2-2021

Pandemic Sparks Innovation in Virtual Care Education

Bonnie L. Rogulj

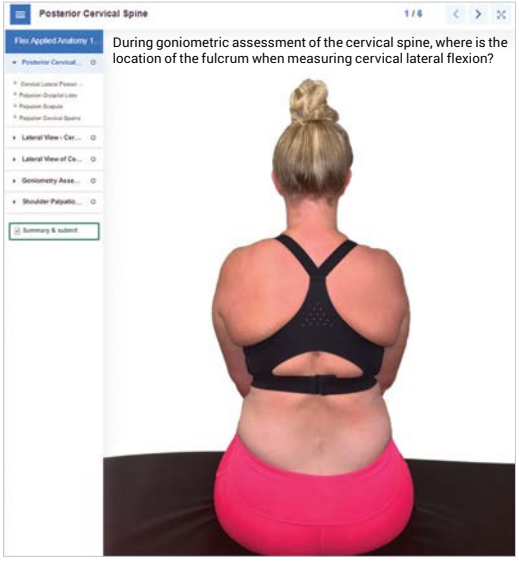
Forum

/ OCTOBER 2020

Pandemic Sparks Innovation in Virtual Care Education

As a novice educator in a doctor of physical therapy program, I constantly seek innovative methods to enhance students' knowledge and skills through methods related to experience, practice, and study. Recently, I was inspired by a Viewpoints article in the October issue of APTA Magazine. In an effort to meet the needs of students facing challenges as a result of COVID-19, the authors of the October piece described an innovative method using smartphone technology to improve students' knowledge and skills with regard to goniometry.

That account led to our effort to create a series of interactive virtual activities related to the cervical spine and upper extremities for novice students enrolled in the Applied Anatomy course (see example below). Student knowledge of basic anatomical landmarks important for palpation and goniometric skills was assessed by selecting "hot spots" positioned on a variety of uploaded images. Students also were instructed to align a goniometer on uploaded images with the correct anatomical landmarks, and then to assess the displayed range of motion.



To create these activities, we used technology that included the iPhone XR, Adobe Photoshop, and H5P's HTML5 Package — an open-source JavaScript-based content collaboration framework. Students accessed all activities by selecting the link and then completing the exercise with minimal equipment — primarily a computer with internet access and a universal goniometer.

As a result of COVID-19, the physical therapy profession has required increased use of technology to manage patients and clients. Telerehabilitation has allowed PTs to provide cost-effective services to patients and clients at a distance. In addition to enhancing student knowledge and skills, the use of technology will prepare future health care leaders to be "tech-savvy" in the face of a global pandemic.

Previous studies have demonstrated the ability of therapists to successfully perform patient assessment via telehealth using outcome measures. Range of motion as an outcome measure has been assessed virtually by primary methods of visual estimation and goniometric measurement. Studies have validated the use of a smartphone to perform goniometric assessment of the upper extremity. Study findings have demonstrated several benefits of photography, including (but not limited to) patient access to distance care, providing a form of documented record, and enabling providers to compare progress over time.

For educators motivated to create virtual activities to further enhance students' knowledge and skills specific to goniometric assessment, review of previous telerehabilitation studies may be beneficial.

First, educators should consider the students' equipment needs to complete virtual activities. Previous studies have recommended use of a measurement instrument in clinical practice, such as a universal goniometer.

Second, for improved visualization of anatomical landmarks and desired motion created by the long bones, educators also should consider equipment placement. Research has recommended camera placement at a location of three to five feet.

Third, due to the nature of virtual activities, students will not be able to physically palpate anatomical landmarks for alignment of the goniometer during assessment. Novice students may possess limited clinical skills, including observation and palpation, potentially resulting in increased error of goniometric measurements. To reduce potential for error, educators may consider use of a marker to improve anatomical landmark identification for instrument alignment on virtual images.

COVID-19 has challenged our profession in both the clinical and academic settings. To meet the unique needs faced by students as a result of the global pandemic, we must expand beyond traditional learning. I am very grateful for the sharing of innovative ideas that will prepare our future health care leaders for patient and client care in the digital age.

BONNIE ROGULJ, PT, DPT
UNIVERSITY OF ST. AUGUSTINE
BOARD-CERTIFIED CLINICAL SPECIALIST IN GERIATRIC PHYSICAL THERAPY