Identifying Multiple Predictors of Physical Rehabilitation Outcomes

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Table 1- Significance values of SLUMS score and weeks in rehabilitation

	Unstandardized Coefficents		Standardized Coefficents		
	B	Std. Error	Beta	t	Sig
Constant	109.134	164.054		0.665	0.509
Gender (0 = male)	-78.041	31.571	-0.318	-2.472	0.017*
Age	-1.085	1.846	-0.078	-0.588	0.559
Weeks in Rehabilitation	10.109	7.734	0.159	1.307	0.197
SLUMS Score	7.281	2.346	0.43	3.104	0.003*

* Indicates statistical significance where $p < .05$; Model R-squared = 0.22

Introduction

In geriatric populations, the ability to complete activities of daily living (ADLs) assesses a patient's current state of independence. On a basic level, ADLs can measure self-care functions of daily life such as eating, bathing, dressing, and toileting. It has been suggested that ADL disability is an outcome of:

- **Cognitive Impairment**
- **Physical Limitations**
- **Psychosocial Factors**
- **Environmental Constraints**

Literature suggests this baseline ADL measurement can be effective in predicting physical therapy outcomes. The goal of this project, therefore, is to relate patients' admission data to their rehabilitative data. Because we know that each of these domains contributes to real-world function and ability, we can observe the extent to which these factors contribute to rehabilitation success.

Methods

Data was collected through collaboration with a clinical community partner, Sunshine Terrace Skilled Nursing and Rehabilitation. Deidentified health data from 93 patients were collected within five days of admission. The following health data was used for analysis:

1. **Saint Louis Univesrity Mental Status Exam (SLUMS):**
   -*Used to measure cognitive ability.*
2. **Six Minute Walk Test (6MWT):**
   - *Used to measure rehabilitation success*
3. **Minimun Data Set (MDS)** :
   -*Used to measure psychosocial and physical function*

Figure 2 – SLUMS Scores and Rehabilitation Improvement
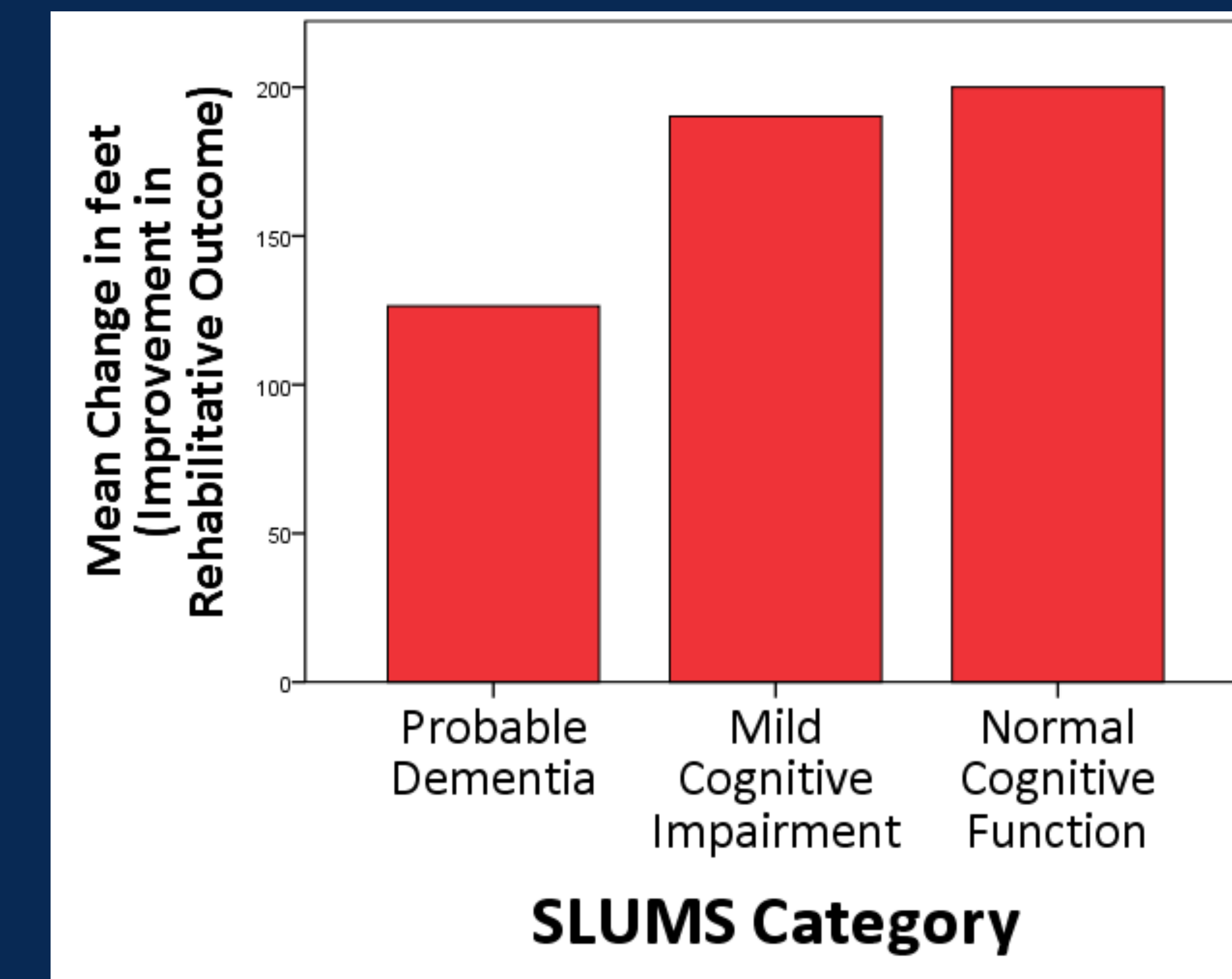
Patients with cognitive impairment showed less rehabilitation improvement than patients with normal cognitive function

Results

Linear regression models did not indicate relationships between psychosocial factors and physical limitations with rehabilitation success. However, linear regression models did indicate that cognitive ability at intake (SLUMS score *B*=.420; p <.01) predicted improvement in walking ability (change in feet on the 6MWT from intake to discharge), even after accounting for gender (*B*=-.318; p <.05), age (*B*=-.078; p = n.s.) and number of rehabilitation sessions attended (*B*=0.159; p = n.s.). Model R-squared = 0.221

Conclusion

Results indicate cognitive function measured at intake may be used as a predictor for rehabilitation success, more so than number of rehabilitative sessions. Future studies can asses the viability of this predictor across all geriatrics and additional methods of improving rehabilitation success once high risk patients are identified at intake.

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