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Development of Force-Endurance Models for Simulated Dental Task

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Abstract: Little information is available on the force exerted in precision gripping employed in health care. Professionals, especially dental hygienists, when treating patients adopt awkward postures for extended period leading to cumulative trauma. Results from a preliminary study provided directions to investigate the fundamental research question of how long can dental professional exert and hold during dental tasks. Mathematical prediction equations for endurance times were developed and validated using the data from a total of sixty participants that included 30 experts and 30 novices, all performing periodontal task. This research is first of its kind on precision grasps used in dentistry whose implications and recommendations have been discussed.

Keywords: Endurance Time, Modified Pencil-Hold, Pinch Force, Latex Gloves, Scaling Task, Dental Hygienists