



Periodontitis, one of the most prevalent diseases, is regarded as the most common reasons for tooth loss. Clinical skills of periodontics like probing, scaling and root planing are of high technical sensitivity, which indicates that repetitive training is a must for medical students. Traditionally, phantom head with artificial or extracted teeth, and pig jaws are used for pre-clinical periodontal training. However, the availability, physical properties (such as stiffness and friction), cost, and ethics are some of the major problems of the existing training methods. Practicing on live patients is much more effective, while exposing the patients to high risk due to the insufficient training.

In recent years, haptic-enhanced VR simulation is proposed as an alternative methodology to provide the sensorimotor training needed as part of the dental curriculum. Here, we developed a commercial VR system, Unidental[®], which establishes a VR-based periodontal skill training circumstances by integrating mechanical and visual display. It reproduces the feeling and information of dental operation on real teeth and periodontal tissue and can help with the repetitive training of probing, scaling, root planing and basic periodontal surgeries. Thus, it is a good supplement to the traditional pre-clinical periodontal training. However, there is several problems for the large-scale application. How to evaluate the training effect of these simulators, whether these simulators truly promoted the skills remain unclear. More researches on this innovative training method are needed for further development of the VR training system, and the improvement of pre-clinical periodontal training.

