Use of dental CAD/CAM and 3D printing techniques among Finnish dentists

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Abstract

Composite resin restorations have replaced amalgam as primary direct filling material. However, this practice is not trouble-free. Most restorations need repetitive repair or replacement within a couple of years due to fractures, wear or caries. Especially larger fillings in posterior teeth are challenging. Due to these problems indirect restorations have generalized. CAD/CAM (Computer-Aided Design and Computer-Aided Manufacturing) technology has gained foothold along with the expanding role of digitalization. Further, 3D printing is a quickly emerging technique also in dentistry to produce splints, surgical guides, orthodontic aligners, removable dentures and crowns. Use of dental CAD/CAM and 3D printing technologies for restorative treatments was evaluated among 3,777 Finnish dentists by an electronic questionnaire in February 2018. Of the respondents, 35.7% reported using CAD/CAM technique and 7.1% of them using 3D printing technique. Male dentists, dental specialists, those working in the teaching units or in the private sector reported using these technologies most frequently. A majority of the respondents would consider using 3D printing for manufacturing of tooth fillings in the future. Rayo 3D ToothFill provides most precisely fitting tooth fillings and restorations for occlusion rehabilitation and aesthetic dental care. Fillings and restoration manufactured by digital imaging and 3D printing fit instantly, are durable and wear equally with the natural tooth. Printing technology enables preparing color and translucency similar to natural tooth. Precise accuracy reduces the probability of caries. This novel innovation will make advanced dental care more equally affordable improving oral health for even more people.

Biography:

Pirkko-Liisa Tarvonen has completed her Specialist degree in public health carefrom University of Turku, Finland and her PhD from University of Eastern Finland. She is the Director of Teaching and Treatment Unit, Helsinki Central University Hospital and Dental Marketing Director at Rayo 3D-Toothfill Ltd.