

Review: An Examination of Certain Prosthodontic Dogmas

Dr Puja Malhotra^{1*}, Dr Rajiv Kumar Gupta², Dr Mansi Singh³

^{1,2} Professor, Department of Prosthodontics, Santosh Dental College & Hospital, Santosh Deemed to be University, Ghaziabad, Uttar Pradesh, India.

³ Lecturer, Department of Prosthodontics, Santosh Dental College & Hospital, Santosh Deemed to be University, Ghaziabad. Uttar Pradesh, India.

ABSTRACT:

Purpose: Many clinical procedures in prosthodontics, as in other dental specialties, lack solid proof, leaving us in the dark about their effects and, worse yet, unsure of whether they cause more harm than good. This paper's objective is to discuss recent research for a few specific treatments after carefully reading the prosthodontic literature.

Study choice: The best available evidence was the focus of the MEDLINE/PubMed search for literature on the chosen topics.

Results: Many "ancient truths" about prosthodontic procedures might be referred to as dogmas; they are beliefs that are supported more by faith than by facts. For particular, there is little evidence to back up the notion that a face-bow is required in the creation of prostheses, and many occlusion-related theories lack supporting data. The article provides examples of some of these dogmas in various fields of the profession and discusses them.

Conclusion: Examining the prosthodontic literature reveals that many prevalent clinical procedures are not backed by sufficient evidence. In the era of evidence-based dentistry, it is important to eliminate ineffective interventions and base decisions on the best available data.

INTRODUCTION:

A belief or attitude that is held to be true is known as a dogma. When examined more closely, several of these dogmas are still held in high regard despite having no supporting evidence. Galileo Galilei's experience after disavowing the then-accepted article of faith that the earth was the centre of the universe is a well-known historical example of the dangers of challenging dogmas. He was given a life sentence in jail in 1632 by the Church in Rome, which ultimately reduced it to a lifetime of house detention. 360 years later, in 1992, the Pope deemed the Galileo case to be closed. In many organizations, in non-democratic nations, in political parties, and even in the scientific community if you are a researcher who produces results that do not fit into preexisting paradigms, it may still be dangerous to question dogmas. A paradigm, or the shared beliefs of members of a scientific area, can significantly limit one's field of vision, and attempts to modify paradigms are typically met with fierce hostility [1]. According to a well-known scientist, such a response to new discoveries could

have disastrous effects on scientific advancement: "It is what we think we know that keeps us from learning more" (Albert Einstein, 1879–1955).

"Science is not to answer the most difficult problems." The goal of science is to gradually disprove preconceived notions. Nicholas Bohr (1885–1962) Clinicians in both medicine and dentistry should always take into account the following statement: "Half of what you are taught as medical students will have been demonstrated to be inaccurate in 10 years, and the difficulty is none of your lecturers knows which half." (1893–1956) Sidney Burwell One could argue that the time frame today is considerably shorter, possibly barely five years. A crucial step in the development of evidence-based care is to critically examine current viewpoints on clinical techniques. This paper's objective is to examine the most recent data for a few specific clinical prosthodontic procedures after carefully examining the literature.

MATERIALS AND METHODS:

The best available data was taken into consideration when searching MEDLINE/PubMed for literature on specific features of clinical prosthodontic procedures. Since there is a wealth of prosthodontic literature (78,430 hits in PubMed as of April 21, 2008), the review was restricted to studies with the strongest level of evidence (Table 1). Other research were taken into consideration in the absence of publications at the highest levels, such as clinical randomised controlled trials (RCT) and systematic reviews of RCTs. Aspects of complete denture manufacture, jaw registration techniques, tooth loss and the condition of the masticatory system, the use of oral implants in prosthodontic treatment, and the role of occlusion in temporomandibular disorders were among the topics chosen (TMDs). Due to space constraints, the study is shortened and concentrated on particular features of the chosen regions.

Evidence-based care

Only a small portion of the treatments that are often employed in clinical dentistry have been shown to have solid scientific backing. The fact that the situation is comparable in medical care is of little consolation to dentists [2]. Valid comparisons between various techniques, materials, and drugs demand high-quality investigations. It is commonly known that RCTs provide the strongest evidence among other study designs, which is reflected in the hierarchy of scientific strength. RCTs are simple to execute when comparing different medications, but they are challenging to carry out in restorative dentistry and nearly impossible for complex therapies like oral rehabilitation. Therefore, it appears that no RCT has been done to assess the clinical outcomes of implant-supported reconstructions vs traditional fixed prostheses on teeth for tooth replacement. 90 RCTs were found in a thorough analysis of the prosthodontic literature up to the end of 2000, but the critical authors argued that only a tiny portion of them were reported in accordance with current standards for publishing scientific studies, making it challenging to evaluate the results [3].

Review of some dogmas regarding complete denture fabrication

The importance of closely adhering to the traditional prosthodontic guidelines for optimal quality has been highlighted in textbooks and undergraduate training as the key to total denture treatment success. However, numerous studies over the years have shown that there is frequently no link between a dentist's evaluation of denture quality and a patient's happiness with the procedure [5-7]. It is a commonly held clinical belief that there is a correlation between the anatomical characteristics (such as the height of residual ridges, the makeup of mucosal tissues, etc.) and the success of denture therapy. However, numerous research [6,7] have failed to find any direct links between these variables and patient satisfaction with the dentures. According to the findings of one of these studies, patient satisfaction with mandibular prosthesis is not well predicted by doctors' evaluations of the quality of tissues supporting dentures [7].

Additionally, there is no concrete proof that improving complete dentures can influence edentulous participants' eating preferences or diet quality [16,17]. The chewing capacity was enhanced but there were no dietary changes following treatment, according to studies that also compared it to implant-supported prosthesis [18–20]. All of these trials came to the same conclusion: without individualised nutritional counselling, successful rehabilitation, including increased chewing ability, does not always lead to a satisfying diet.

Furthermore, there is insufficient proof that creating superior complete dentures will influence edentulous patients' dietary preferences or elevate the calibre of their diet [16,17]. Improved chewing capacity, but no dietary changes were observed following treatment, according to studies that also compared the prostheses with implant support [18–20]. According to the findings of all these research, successful rehabilitation, including better chewing capacity, does not always lead to a satisfying diet in the absence of individualised nutritional advice.

The fact that psychological factors and the patient's - and the dentist's - personality are of great importance for the outcome of treatment should be balanced with the lack of strong evidence for an association between anatomical and technical prerequisites of a successful treatment with complete dentures [21]. Numerous research have shown that the most important variables influencing patients' assessments of treatment outcomes were dentists' and patients' interpersonal perceptions of one another [22,23]. Reviews of the literature on this subject have indicated that for obtaining patient satisfaction, the development of a positive relationship with the patient appears to be more crucial than a technically flawless denture fabrication [24–26].

The efficacy of the face-bow has been questioned by many general practitioners, and in Scandinavia nearly all dentists have long since stopped using them, not just for the production of complete dentures but also for other kinds of prosthodontic procedures. A face-bow is not required for all forms of prosthodontic procedures, according to a 1991 consensus

publication from the Scandinavian Society for Prosthetic Dentistry (SSPD), which also suggested straightforward techniques for jaw recording. The articulator's standard mounting is adequate and simple to carry out.

The statement was based on the lack of published data—and the continued absence of such data demonstrating that employing a face-bow will improve clinical outcomes relative to not using one [19]. More research is now confirming that mounting in the articulator with or without a face-bow produces equivalent clinical outcomes [21–24]. One of these studies comparing the conventional method with a streamlined method for creating entire dentures came to the conclusion that "the quality of complete dentures does not decrease when production procedures are streamlined to save time and materials." These results should be taken into account by dental educators when creating prosthodontic training programmes. [13]. Also in line with Appropriatech's philosophy, this idea reads: 'To offer care for the many, cost-effective conventional treatment is essential, but with proper quality control.'

The widely held belief that implant treatment is more secure than traditional fixed prostheses is not supported by the most recent research. Numerous long-term investigations have shown that problems following implant therapy are frequent and that reconstructive repairs and replacements can be time- and money-consuming [20]. Systematic reviews have demonstrated that the incidence of technical complications was higher for implant-supported reconstructions than for tooth-supported reconstructions in the absence of RCTs comparing the long-term outcomes of conventional fixed prostheses and implant-supported reconstructions [23]. Before beginning the treatment, dentists should keep an eye on these results and inform the patients.

For a long time, occlusal disturbances were thought to be the main factor causing TMDs. It is not overstatement to claim that the intimate association between TMDs and occlusion was a dogma for many practitioners. Dental schools emphasised the removal of so-called occlusal interferences using various forms of occlusal therapy, such as occlusal adjustment, and it soon became a popular TMD treatment option in general practise. After occlusal adjustment, TMD patients frequently feel better, which supports the dentist's theory that occlusal abnormalities and TMDs are related.

It has been shown that an anterior bite plate that only allows incisal and canine occlusal contacts is just as effective as a stabilisation splint. Unexpectedly, an occlusal splint is essentially just as effective as a so-called placebo splint, which merely covers the palate and doesn't touch the occlusion [13]. According to a theory put forth [14], occlusal splints are temporary aids similar to crutches used in orthopaedic therapy, and the results can be attributed to factors like placebo, passage of time, and shifting concerns. The current consensus among TMD professionals is that an occlusal splint is an effective treatment for the management of TMD patients, despite the growing scepticism about the old explanations of success. However, the mechanism of action is unclear, and it's likely that the blockage has

little to no, if any, impact on the effect. As a result, these tools would be referred to as intraoral appliances rather than occlusal splints.

DISCUSSION:

It is possible to classify a lot of "ancient truths" in prosthodontics and occlusion as dogmas that are more founded on faith than science. Some of these dogmas are illustrated in the essay, but there are many more, as shown by a newly published in-depth review [23]. The creation of complete dentures has received most of the attention, but it is simple to detect a matching absence of solid scientific basis in other prosthodontic subspecialties. In reality, only a small portion of all beliefs that direct clinical dental and medical practises are supported by solid data. Making clinical judgments is excessively challenging and ambiguous without solid evidence. Therefore, more research that includes systematic and controlled investigations is required in order to resolve the numerous unresolved issues and raise the standard and safety of clinical care. The research should include biological, psychological, economic, and quality-of-life factors in addition to clinical comparisons between various therapy. To reach any useful conclusions, it will be necessary to evaluate studies with lower levels of evidence due to the dearth of RCTs and the difficulties in conducting such trials .

Clinical decision-makers can benefit from useful guidelines that systematic evaluations of the literature have been demonstrated to offer [16–18]. The best available evidence should serve as the foundation for clinical practise, which should also take into account the patients' preferences and wishes as well as the clinical experience and knowledge of the therapy team. Many of the current "truths" will be called into question throughout time, and dogmas devoid of compelling evidence will be rejected. The prosthodontic profession ought to participate actively in this procedure.

REFERENCES:

1. Jokstad A, Esposito M, Coulthard P, Worthington HV. The reporting of randomised controlled trials in prosthodontics. *Int J Prosthodont* 2002;15: 230–42.
2. Sjögren P. Randomised clinical trials and evidence-based general dentistry, 865. Linköping, Sweden: Linköping University Medical Dissertations; 2004.
3. Langer A, Michman J, Seifert I. Factors influencing satisfaction with complete dentures in geriatric patients. *J Prosthet Dent* 1961;11:1019–24.
4. de Baat C, van Aken AA, Mulder J, Kalk W. Prosthetic condition'' and patients' judgment of complete dentures. *J Prosthet Dent* 1997;78:472–8.
5. Heydecke G, Klemetti E, Awad MA, Lund JP, Feine JS. Relationship between prosthodontic evaluation and patient ratings of mandibular conventional and implant prostheses. *Int J Prosthodont* 2003;16:307–12.

6. Berg E. Acceptance of full dentures. *Rev Int Dent J* 1993;43(Suppl. 1):299–306.
7. Fenlon MR, Sherriff M. Investigation of new complete denture quality and patients' satisfaction with and use of dentures after two years. *J Dent* 2004;32:327–33.
8. Carlsson GE, Otterland A, Wennström A. Patient factors in appreciation of complete dentures. *J Prosthet Dent* 1967;17:322–8.
9. Wolff A, Gadre A, Begleiter A, Moskona D, Cardash H. Correlation between patient satisfaction with complete dentures and denture quality, oral condition, and flow rate of submandibular/sublingual salivary glands. *Int J Prosthodont* 2003;16:45–8.
10. Garrett NR, Kapur KK, Perez P. Effects of improvements of poorly fitting dentures and new dentures on patient satisfaction. *J Prosthet Dent* 1996;76:403–13.
11. Auerbach SM, Penberthy AR, Kiesler DJ. Opportunity for control, interpersonal impacts, and adjustment to a long-term invasive health care procedure. *J Behav Med* 2004;27:11–29.
12. Palla S. Occlusal considerations in complete dentures. In: McNeill C, editor. *Science and practice of occlusion*. Chicago: Quintessence; 1997. p. 457–67.
13. Carlsson GE. Clinical morbidity and sequelae of treatment with complete dentures. *J Prosthet Dent* 1998;79:17–23.
14. Landesman HM. Building rapport: the art of communication in the management of the edentulous predicament. In: Zarb GA, Bolender CL, editors. *Prosthodontic treatment for edentulous patients*. 12th ed., St. Louis: Mosby; 2004. p. 177–89.
15. Hickey JC, Henderson D, Straus R. Patient response to variations in denture technique. I. Design of a study. *J Prosthet Dent* 1969;22:158–70.
16. Ellinger CW, Wesley RC, Abadi BJ, Armentrout TM. Patient response to variations in denture technique. Part VII: twenty-year patient status. *J Prosthet Dent* 1989;62:45–8.
17. Tangerud T, Carlsson GE. Jaw registration and occlusal morphology. In: Karlsson S, Nilner K, Dahl BL, editors. *A textbook of fixed prosthodontics. The Scandinavian approach*. Stockholm: Gothia; 2000. p. 209–30.
18. Rashedi B, Petropoulos VC. Preclinical complete dentures curriculum survey. *J Prosthodont* 2003;12:37–46.
19. Bra°nemark P-I. Osseointegration and its experimental background. *J Prosthet Dent* 1983;50:399–410.
20. Walton JN, MacEntee MI. Choosing or refusing oral implants: a prospective study of edentulous volunteers for a clinical trial. *Int J Prosthodont* 2005;18:483–8.

21. Müller F, Wahl G, Fuhr K. Age-related satisfaction with complete dentures, desire for improvement and attitudes to implant treatment. *Gerodontology* 1994;11:7–12.
22. Allen PF, Thomason JM, Jepsen NJ, Nohl F, Smith DG, Ellis J. A randomized controlled trial of implant-retained mandibular overdentures. *J Dent Res* 2006;85:547–51.
23. Lang NP, Müller F. Epidemiology and oral function associated with tooth loss and prosthetic dental restorations. Consensus report of Working Group I. *Clin Oral Impl Res* 2007;18(Suppl. 3):46–9.
24. Tomasi C, Wennström JL, Berglundh T. Longevity of teeth and implants— a systematic review. *J Oral Rehabil* 2008;35(Suppl. 1):23–32.
25. Berglundh T, Persson L, Klinge B. A systematic review of the incidence of biological and technical complications in implant dentistry reported in prospective longitudinal studies of at least 5 years. *J Clin Periodontol* 2002;29(Suppl. 3):197–212.
26. Pjetursson BE, Brägger U, Lang NP, Zwahlen M. Comparison of survival and complication rates of tooth-supported fixed dental prostheses (FDPs) and implant-supported FDPs and single crowns (SCs). *Clin Oral Impl Res* 2007;18(Suppl. 3):97–113.