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Identifying Multiple Predictors of Physical Rehabilitation Outcomes

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Identifying Multiple Predictors of Physical Rehabilitation Outcomes

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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 University Mental Status Exam (SLUMS): Used to measure cognitive ability.
2. Six Minute Walk Test (6MWT): Used to measure rehabilitation success
3. Minimum Data Set (MDS): Used to measure psychosocial and physical function

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

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>Constant</td>
<td>109.134</td>
<td>164.054</td>
</tr>
<tr>
<td>Gender (0 = male)</td>
<td>-78.041</td>
<td>31.571</td>
</tr>
<tr>
<td>Age</td>
<td>-1.085</td>
<td>1.846</td>
</tr>
<tr>
<td>Weeks in Rehabilitation</td>
<td>10.109</td>
<td>7.734</td>
</tr>
<tr>
<td>SLUMS Score</td>
<td>7.281</td>
<td>2.346</td>
</tr>
</tbody>
</table>

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 ($B$=.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 assess the viability of this predictor across all geriatrics and additional methods of improving rehabilitation success once high risk patients are identified at intake.

1. Saint Louis University Mental Status Exam (SLUMS):
2. Six Minute Walk Test (6MWT):
3. Minimum Data Set (MDS):