Introduction

- Background
  - Seat Elevating Devices (SEDs) allow vertical movement of the seat of a power wheelchair (PWC), so users can perform mobility related activities of daily living (MRADLs), including transferring and reaching
  - RESNA’s position papers highlight the benefits of SEDs to promote ‘Safety, Independence, and Well-being’ and the need for outcome measurement
  - The Functional Mobility Assessment (FMA) is a 10-item Consumer-Centered Satisfaction Questionnaire that measures MRADLs
- Hypotheses
  - People using PWCs with SEDs would have higher overall mobility, reach, and transfer scores than without SEDs
  - Having a PWC with a SED would be a significant predictor of variance in total FMA scores between those with and without a SED

Methodology

- The FMA Registry was used in this retrospective study. Data collected under an exempt Institutional Review Board and vetted Collaborative Corporate Research Agreement with the Van G. Miller Group, Inc.
- IBM SPSS Statistics Vers. 27 & alpha level was set at 0.05
- Independent Samples T-tests were used to compare total FMA scores between those with and without a SED
- Mann-Whitney U tests were used to compare FMA items, reach and transfer scores, between those with & without a SED
- Univariate linear regression model used to control for confounding variables and determine if SEDs were a significant predictor of variance in total FMA
- Chi-squared testing used to assess the relationship of SEDs with medical and healthcare utilization outcomes.

Results

Demographics

<table>
<thead>
<tr>
<th>PWC Consumers in Analysis, N = 1,734</th>
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<tbody>
<tr>
<td>Age, Mean (SD)</td>
<td>57.6 (16.3)</td>
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<tr>
<td>PWC Users With SEDs, Count (%)</td>
<td>1,468 (84.7)</td>
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<tr>
<td>Female, Count (%)</td>
<td>891 (51.4)</td>
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- Consumers with SEDs had significantly higher total FMA scores than those without SEDs
  - SED: Median = 5; IQR = 5
  - No SED: Median = 4; IQR = 5
  - U =110,782; p<.001
- Consumers with SEDs had significantly higher FMA Reach scores than those without SEDs
  - SED: Median = 5; IQR = 5
  - No SED: Median = 4; IQR = 5
  - U =141,658; p<.001
- Consumers with SEDs were more likely to report having no falls (χ²=4.3, p<.001)
- Consumers with SEDs were more likely to be employed (χ²=5.5, p<.019)
- There was no significant difference in observed vs. expected frequencies in hospital admission between consumers with SEDs and those without (χ²=0.874, p=.351)
- Further analysis was performed using a sample of only group 3 power wheelchair users and all of the above findings still held true

Conclusion

- Study adds to current literature by demonstrating positive benefit of SEDs on satisfaction with functional mobility.
- The first key finding was that users of SEDs have higher overall functional mobility compared to those without SEDs.
- Consumers also had higher transfer and reach scores, likely because of the functional benefit that vertical height affords to carrying out these tasks.

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References