Medical Engineering & Physics, vol.89, pp.7-11, March, 2021.

Validity and intra-examiner reliability of the Hawk goniometer versus the universal goniometer for the measurement of range of motion of the glenohumeral joint

S. Pérez de la Cruz; O. Arellano de León; N. Pérez Mallada; A. Vargas Rodríguez

Abstract-

** **
Aim:
The aim of this study was to establish the validity of an external measurement system (the Hawk goniometer). This is a digital device which measures joint ranges compared to the universal goniometer for the measurement of shoulder range of motion in healthy adults.
** **
Material and methods:
A correlational study with 157 healthy volunteers completed six shoulder movements (forward flexion, abduction, extension, adduction and internal and external rotation) with each shoulder. The degree of agreement between each goniometer and Hawk measurement was assessed using Intra-class Correlation Coefficients (ICC) and Bland-Altman 95% limits of agreement (LOA).
Results:
The tests showed a very strong relationship between the readings of both devices (CI between 0.81 and 0.99) and there were no significant differences between the mean readings of both devices. An intraclass correlation coefficient (ICC) of above 0.9 was obtained, indicating a high intra-evaluator reliability of the Hawk goniometer in repeated measurements of shoulder range of motion.
** **
Conclusions:
The Hawk goniometer is a valid and reliable element for the objective measurement of the range of motion at the shoulder joint.

Index Terms- Hawk goniometer; Universal goniometer; Range of motion; Assessment; Shoulder

Access to the Journal website

Citation:
Pérez-de la Cruz, S.; Arellano de León, O.; Pérez Mallada, N.; Vargas Rodríguez, A. "Validity and intra-examiner reliability of the Hawk goniometer versus the universal goniometer for the measurement of range of motion of the glenohumeral joint", Medical Engineering & Physics, vol.89, pp.7-11, March, 2021.