

Psychometric Assessment of Modified Harris Hip Score for Femoral Neck Fracture in Indian Population

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Abstract:

Background Objective of the study was to evaluate and compare psychometric properties such as validity, reliability, floor ceiling effects and interpretability of the modified Harris Hip Score (mHHS) and the Forgotten Joint Score (FJS) in patients undergoing bipolar hemiarthroplasty for femoral neck fracture in Indian patients, because this has not been done before.

Methods This observational study consisted of 40 consecutively operated patients. Construct validity and reliability were evaluated using correlation coefficient and Intraclass correlation coefficient (ICC), respectively. Interpretability was evaluated by describing mean and standard deviation of mHHS and FJS in five subgroups of patients based on their response to the global rating questions and assessment.

Results The mean follow-up duration was 15.7 months ± 0.4. There was very high correlation between mHHS and FJS ($r = 0.92$, $p < 0.0001$) suggesting convergent construct validity. The results of correlation coefficient were 100% and 66.7% in accordance with the pre-formulated hypotheses for mHHS and FJS, respectively. mHHS and FJS demonstrated adequate construct validity and inadequate construct validity, respectively. The ICC value for mHHS and FJS was 0.80 ($p = 0.005$) {adequate reliability} and 0.34 ($p = 0.06$) {inadequate reliability}, respectively. Both mHHS and FJS-12 demonstrated acceptable level of floor (0% for mHHS and 14.3% for FJS) and ceiling effects (12.5% for both mHHS and FJS). There was significant difference in the mHHS and FJS in the five subgroups of patients suggesting adequate interpretability.

Conclusion We recommend the use of the modified Harris Hip Score over the Forgotten Joint Score for functional outcome evaluation of Indian patients from rural setting undergoing bipolar hemiarthroplasty for femoral neck fracture.

Keywords: Patient-reported outcome measures, Surveys and questionnaires, Hip prosthesis, Arthroplasty, replacement, hip, Femoral neck fractures, Construct validity, Interpretability, Modified Harris Hip Score, Forgotten Joint Score