Investigating the Predictive Value of the AM-PAC "6 Clicks" on Discharge Destination Following Elective Joint Replacement

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BACKGROUND

The changing healthcare environment and reduced hospital length of stay has placed great emphasis on an acute care physical therapy evaluation to quickly determine discharge (DC) destination. Therapists are further challenged to consider multiple psychosocial factors such as age, health insurance coverage, support system at home, in addition to functional/mobility performance concerning DC recommendations. The Boston University Activity Measure for Post-Acute Care "6 Clicks" Inpatient Short Forms (6 Clicks) is a standardized assessment of patient activity limitations utilized during acute care hospitalization. (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).

PURPOSE

The purpose of this study was to analyze 6 Clicks data from individuals who have undergone elective total joint replacement surgery (TJR) to determine if the scores on initial evaluation and at DC, are predictive of appropriate DC disposition. Other psychosocial data was simultaneously gathered to determine whether these factors further impacted the recommendation of DC destination.

HYPOTHESIS

The hypothesis was that younger age, commercial insurance coverage, independent mobility without an assistive device, support at home, single story home set up, and higher initial 6 Clicks scores at evaluation would be associated with the ability to predict DC directly to home from the acute care setting following elective TJR.

METHODS

• Approval for this study was obtained from The University of Scranton Physical Therapy DRB and hospital administration at *Regional Hospital of Scranton*.
• 327 charts were reviewed (n=315 after removal of incomplete records) 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, gender, health insurance, type of surgery, prior level of function, prior assistive device use, support at home, home set-up, initial and DC 6 Clicks scores for physical and occupational therapy (PT and OT), and DC destination.
• The data was entered into IBM SPSS Statistics 23 (SPSS) and analyzed using Pearson Correlation Coefficients, Analysis of Covariance (using age as the covariate), and Crosstabs accompanied by Chi Square and Contingency Coefficients.

|		Home/ Home Health	Rehab/ SNF
Gender	Female	27.2 %	36.1 %
	Male	19.3 %	17.4 %
Insurance*	Medicare	12.5 %	31.2 %
	Other	33.6 %	22.3 %
Assistive Device	No Device	33.0 %	30.9 %
	Any Device	13.4 %	22.6 %
Support at Home	Lives Alone	7.4 %	16.0 %
	Someone	39.4 %	36.0 %

*1 recorded not coded

Table 1. Comparison of Psychosocial Variable Percentages Based on Discharge Destination
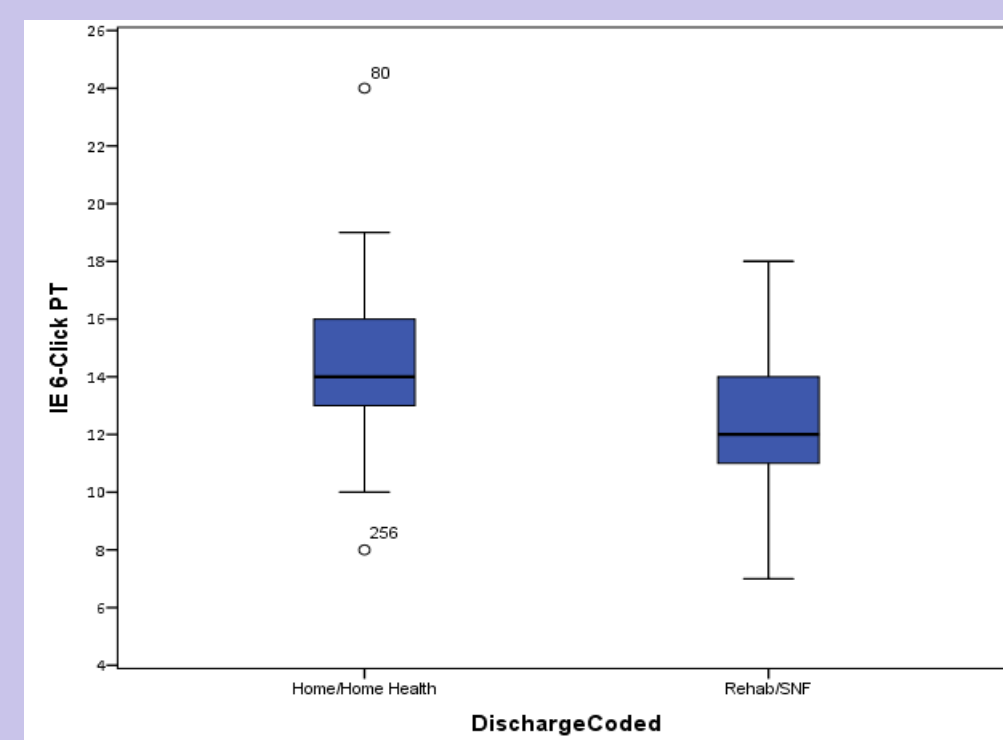
	Discharge Coded	n	X̄	SD
Age	Home/Home Health	146	61.36	10.935
	Rehab/SNF	169	69.50	9.548
IE 6-Click PT	Home/Home Health	146	14.21	2.004
	Rehab/SNF	169	12.87	1.996
DC 6-Click PT	Home/Home Health	146	21.98	2.026
	Rehab/SNF	169	17.53	2.596

Table 2. Descriptive Statistic Information for Age and 6 Clicks Scores
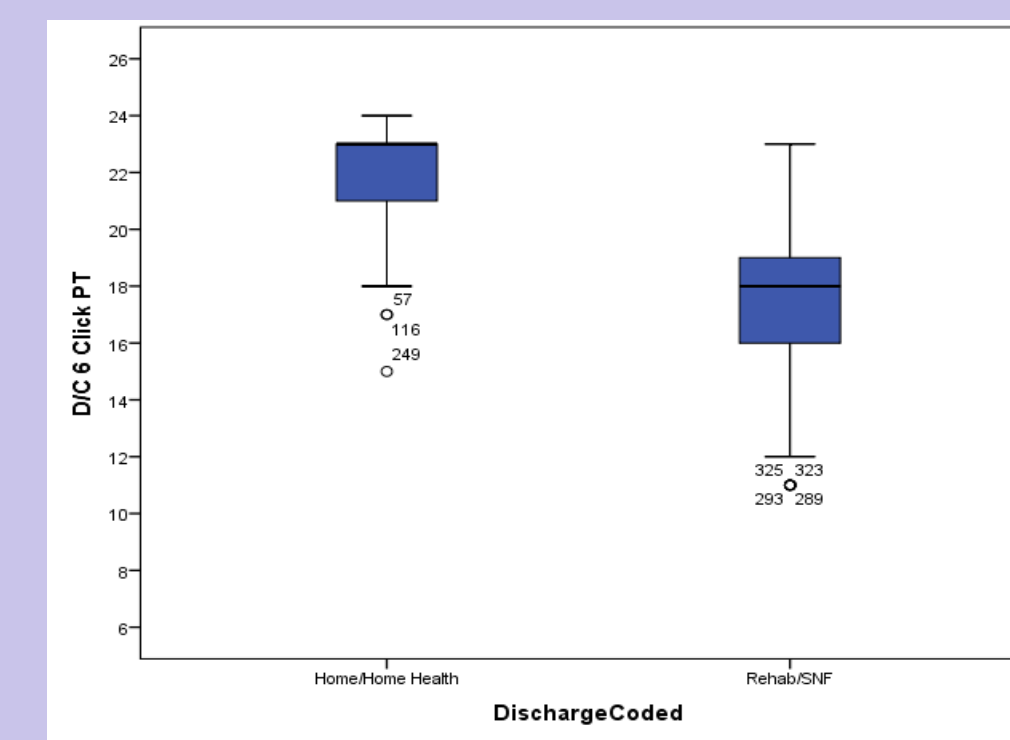
Figures 1 and 2: Range of 6 Clicks scores between discharge destination variables at initial evaluation (left) and at time of discharge from the acute care setting (right)

RESULTS

• Analyses among key variables revealed very robust correlations between discharge PT (r=.688, p<.001) and OT (r=.712, p< .001) 6 Clicks scores and discharge destination [defined as Home/Home health or Rehab/SNF] and low to moderate correlations between initial PT (r=.318, p<.001) and OT (r = .195, p<.001) 6 clicks, where PT was somewhat more predictive of discharge destination
• Age was moderately correlated (r = .370, p<.001) with discharge destination and, therefore, used as a covariate in other analyses
• Crosstabs analysis revealed statistically significant correlations between discharge destination and insurance [Medicare, Commercial, Medicaid, Worker's Compensation] (χ^2=33.776, p<.001), support at home [Alone, Someone, Facility] (χ^2=13.509, p=.001) and assistive device use prior to surgery [No device, Device all the time, Device as needed] (χ^2=7.164, p=.028)
• Type of surgery [THR,TKR, TSR] (χ^2=4.878, p=.087), home set up [1-story, 2-story, 3-story, 4-story] (χ^2=6.598, p=.159), and gender [Male, Female](χ^2=2.759, p=.097) were not statistically significant
• The series of one-way ANOVAs, with age as a covariate, revealed the following statistically significant relations between 6 Click scores and discharge destination
    • Initial Eval (IE) 6 Click PT ($F_{(1,315)}$=33.700, p<.001, Partial η^2=.174)
    • Discharge (DC) 6 Click PT ($F_{(1,315)}$=122.788, p<.001, Partial η^2=.441)
    • Initial Eval (IE) 6 Click OT ($F_{(1,315)}$=8.630, p<.001, Partial η^2=.051)
    • Discharge (DC) 6 Click OT ($F_{(1,315)}$=157.657, p<.001, Partial η^2=.496)

DISCUSSION

• There are limited, evidenced-based standardized measures available to assist therapists in the acute care setting for objective assessment of patient performance to guide decision making regarding DC
• In recent years, Jette, et al. have published several studies establishing the reliability and validity of the 6 Clicks and the utility of using it to determine DC destination (Jette, D, et al., *Phys Ther*, 2014;94(3), 2014;94(9), 2015;95(5))
• Previous research did not analyze psychosocial factors that often play a role in DC planning, such as support at home and non-Medicare insurance coverage
• This study identified the primary factors impacting DC as age, type of insurance coverage , support at home, and use of an assistive device prior to surgery
• Identification of influential variables such as those listed above, combined with initial evaluation 6 Clicks scores can assist the therapist in making safe and efficient DC recommendations

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

CONCLUSION

• 6 Clicks scores, including those at IE, may be predictive of appropriate discharge destination for patients undergoing elective TJR
• Further analysis of existing subgroup data and intragroup data may also demonstrate elements contributing to DC destination
• Future research should compare the findings of this study with findings involving patients who undergo surgical repair following hip fracture as well as other general medical diagnoses