



Journal of Prosthodontics Dentistry
An Official Publication of Bureau for Health & Education Status Upliftment
(Constitutionally Entitled as Health-Education, Bureau)

A Survey to Compare the Success and Trends Followed between the Private Practice of Prosthodontists and Non-Prosthodontists in Northern and Eastern States of India

*Dr. Khirod Sonar, Dr. Garima Agarwal, Dr. Swati Gupta, Dr. Anuradha P,
Dr. Kaushitaki Bhaumik, Dr. Amrita Upadhyay*

Email Id: serviceheb@gmail.com

INTRODUCTION

Prosthodontics represents a highly developed body of knowledge and skills that spans multiple disciplines. As stated by Elwood H. Stade¹ in his study that clinical studies appear in the journals to provide information of treatment successes and failures. Little is found, however, that addresses the financial rewards or the typical practice profiles of successful prosthodontic practices. As stated by H.A.Young² in his study that successful prosthodontic practice must be predicated on success businesswise and professionally. This study aims to evaluate and compare the success and trends followed in private practice of prosthodontists versus non prosthodontist (MDS in a dental specialty except prosthodontics) in northern and eastern states of India. The purpose of this study is to update and present additional information on the private practice of prosthodontists and nonprosthodontists, related to prosthodontic treatment procedures only. As reported by Nash³ et al, the American College of Prosthodontists sponsored and conducted surveys on the private practice of prosthodontists. Starting in the year 2002, the ACP has sponsored surveys of prosthodontists practicing in the United States. Five surveys have been conducted: in 2002, 2005, 2008, 2011, and 2014. The first four surveys were conducted as mailed surveys, while the 2014 survey was conducted as an internet survey. In this study the conditions and characteristics of private practice by prosthodontists and non prosthodontist were reviewed and compared with the help of a Google form questionnaire. In their paper Vasantha Raju N⁴ et al made an attempt to explore the potential advantages of web based survey tools for data collections and analysis. It also explains how web-based survey can be designed and developed for data collections using Google Forms. In this study several characteristics of practice were reviewed including age, gender, patient visits and financial conditions including revenues, wages, expenses, and net income from practice etc. Numerous authors have spoke about the adaptation of modern treatment tools and technology in private practice of dentists. As Nishihara et al⁵ spoke about zirconia implants, Brecht⁷ et al spoke about intraoral scanners with digital

milling technology etc. In this study a section of questions is included to cover the adoption of modern treatment protocols. In the studies by Kabil et al and Omar^{8,9} et al they have emphasized about motivating factors influencing dental students in choosing the specialty of prosthodontics in post graduate programmes. The data and information from the survey can be used to assist with development of activities to enhance and encourage dentists to consider the specialty of prosthodontics as a profession. In a study by David W.Chambers¹⁰, it is suggested that dentists are among the top earners in the United States. However, the income stream is not uniform across dentists' careers. Virtually all dentists start their adult lives at an economic disadvantage, compared with their peers in other profession, because they must investheavily in their careers. In this study, data regarding income and expenses in a private practice of prosthodontists compared to non prosthodontists is collected. It will help in better understanding of successof prosthodontists in private practice and the profession as a whole. It will help to better equip the prosthodontists to face the future challenges in private practice and motivate the dental students to opt prosthodontics as a specialty.

Access this Article Online	Quick Response Code: 
Website: http://heb-nic.in/jopd	
Received on 20/09/2024	
Accepted on 24/09/2024 © HEB All rights reserved	

AIMS AND OBJECTIVES:**Aims:**

To compare the success and trends followed between the private practice of prosthodontists and non-prosthodontists in northern and eastern states of India.

Objectives:

- A. To compare the number of opd patients in practice of prosthodontists and non prosthodontists related to prosthodontic cases with the help of a Google form questionnaire survey.
- B. To evaluate and compare the adaptation of changing trends in different prosthodontic treatment protocols by a prosthodontist and a non prosthodontist.
- C. To evaluate and compare the expenditures of dental materials used in a prosthodontic practice of a prosthodontist and non prosthodontist.
- D. To evaluate and compare the dental laboratory expenditures in prosthodontic practice of a prosthodontist and non prosthodontist.
- E. To evaluate the revenue generated from prosthodontic practice of a prosthodontist and non prosthodontist.
- F. To evaluate and compare the net production (income) generated from prosthodontic practice of a prosthodontist and non prosthodontist.

MATERIALS AND METHODS STUDY DESIGN:

This study was conducted from department of Prosthodontic & Crown and Bridge, Babu Banarasi Das College of Dental Sciences, Faizabad road Lucknow (UP), India. It was an internet based survey in which a Google form questionnaire was sent to various dentists in private practice in northern and eastern states of India.

Ethical clearance for the dissertation was obtained from the institutional ethical committee [(IEC code - 42) BBDU/MDA/42/2024] Dated 27.02.2024

STUDY SAMPLE SIZE:

The study sample size was 300.

Divided into 2 groups. Which were 150 prosthodontists and 150 non prosthodontists.

ELIGIBILITY CRITERIA : Dentists with a recognized MDS degree.

EXCLUSION CRITERIA:

1. Dentists outside of Northern and Eastern states of India.
2. Dentist not in private practice.
3. Dentist without a MDS degree.

INCLUSION CRITERIA: 1. Dentists in a private practice in northern and eastern states of India.

2. Dentist with recognized MDS degree.

SAMPLING METHOD: Convenience sampling method was followed.

METHODOLOGY: The Google form based questionnaire was sent online to selected participants practicing in northern and eastern states of India. They were asked to fill the consent form provided in the Google form itself by ticking yes option then further proceed to fill the form. Hence the survey was solely voluntary and privacy of the participant was maintained. The form contained questions regarding place of practice, age, gender, dental specialty, years of practice, various prosthodontic treatment procedure with their respective charges viz. number of OPD patients, complete dentures, soft liners, tissue conditioners used in complete dentures, removable partial dentures, fixed partial dentures: pfm and zirconia, implant placement procedures, implant prosthesis, maxillofacial prosthesis, laminates and veneers, cast metal post and core, pre-fabricated post and cores any other modern treatment procedures like BPS dentures, etc. Questions also included regarding adaptation of advanced treatment tools and devices viz. intraoral scanners, milling units, zirconia abutments, PEEK abutments, dental LASERS etc. The Google forms were sent to the participants and the responses were received instantly. This method of survey was time saving and very convenient. The data was automatically collected and stored. Further the data was arranged in tables and charts and sent for statistical analysis.

RESULTS

1. AGE DISTRIBUTION OF STUDY SUBJECTS:

Based on the age distribution of the study sample 55.33% were of 25-34 years age group, 34% were of 35-44 years age group, 8.67% were of 45-54 years age group and 2% were of 54-65 years age group.

Frequency Percent:

25-34 years- (166) 55.33%.

35-44 years -(102) 34%.

45-54 years (26) 8.67% .

54-65 years (6) 2%.

Total (300)- 100%

2. GENDER DISTRIBUTION OF STUDY SUBJECTS :

Based on the gender distribution of the study subjects 34.67% were the females and 65.33% were the males.

3. YEARS OF PRACTICE:

Based on the years of practicing dentistry 6.67% were practicing since 0-2 years, 34% were practicing since 3-5 years, 24% were practicing since 11-15 years and 1.33% were practicing since 16-25 years.

4. INTERGROUP COMPARISON OF MEAN NUMBER OF PATIENTS TREATED IN OPD AMONG THE PROSTHODONTISTS AND NONPROSTHODONTISTS:

The mean number of patients in the OPD of non-prosthodontists was 263.92.

Whereas the mean number of patients in the OPD of prosthodontists was 184.11. The difference in the number of patients treated by the non- prosthodontists and prosthodontists was statistically significant(0.001).

5. INTERGROUP COMPARISON OF MEAN NUMBER OF (treatment procedures) viz COMPLETE DENTURES,SOFT LINERS,TISSUE CONDITIONERS AND RPD BETWEEN PROSTHODONTISTS AND NON-PROSTHODONTISTS:

The mean number of complete dentures completed by non- prosthodontists was 2.520/month, whereas the mean number of dentures delivered by the prosthodontists was 4.693. The mean number of dentures delivered by prosthodontists was significantly higher than the non- prosthodontists. The mean number of patients with application of tissue conditioners and soft liners were 0.160 and 0.226 by the non-prosthodontist. Whereas the mean number of patients with application of tissue conditioners and soft liners by the prosthodontists were 0.853 and 1.013 respectively.

6. INTERGROUP COMPARISON OF MEAN CHARGE OF PATIENTS TREATED IN OPD AMONG THE PROSTHODONTISTS AND NONPROSTHODONTISTS:

The mean charge of patients in the OPD of non-prosthodontist was 392.02. Whereas the mean number of patients in the OPD of prosthodontists was 445.62. The difference in the number of patients treated by the non- prosthodontists and prosthodontists was statistically significant (0.001)

7. INTERGROUP COMPARISON OF CHARGES OF COMPLETE DENTURES, SOFT LINERS AND TISSUE CONDITIONERS BETWEEN PROSTHODONTISTS AND NON-PROSTHODONTISTS:

The mean OPD charges of the non-prosthodontists were 392.02 and among the prosthodontists was 445.62. The mean OPD charge of the prosthodontists was significantly higher than non-prosthodontists.

prosthodontists. The charge for complete dentures among the non-prosthodontists was 18533.33 whereas the charge among the prosthodontists was significantly higher at 30053.30. The mean charge for the tissue conditioners among the non-Prosthodontists was 4600.02 and among the prosthodontists was 5528.83. The mean charge for the non-prosthodontists was 4325.33 for the soft liners and 6532.0 for the prosthodontists with significant difference between the non-prosthodontists and prosthodontists when analyzed using independent t test.

8. INTERGROUP COMPARISON OF NUMBER OF RPD, PFM AND ZIRCONIA CROWNS BETWEEN PROSTHOODNTISTS AND NON- PROSTHODONTISTS :

The mean number of rpd fabricated by the non-prosthodontists was 5.40 and among the prosthodontists was significantly higher at 7.32.. The mean number of pfm crown fabricated by non-prosthodontists was 10.68 and among the non prosthodontists was 23.66.The mean number of zirconiumcrowns fabricated by non-prosthodontists was 6.24 and among the prosthodontists was 12.24.

The mean number of rpd, prm and zirconia crowns fabricated by the prosthodontists were significantly higher than the non-prosthodontists.

9. INTERGROUP COMPARISON OF CHARGES OF RPD, PFM AND ZIRCONIA CROWNS BETWEEN PROSTHOODNTIST AND NONPROSTHODONTITS:

The mean charge of rpd fabricated by the non-prosthodontists was 2134.73and among the prosthodontists was significantly higher at 3460.13. The mean charge of pfm crowns fabricated by non prosthodontists was 3054.23 and among the prosthodontists was 3586.03 .The mean charge of zirconium crowns fabricated by non prosthodontists was 6558.13 and among the prosthodontists was 6846.73 . The charge of rpd, pfm and zirconia crowns fabricated by the prosthodontists were significantly higher than the non-prosthodontists.

10. INTERGROUP COMPARISON OF NUMBER OF OVER DENTURES, IMPLANT, LAMINATES, CAST METAL POSTSS AND PRE FABRICATED POST BETWEEN PROSTHOODNTISTS AND NON-PROSTHODONTISTS :

The mean number of over dentures fabricated by the non prosthodontists was 0.56 and among the prosthodontists was significantly higher at 2.520.. The mean number of Implants placed by non-prosthodontists was 2.520 and among the prosthodontist was 5.693 .The mean number of laminates fabricated by non-prosthodontists was 1.67 and among the prosthodontists was

4.346. The mean number of cast metal posts and core fabricated by non- prosthodontists was 0.224 and among the prosthodontists was 1.034. The mean number of pre fabricated post and core fabricated by non- prosthodontist was 2.140 and among the prosthodontists was 4.259 .The mean number of the prosthesis fabricated by the prosthodontists were significantly higher than the non-prosthodontists.

11. RESPONSES TO ADOPTATION OF MODERN TREATMENT PROTOCOLS:

In response to question on availability of intraoral scanner in the practice. 6.80% of the non-prosthodontists and 48% of the prosthodontists were having intraoral scanner in their clinics. In response to question on the availability of milling machine in the clinics none of the non-prosthodontists had milling unit in their clinic whereas 1.40% of the prosthodontists were having milling unit in their practice. In response to question on the use of zirconia abutments in practice, 9.50% of the non-prosthodontists and 47.20% of the prosthodontists were using it in their clinics. Inresponse to question on use of peek abutments, 5.23% of the non- prosthodontists and 16.70% ofthe prosthodontists. On the question of availability of lasers in the clinics the 22.20% of non-prosthodontists and 47.20% of the prosthodontists were using it. The difference between prosthodontists and non-prosthodontists in response to questions on availability of intraoral scanners, use of zirconia abutments use peek abutments and availability of lasers was statistically significant.

12(A). EXPENDITURE INCURRED BY PRSOTHODONTISTS AND NONPROSTHODONTISTS IN PRIVATE PRACTICE :

The mean expenditure related to dental lab charges per month was 19162.40 by the non-prosthodontists and 27877.14 by the prosthodontists. The mean expenditure on dental materials per month was 13426.24 by non prosthodontists and 14110.24 by prosthodontists. The mean expenditure related to staff salary per month was 14849.54 by the non-prosthodontists and 16274.64 by the prosthodontists. The mean expenditure related to rent per month was 11340.27 by non-prosthodontists and 14014.27 by prosthodontists. The mean expenditure related to service and maintenance of equipment per month was 3199.33 among the non prosthodontists and 3002.14 among the prosthodontists. The difference between the prosthodontists and non- prosthodontists was statistically non-significant in terms of expenditure related to dental materials,salaries and rent payments. The mean expenditure on the dental laboratory charges were significantly higher in the case of prosthodontists as compared to non-prosthodontists.

12. OVERALL PROFIT AMONG PROSTHODONTISTS AND

NON PROSTHODONTISTS:

The mean overall profit among the prosthodontists was significantly higher as compared to non-prosthodontists.

		Mean	SD	Std Error	P value
Overall Profit	Non-Prosthodontist	118162.40	16564.01	245.30	0.001 (Sig)
	Prosthodontist	228277.14	19493.04	671.96	

DISCUSSION:

In this study apart from collecting information on income and expenses of a private practice, questions were included regarding modern treatment procedures. Example - lasers and intraoral scanners. Verma and Kumar et al.¹⁴ suggested the importance of lasers in dentistry in their article. Almari et al.¹⁵ suggested the importance of CBCT (cone beam computerized tomography). Diogaurdi M et al.¹⁶ suggested the importance of guided implant surgery in their article. But CBCT and guided implant surgery software are not used routinely in private practices in northern and eastern states of India due to their increased cost. Although there were few independent CBCT and radiological centers where CBCT was available. These modern diagnostic tools and softwares can be included in questionnaires of future survey.

Based on the age distribution of the study sample 55.33% were of 25-34 years age group, 34% were of 35-44 years age group, 8.67% were of 45-54 years age group and 2% were of 54-65 years age group. This trend is explained by the fact that more number of dental specialists including prosthodontists are graduating from dental schools compared to the last decade.

Based on the years of practicing dentistry 6.67% were practicing since 0-2 years, 34% were practicing since 3-5 years, 24% were practicing since 11-15 years and 1.33% were practicing since 16-25 years. The mean number of patients in the OPD of non-prosthodontists was 263.92 whereas the mean number of patients in the OPD of prosthodontists was 184.11. The difference in the number of patients treated by the non-prosthodontists and prosthodontists was statistically significant. Non-prosthodontists attend to more number of patients in the OPD because their practice may span to more than one discipline of dentistry. Some non-prosthodontists may include multiple disciplines in their practice. But not necessarily more rewarding economically.

The mean number of prosthodontic treatment procedures and their charges were higher in case of prosthodontists compared to non prosthodontists.

CONCLUSION:

Following are the conclusions drawn from the study:

- a)** Based on the age distribution of the study sample 55.33% were of 25-34 years age group, 34% were of 35-44 years age group.
- b)** Based on the gender distribution of the study subjects 34.67% were females and 65.33% were males.
- c)** Based on the years of practicing dentistry 6.67% were practicing since 0- 2 years, 34% were practicing since 3-5 years, 24% were practicing since 11-15 years and 1.33% were practicing since 16-25 years.
- d)** The mean number of patients in the OPD of non prosthodontist was 263.92 whereas the mean number of patients in the OPD of prosthodontists was 184.11, which was found significant.
- e)** The mean number of complete dentures delivered, tissue conditioner and soft liner application by the prosthodontists was significantly higher compared to non prosthodontists.
- f)** The mean OPD charges of the prosthodontists were significantly higher than the non prosthodontists. The mean charge for complete dentures soft liners and tissue conditioners of prosthodontists was significantly higher than the non prosthodontists.
- g)** The mean number of rpd fabricated and the mean charges of rpd done by the prosthodontists were significantly higher compared to non prosthodontists.
- h)** The mean number and charge of pfm and zirconia crowns/fpd done by the prosthodontists were significantly higher compared to non prosthodontists.
- i)** The mean number and charges of dentures, implant case, laminate and veneers done by the prosthodontists was significantly higher than the non prosthodontists.
- j)** In response to question on availability of intraoral scanner, lasers, milling machine use of zirconia and peek abutments, the prosthodontists were significantly higher in possession of these tools compared to non prosthodontists.
- k)** The mean monthly expenditure related to dental lab charges and dental materials of the prosthodontists was non significantly higher compared to non prosthodontists. The expenditure related to service and maintenance paid by the non prosthodontists was non significantly higher than the prosthodontists.

- D)** The mean overall profit among the prosthodontists was significantly higher as compared to nonprosthodontists. The mean monthly profit of prosthodontists was found to be Rs 228277 and of non-prosthodontist it was Rs.118162. Hence it can be concluded that prosthodontists are more successful in performing prosthodontic procedures compared to non-prosthodontists. Prosthodontists are also better equipped in terms of adopting modern treatment protocols in their private practice.

REFERENCES :

1. Elwood H. Stade, Keith Winfield Dickey, Private prosthodontic practice: A status report, The Journal of Prosthetic Dentistry, [https://doi.org/10.1016/0022-3913\(90\)90303-T](https://doi.org/10.1016/0022-3913(90)90303-T)
2. H. A. Young, Factors Contributory To Success In Prosthodontic Practice. Read before the Utah State Dental Association, June, 1952. Received for publication Aug. 6, 1954
3. Kent D. Nash, Douglas G. Benting. Private Practice of Prosthodontists in the United States: Results from the 2008, 2011, and 2014 Surveys of Prosthodontists. Journal of Prosthodontics 25 (2016) 265–281 © 2016 by the American College of Prosthodontists. doi: 10.1111/jopr.12475
4. Baldwin W. Marchack. Applying business principles to a prosthodontic practice. Presented at the Academy of Denture Prosthetics annual meeting, Wintergreen, Va. Associate Clinical Professor in Advanced Prosthodontics 10/1/35257 5.
5. Hironobu Nishiharaa, Mireia Haro Adaneza , Wael Att. Current status of zirconia implants in dentistry: preclinical tests. journal of prosthodontic research xxx (2018) xxx–xxx. <https://doi.org/10.1016/j.jpor.2018.07.006>
6. Hala Zakaria, Caroline L. Duarte Puerto , Hassan Al Basri , Mohammed Fadhul4. Efficacy of Cone Beam Computed Tomography (CBCT) and Periapical (PA) Radiography in Endodontic Diagnosis and Treatment Planning. Journal of Diagnostics and Treatment of Oral and Maxillofacial Pathology 2(2018)60-80.
7. Francesco Mangano , Andrea Gandolfi , Giuseppe Luongo and Silvia Logozzo. Intraoral scanners in dentistry: a review of the current literature. Mangano et al. BMC Oral Health
8. Noha S. kabil, Gehan G. Allam, Ola M. Abdelgeleel. Motivational reasons for choosing dentistry as a professional career & factors affecting specialty choice among REFERENCES 58 final year dental students. Future Dental Journal (2018), doi: 10.1016/j.fdj.2018.04.002. DOI:

9. Omer Hatipoglu. Factors that Affect the Career and Speciality Preferences of Dentistry Students in Turkey. *Journal of Clinical and Diagnostic Research* · June 2019. DOI: 10.7860/JCDR/2019/41282.12934
10. David W. Chambers. Factors Driving Recent Changes in Dentists' Incomes. *Journal of the California Dental Association*, 42:5, 331-337. DOI 11.1080/19424396.2014.12221361
11. Kent D. Nash, Douglas G. Benting. Private Practice of Prosthodontists in the United States: Results from the 2017 Survey of Prosthodontists and Trends Since 2001. *Journal of Prosthodontics* 0 (2018) 1–15 C 2018 by the American College of Prosthodontists. doi: 10.1112./jopr.12923
12. Kent D. Nash and David L. Pfeifer. Prosthodontists in Private Practice: Current and Future Conditions of Practice in the United States (Part I). *Journal of Prosthodontics*, Vol 16, No 4 (July-August), 2007: pp 288-301. doi: 10.1111/j.1532- 849X.2007.00213.x
13. Anupama Prasad D , B. Rajendra Prasad, Veena Shetty, C.S. Shastry & Krishna Prasad D. TISSUE CONDITIONERS : A REVIEW. *Nitte University Journal of Health Science*.
14. Saad Liaqat , Haleema Qayyum, Zainab Rafaqat, Abdul Qadir, Sarmad Fayyaz, Aiman Khan, Humaira Jabeen, Nawshad Muhammad, Muhammad Adnan Khan. Laser as an innovative tool, its implications and advances in dentistry: A systematic review. *Journal of Photochemistry and Photobiology* 12 (2022) 100148.
15. Vasantha Raju, N., and N. S. Harinarayana. "Online survey tools: A case study of Google Forms." National conference on scientific, computational & information research trends in engineering, GSSS-IETW, Mysore. 2016. REFERENCES 59
16. Kaiser, Karen. "Protecting respondent confidentiality in qualitative research." *Qualitative health research* 19, no. 11 (2009): 1632-1641.
17. Samuel SR (2016) Dental education: too many. graduates in India. *Br Dent J* 220:2668–2670. 7. Rada RE, Johnson-Leong C (2004) Stress,. burnout .
18. Mohammed Nasser Alhajj , Ridwaan Omar , Yousef Khader , Asja Celebic , Maha El
19. Bradley Munson, Marko Vujicic , Brittany Harrison, Rachel Morrissey. How Did the COVID-19 Pandemic Affect Dentist Earnings?. © 2021 American Dental Association.
20. Kent D. Nash and David L. Pfeifer. Prosthodontics as a Specialty Private Practice: Net Income of Private Practitioners. *Journal of Prosthodontics*, Vol 15, No 1 (JanuaryFebruary), 2006: pp 37-46. doi: 10.1111/j.1532-849X.2006.00067.x
21. Chester W. Douglass. The role of specialists and general practitioners in provision of

- prosthodontic services. the journal of prosthetic dentistry. academy of denture prosthetics, boston, mass.
22. T. Paul Hyde, J. Fraser McCord. Survey of prosthodontic impression procedures for complete dentures in general dental practice in the United Kingdom. THE JOURNAL OF PROSTHETIC DENTISTRY 295
 23. Vasantha Raju Nand N.S.Harinarayana. Online Survey Tools: A Case Study of Google Form. International Journal of Market Research, 43, p. 407
 24. Harsh Abhilash Kasabwala, Kiran kumar pandurangan, Subhabrata Maiti. Evaluation of quality of life and patient satisfaction between denture wearer using conventional followed by Bio functional Prosthetic System (BPS) dentures.
 25. Lisa A. Tedesco, Davis A. Garlapo. Social and economic factors in prosthodontic practice and education . 1994 by The Editorial Council of the Journal of Prosthetic Dentistry REFERENCES 60
 26. William R. Laney. Limitation of clinical practice to prosthodontics. Presented to the Federation of Prosthodontic Organizations Workshop, Rochester, N. 1'. 5
 27. Sreeharsha Tata, DB Nandeeshwar. A Clinical Study to Evaluate and Compare the Masticatory Performance in Complete Denture Wearers with and without Soft Liners. The Journal of Contemporary Dental Practice, November-December 2012;13(6):787- 792.
 28. Douglas Allen Atwood. Practice of prosthodontics: Past, present, and future. Workshop on Advanced Prosthodontic Education, Chicago, Ill.
 29. Edmund Proffitt. What will be the new normal for the dental industry?. British Dental Association 2020. <https://doi.org/10.1038/s41415-020-1583-x>
 30. Lakshmana Bathala , Vaishnavi Majeti , Narendra Rachuri , Nibha Singh , Sirisha Gedela. The Role of Polyether Ether Ketone (Peek) in Dentistry – A Review. Journal of Medicine and Life Vol. 12, Issue 1, January-March 2019. DOI: 10.25122/jml-2019- 0003
 31. Varsha Murthy , Shakila Rajaram , Sunayana Choudhury , K.R. Sethuraman. Are we Training Enough of Communication Skills and Patient Psychology Required in Dental Practice. Journal of Clinical and Diagnostic Research. 2017 Apr, Vol-11(4): ZE01- ZE04. DOI: 10.7860/JCDR/2017/24664.9619
 32. Tantawi , Morenike Oluwatoyin Folayan et al Happiness among dentists: a multiscale, multi-national study from 21 countries. © 2020 FDI World Dental Federation. doi: 10.1111/idj.12579
 33. Alexander C. L. Holden. Cosmetic dentistry: A sociotechnical evaluation.

- Journal of Esthetic Dentistry, 10(2), 50–51. DOI: 10.1111/bioe.12498
34. Aysooda Afshari , Rojin Shahmohammadi, Seyed Ali Mosaddad , Ozra Pesteei , Emran Hajmohammadi , Mahdi Rahbar , Mostafa Alam , and Kamyar Abbasi. FreeHand versus Surgical Guide Implant Placement.
 35. James L. Sheets, Judy Chia-Chun Yuan, Cortino Sukotjo, Betsy K. Davis, and Alvin G. Wee. Maxillofacial prosthetics training and practice profiles in the United States. the journal of prosthetic dentistry.
 36. Kevin Bowles, Harjit S. Sehgal, Lynn Santelmann, Edward P. Pham & Richie Kohli. Dental Student to Patient Communication Analysis: A Pilot Study. DOI: 10.1080/10410236.2018.1536953
 37. John M. Young. Prosthodontics in the general practice residency. Academy of Denture Prosthetics, Houston, Texas.
 38. D. Brennan, A. J. Spencer and F Szuster. Rates of dental service provision between capital city and non-capital locations in Australian private general practice. The Australian Journal of Health © Volume 6 Number 1, February 1998
 39. Jane Manakil, Selwa Rihani, and Roy George. Preparedness and Practice Management Skills of Graduating Dental Students Entering the Work Force. Education Research International Volume 2015, Article ID 976124. <http://dx.doi.org/10.1155/2015/976124>
 40. Carl O. Boucher. Knowledge and skills that should be included in a graduate prosthodontic program. Academy of Denture Prosthetics in New Orleans, La.
 41. Louis J. Boucher. Principles, concepts, and practices in prosthodontics – 1982. the journal of prosthetic dentistry.
 42. Dr Peter Fine , Professor Albert Leung , Dr Clare Bentall , Professor Chris Louca . The Impact of Confidence on Clinical Dental Practice. doi: 10.1111/eje.12415
 43. Neil S. McLeod. Enhancing the online presence of a dental practice. Presented at the Pacific Coast Society for Prosthodontics meeting, Pasadena, Calif, June, 2011.