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**“Periodontic Graduate Students and Program Directors' Considerations concerning Digital Dentistry: A National Survey”**

**Abstract**

Background:

During the last two decades a digital revolution occurred in dentistry with the introduction of

Cone Beam Computed Tomography (CBCT), Computer Aided Design & Computer Aided

Manufacturing (CAD/CAM) and digital implant technology. The objectives were to assess

how periodontic residents and program directors in the United States evaluate (a) the

quality of periodontic graduate education about CBCT, intraoral scanning and 3-D printing

and implant planning software and Stereolithography, (b) their satisfaction with this

education, (c) their comfort with using this technology, and (d) their motivation for more education.

**Actions, Methods or Intervention:**

Data were collected with anonymous web-based surveys from 66 periodontic residents and

36 graduate program directors. The students answered the questions concerning their own educational experiences and the program directors focused on the educational

experiences of their residents.

**Results:**

The directors rated the residents' classroom-based education about intraoral scanning (5- point scale with 5 = most positive response: Means 3.44 vs. 2.66; p<0.001), 3-D printing (Means: 3.35 vs. 2.62; p=0.003), implant planning software (4.41 vs. 3.47; p<0.001) and Stereolithography (3.36 vs. 2.24; p<0.001) significantly more positive than the residents. The same pattern of responses was also found when both groups rated the quality of their clinical education about these topics (intraoral scanning: 3.79 vs. 3.08; p=0.003; 3-D printing: 3.62 vs. 2.98; p=0.012; implant planning software: 4.59 vs. 4.16; p=0.009; Stereolithography: 3.56 vs. 2.50; p<0.001), their satisfaction with this education, (c) their comfort with using it, and (d) their motivation for more education. Both groups were moderately to very satisfied with the clinical graduate education about all topics other than Stereolithography (directors: 3.41 vs. residents: 2.52; p<0.001). However, the residents were less comfortable to use intraoral scanning (3.32 vs. 3.88;p=0.008), 3-D printing (2.91 vs. 3.65; p=002), implant planning software (4.35 vs. 4.62; p=0.061) and Stereolithography (2.52 vs. 3.76; p<0.001) than the directors thought the residents were. Both groups wanted more education about these topics.

**Lessons Learned:**

Periodontics program directors evaluated the quality of their residents' education and the degree of comfort with the technologies significantly more positively than the residents did. However, both groups wanted more education about these topics. Open-ended responses of both groups were consistent with these differences and similarities.