

BACKGROUND/PURPOSE

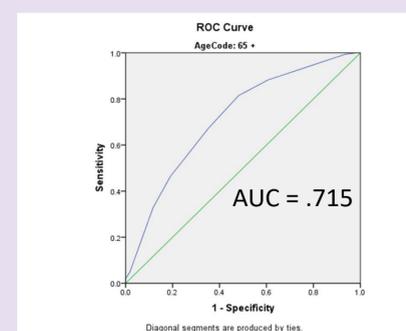
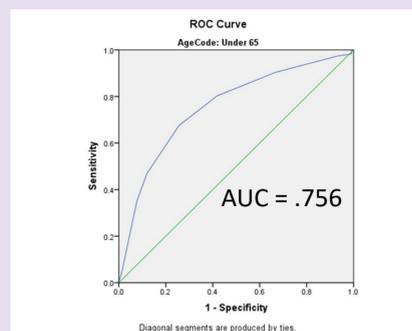
The changing healthcare environment has decreased hospital stay for patients undergoing total joint replacement (TJR), and circumstances unique to older adults often impact their ability to directly return home (Schwartzkopf R, et al, *Geriatr Orthop Surg Rehabil.* 2015;6(3); dePablo P, et al, *Arthritis Rheum.* 2004;51(6)). Research previously presented by these authors identified statistically significant correlations among age, discharge (D/C) destination, and scores using the Boston University Activity Measure for Post-Acute Care “6-Clicks” Impatient Short Forms (6-Clicks), and determined the physical therapy (PT) 6-Clicks cutoff score at initial evaluation (IE) as 13.5/24 (Boston Rehabilitation Outcomes Center, School of Public Health, Boston University. AM-PAC: Boston University Activity Measure for Post-Acute Care. In-Patient Short Forms, 2013; Maida DR, et al, APTA CSM, 2016). Based on the data in the previous study occupational therapy (OT) IE cutoff scores could not be determined to predict D/C destination greater than chance (Maida DR, et al, (APTA CSM 2018). The purpose of this study was to determine if PT and OT 6-clicks cutoff scores to predict discharge to home were different in patients age 65 and older when compared to patients younger than 65 years.

HYPOTHESIS

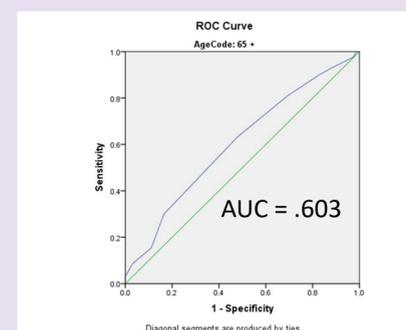
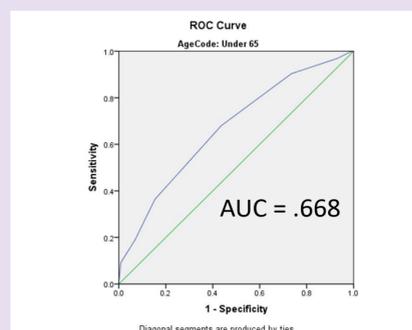
The hypothesis was that patients younger than 65 years that were discharged directly to home would have a lower cutoff score on the IE 6-Clicks when compared to patients age 65 and older. Based on previous research, other hypotheses were that patients could be discharged to home in spite of lower IE scores due to compensatory strategies taught during hospital stay as well as anticipated limitations due to the simplicity of the tool, only accounting for functional assessment.

METHODS

- Approval for this study was obtained from The University of Scranton Physical Therapy DRB and hospital administration at *Regional Hospital of Scranton*.
- 846 charts were reviewed of persons who underwent elective Total Knee Replacement, (TKR), Total Hip Replacement (THR), and Total Shoulder Replacement (TSR) at *Regional Hospital of Scranton* between June 2013 and February 2015.
- Data collected included: age, PT and OT IE 6-Clicks scores, and D/C destination.
- The data was entered into IBM SPSS Statistics 23 (SPSS) and analyzed using Crosstabs (age, D/C destination, and 6-Clicks), ROC Curve analysis, and MEDCALC diagnostic test evaluation.



Figures 1 and 2: ROC Curves for PT IE 6-Clicks < 65 years (left) and > 65 years (right)



Figures 3 and 4: ROC Curves for OT IE 6-Clicks < 65 years (left) and > 65 years (right)

RESULTS

- Sample age range 29-91 years; Average age = 65.76 years
- Subject breakdown by age: < 65 years = 352 (41.6%) and > 65 years = 494 (58.4%)
- ROC Curve analysis and MEDCALC tests revealed cutoff scores providing the best accuracy for determining D/C destination to home to be:
 - < 65 years PT 13.5/24 [Sensitivity 67.54%, Specificity 74.36%, Positive Predictive Value 83.70%, Negative Predictive Value 54.04%]
 - > 65 years PT 13.5/24 [Sensitivity 67.28%, Specificity 64.72%, Positive Predictive Value 48.66%, Negative Predictive Value 79.72%]
 - < 65 years OT 17.5/24 [Sensitivity 67.98%, Specificity 56.41%, Positive Predictive Value 75.24%, Negative Predictive Value 47.48%]
 - > 65 years old OT 17.5/24 [Sensitivity 63.19%, Specificity 52.15%, Positive Predictive Value 39.77%, Negative Predictive Value 73.91%]
- Area Under the Curve
 - < 65 years PT = .756 (Fair Discrimination)
 - > 65 years PT = .715 (Fair Discrimination)
 - < 65 years OT = .668 (Poor Discrimination)
 - > 65 years OT = .603 (Poor Discrimination)

DISCUSSION

- Limited, evidence-based standardized tools exist to assist therapists in the acute care setting objectively assess patient performance to guide decision making regarding discharge.
- In recent years, several published studies established the reliability and validity of the “6 Clicks” and the utility of using it to determine discharge destination (Jette, D, et al., *Phys Ther,* 2014;94(3), 2014;94(9), 2015;95(5)).
- Recent published research specific to TJR population further validates the 6-Clicks as a valid tool to predict non-routine discharge (rehab/SNF) in immediate post-op period. (Menendez ME, et al, *J Arthroplasty.* 2016;31(9)).
- Based on the findings of this study, IE 6-Clicks cutoff scores were not impacted by age for PT (13.5/24) or OT (17.5/24) when predicting discharge to home.
- For PT, each subgroup score was also equal to the cutoff score of the previous analysis of the broad sample.
- Although an OT cutoff score was determined, statistical analyses suggests that the 6-Clicks tool may more accurately predict discharge for PT vs OT.

CLINICAL RELEVANCE

- Older adults are more likely to portray characteristics, such as comorbidities and lack of social support, preventing discharge to home following TJR. When determining cutoff scores to predict D/C destination, it is important to acknowledge the impact that such factors may have, therefore possibly requiring a separate IE 6-Click cutoff score based on age.

LIMITATIONS

- Patients evaluated who were undergoing elective TJR were otherwise relatively healthy and independent prior to surgery
- Limited generalizability for general acute care population who have a more complex medical history or lower mobility levels prior to hospital admission
- All patients underwent surgery at a single hospital

CONCLUSIONS

- Based on the findings of this study, age does not impact 6-Clicks cutoff score for discharge to home following TJR.
- Future research should address whether type of TJR compared to patient age and also further investigation of older age cutoff scores (e.g. 75 years).

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