Abstract

Purpose: Smartphones have become a staple in our society. They are essential not only for our day-to-day lives but also as a healthcare tool in the face of the emergence of a myriad of health-based applications. Analyze the reliability and concurrent validity of an iPhone app as compared with traditional goniometry.

Methods: 21 subjects of our work centre, in 2016 had 4 measurements of their degree of knee flexion for a randomly chosen knee position: 2 by universal goniometry (UG) and 2 by the Goniometer-Pro (G-Pro) application. A different evaluator made each measurement. The radiographs were used as a gold standard to measure the actual knee flexion angle.

Results: The difference between mean intra-group values was 3,148° (±2,669°) and 2,476° (±2,638°) for G-Pro. The difference between the mean intra-group values was 5.45°. Inter-observer consistency for UG was 0.990 and 0.993 for G-Pro; As regards validity, the
values obtained were 0.976 for UG and 0.992 for G-Pro.

Conclusions: The Goniometer-Pro app seems to be a reliable and accurate tool for determining the values of knee flexion. The values obtained are slightly more accurate than those of traditional goniometry.

Implication: This study intends to promote the use of apps of systemic form in the health system, as a component integrated into the management of the health. This work not only compares the reliability of two methods of measurement, compare the reliability or validity with a gold standard, as it is the radiological measurement.

References

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Index Terms

Computer Science

Biomedical
Keywords

Goniometry; smartphone app; knee flexion; knee.