

Effect of major connector design, and numbers of guide plates and rests on the fit of cobalt-chromium partial denture frameworks on initial clinical insertion: A retrospective analysis

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Abstract

Background: Achievement of adequate fit of Co-Cr (cobalt-chromium) frameworks is an important requirement in PRDP (partial removable dental prostheses) treatment for which current evidence on the clinical factors influencing such fit is insufficient. Objectives: The purpose of this investigation was to retrospectively evaluate the influence of major connector design, and numbers of guide plates and occlusal/incisal rests on the number of fabricated frameworks needed until the realization of clinically adequate fit of PRDP Co-Cr frameworks. Materials & Method: Electronic case records of 100 partially dentate patients treated with Co-Cr PRDPs in single or both arches, by undergraduate dental students, were examined, and relevant data recorded by three examiners. The relationship between the three PRDP design features with the number of frameworks that were required to be made in each case were statistically analysed by analysis of variance (ANOVA) and Post hoc Tukey tests ($\alpha=0.05$). Results: Data were derived from 128 (53 maxillary and 75 mandibular) records of the treated partially edentulous arches. The major connector design, and numbers of guide plates and of rests were found not to be significantly correlated with the number of framework fabrication attempts, for both the arches combined, or when arches were considered independently ($P>0.05$). Conclusions: In the present sample none of the component features of PRDP frameworks that were tested were associated with the fit of the frameworks, which suggests that other variables in the fabrication process of PRDP frameworks need investigating in relation to their accuracy of fit. Clinical Significance: The design variations of Co-Cr partial denture frameworks do not affect the clinical fit acceptability.

Biography:

Mirza Rustum Baig is graduated from Dr MGR Medical Univeristy, Chennai, India and went on to complete his clinical residency program from National University of Singapore in the Specialty of Prosthodontics. He acquired the Specialty membership in Restorative Dentistry with special emphasis in Prosthodontics from RCS Edinburgh followed by Fellowships from RCS Edinburgh and RCPS Glasgow. He is currently a clinical educator, researcher and consultant prosthodontist with Kuwait University Faculty of Dentistry. He has published 20 papers in peer-reviewed journals and is working on a number of research projects in the fields of Proshtodontics and Dental Materials. He is an active reviewer with several ISI and Scopus dental journals (Journal of Oral Implantology, Gerodontology, Journal of Advanced Prosthodontics and Indian Journal of Dental Research).

Speaker Publications:

1. "Assessment of Factors Affecting Partial Removable Dental Prostheses Framework Fit: A Clinical Prospective Study", International Journal of Prosthodontics/Vol 32 issue 6:497-502
2. "Evaluation of the marginal fit of a CAD/CAM zirconia-based ceramic crown system", The International journal of prosthodontics/ June 2020
3. "Evaluation of Accuracy of Complete-Arch Multiple-Unit Abutment-Level Dental Implant Impressions Using Different Impression and Splinting Materials", The International journal of oral & maxillofacial implants/ Vol 28 issue 6:1512-1520
4. "Accuracy of Impressions of Multiple Implants in the Edentulous Arch: A Systematic Review", The International journal of oral & maxillofacial implants/ Vol 29 Issue 4:869-880
5. "Multi-unit implant impression accuracy: A review of the literature", Quintessence international/Vol 45 issue 1:39-51

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