte UM, Thomas CJ. Choosing dentistry as a career-a profile of entering students (1992) to the University of Sydney, Australia. *Aust Dent J.* 1996;41:198-205.
- [7] Hallissey J, Hannigan A, Ray N. Reasons for choosing dentistry as a career-a survey of dental students attending a dental school in Ireland during. 1998-99. *Eur J Dent Educ.* 2000;4:77-81.
- [8] Scarbecz M, Ross JA. Gender differences in first-year dental students' motivation to attend dental school. *J Dent Educ.* 2002;66:952-61
- [9] OM Arowojolu, GA Aderinokun, JY Arotiba, OO Dosumu. Choice of speciality training among Nigerian Dental graduates. *Odonto-Stomatologie Tropicale.* 1997; 21-24.
- [10] Ohaeri JU, Akinyinka OO, Asuzu MC. Speciality choice of interns at Ibadan General Hospitals. *West African Journal of Medicine.* 1993;12 (2): 78-81.
- [11] Soben Peter. Essentials of Preventive and Community Dentistry. 4th ed. New Delhi: Arya Medi Publishing House;. *Introduction to Public Health.* 2009; 1-20.
- [12] Patterson EO. Attitudes among dental students concerning dental public health as a professional career. *Journal of Public Health Dentistry.* 1975; 35(3): 185-91.
- [13] Gurmukh Singh SS, Hiremath Amandeep Kaur. Community Dentistry as a career perspective among the students pursuing Masters course. *AOSR.* 2011; 1(3): 146-51.

STUDY QUESTIONNAIRE**SECTION - 1**

1. Name:
2. What is your gender?
Male
Female
3. What is your age?
4. Year of Study: I Year/II Year/III Year/IV Year/Internship
5. Is your father/family member a dentist? Yes / No
6. The reason behind you joining dental profession.
 1. By chance
 2. By choice.
 3. To be financially successful health professionals and highly respected members of their Communities.
 4. Strong future, stability and security in the profession
7. What are your future plans?
 1. To run a private clinic
 2. To join post-graduation
 3. Others
8. Which subject you like the most in your under graduation?
 1. Orthodontics
 2. Conservative Dentistry
 3. Oral Surgery
 4. Prosthodontics
 5. Periodontics
 6. Oral Medicine and Radiology
 7. Oral Pathology
 8. Pedodontics
 9. Public Health Dentistry
9. If willing to join post-graduation which subject would you like to choose?
 1. Orthodontics
 2. Conservative Dentistry
 3. Oral Surgery
 4. Prosthodontics
 5. Periodontics
 6. Oral Medicine and Radiology
 7. Oral Pathology
 8. Pedodontics
 9. Public Health Dentistry
10. Do you have any plans to work for the community at your place?
 1. Yes
 2. No
11. How are you finding the subject of public health dentistry right now?
 1. Good
 2. Very interesting
 3. Boring
 4. Any other
3. Undecided
4. Disagree
5. Strongly disagree
17. The subject of Public Health Dentistry may be chosen as a career option in M.D.S as the speciality is a vital component in creating oral health awareness in the society;
 1. Strongly agree
 2. Agree
 3. Undecided
 4. Disagree
 5. Strongly disagree
18. The subject of Public Health Dentistry may be chosen as a career option in M.D.S as the speciality pay is better than the other branches.
 1. Strongly agree
 2. Agree
 3. Undecided
 4. Disagree
 5. Strongly disagree
19. The subject of Public Health Dentistry may be chosen as a career option in M.D.S as the speciality offers a challenging job?
 1. Strongly agree
 2. Agree
 3. Undecided
 4. Disagree
 5. Strongly disagree
20. The subject of Public Health Dentistry may be chosen as a career option in M.D.S as the speciality offers a chance to be a responsible social health activist
 1. Strongly agree
 2. Agree
 3. Undecided
 4. Disagree
 5. Strongly disagree
21. The subject of Public Health Dentistry may be chosen as a career option in M.D.S as the speciality offers better financial stability
 1. Strongly agree
 2. Agree
 3. Undecided
 4. Disagree
 5. Strongly disagree
22. The subject of Public Health Dentistry may be chosen as a career option in M.D.S as the speciality offers a good chance to be a good academician/teaching?
 1. Strongly agree
 2. Agree
 3. Undecided
 4. Disagree
 5. Strongly disagree
23. The subject of Public Health Dentistry may be chosen as a career option in M.D.S as the speciality offers a good platform to attain research oriented goals of a student?
 1. Strongly agree
 2. Agree
 3. Undecided
 4. Disagree
 5. Strongly disagree
24. The subject of Public Health Dentistry may be chosen as a career option in M.D.S as the speciality offers good opportunities to continue education/work abroad?
 1. Strongly agree
 2. Agree
 3. Undecided
 4. Disagree
 5. Strongly disagree
25. The subject of Public Health Dentistry may be chosen as a career option in M.D.S as it is prestigious?
 1. Strongly agree
 2. Agree
 3. Undecided
 4. Disagree
 5. Strongly disagree
26. The subject of Public Health Dentistry may be chosen as a career option in M.D.S as it offers a chance to help people?
 1. Strongly agree
 2. Agree
 3. Undecided
 4. Disagree
 5. Strongly disagree
27. The subject of Public Health Dentistry may be chosen as a career option in M.D.S as it helps in the development of personality in a society point of view?
 1. Strongly agree
 2. Agree
 3. Undecided
 4. Disagree
 5. Strongly disagree

SECTION - 2

12. I wish to choose the subject Community Dentistry as a career option in M.D.S as it is my career of interest?
 1. Strongly agree
 2. Agree
 3. Undecided
 4. Disagree
 5. Strongly disagree
13. I wish to choose the subject Community Dentistry as a career option in M.D.S as I am inspired by my an eminent public health dentist?
 1. Strongly agree
 2. Agree
 3. Undecided
 4. Disagree
 5. Strongly disagree
14. I wish to choose the subject Community Dentistry as a career option in M.D.S as I am inspired by my public health dentistry teacher?
 1. Strongly agree
 2. Agree
 3. Undecided
 4. Disagree
 5. Strongly disagree
15. The subject of Public Health Dentistry may be chosen as a career option in M.D.S as the speciality is rewarding (emotionally/socially/financially)?
 1. Strongly agree
 2. Agree
 3. Undecided
 4. Disagree
 5. Strongly disagree
16. The subject of Public Health Dentistry may be chosen as a career option in M.D.S as the speciality offers easy employment;
 1. Strongly agree
 2. Agree

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of Public Health Dentistry, Drs. Sudha and Nageswara Rao Siddhartha Institute of Dental Sciences, Chinavutappalli, Gannavaram-521286, Vijayawada, Andhra Pradesh, India.
2. Professor and HOD, Department of Pediatric Dentistry, St Joseph Dental College, Eluru, West Godavari, Andhra Pradesh, India.
3. Assistant Professor, Department of Pediatric Dentistry, Drs. Sudha and Nageswara Rao Siddhartha Institute of Dental Sciences, India.
4. Reader, Department of Oral Pathology, Drs. Sudha and Nageswara Rao Siddhartha Institute of Dental Sciences, Chinavutappalli, Gannavaram-521286, Vijayawada, Andhra Pradesh, India.
5. Professor and HOD, Department of Public Health Dentistry, Mamatha Dental College, Khammam, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Guntipalli M. Naidu,
Assistant Professor, Department of Public Health Dentistry, Drs. Sudha and Nageswara Rao Siddhartha Institute of Dental Sciences,
Chinavutappalli, Gannavaram-521286, Vijayawada, Andhra Pradesh, India.
Phone: +919440787232, E-Mail: naiduguntipalli@gmail.com

Date of Submission: **Jun 26, 2013**Date of Peer Review: **Sep 04, 2013**Date of Acceptance: **Jan 12, 2014**Date of Publishing: **Feb 03, 2014****FINANCIAL OR OTHER COMPETING INTERESTS:** None.