



Validation of Paratransit Skills Assessment for Using Paratransit Services

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Objective of Research >>



To validate a reliable tool to assess the ability of an individual to independently use public paratransit services based on their performance in a controlled testing environment.

Paratransit is defined as shared transportation service in which vehicles operate on-demand over fixed or flexible routes.

Developed through Grant from Organization for Autism Research (OAR)

Validated through Grant from NJDOH Governor's Council for the Medical Research and Treatment of Autism

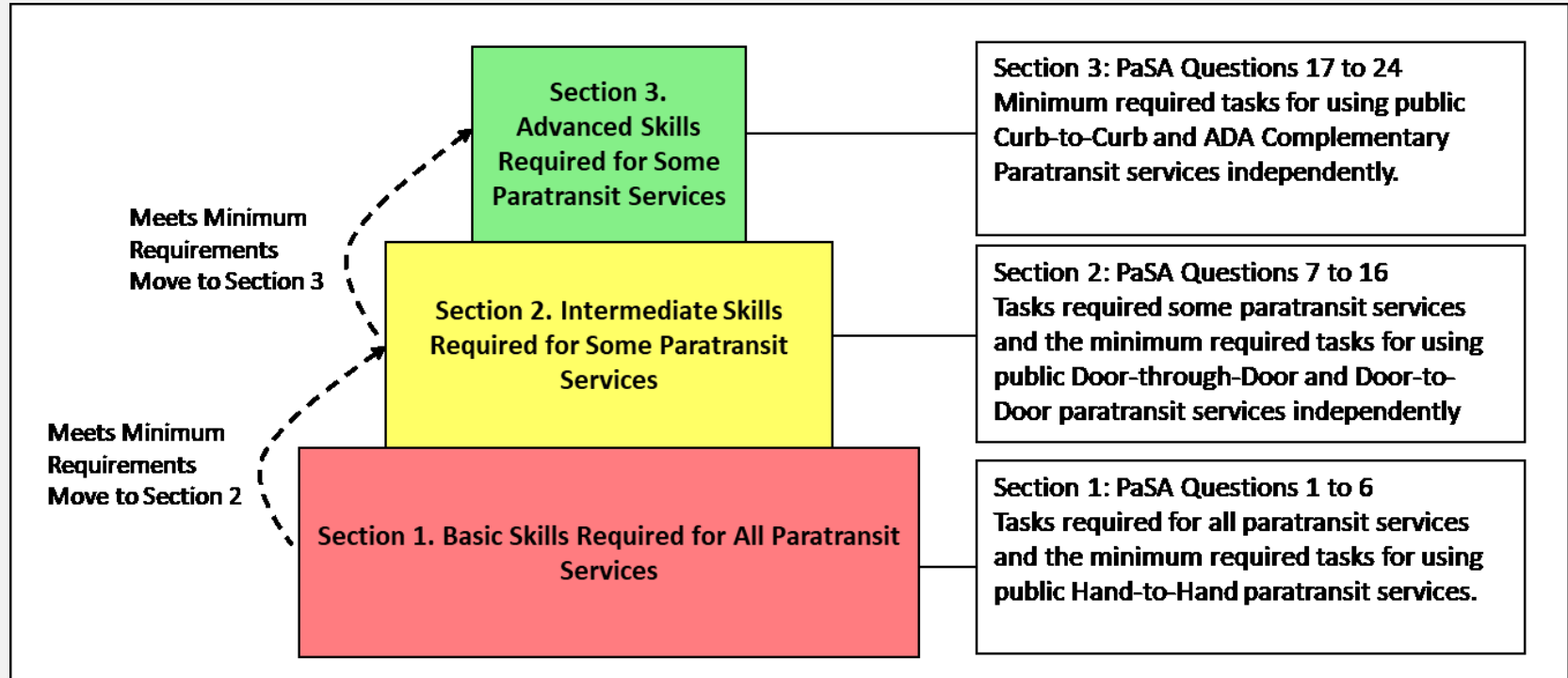
Overview of the Paratransit Assessment Research >>



- >> Allows for alternative communication styles
- >> Encourages least restrictive service
- >> 37 Assessment Tasks in 4 sections
- >> Understandable results for those not familiar with paratransit
- >> Conduct validation then analyze and disseminate results
- >> Based on “Criterion Referenced Assessment” methodologies
- >> 2011-2012 Pilot Test Study - 5 adults with ASD
- >> 2014-2015 Reliability Study - 26 adults with ASD currently using paratransit
- >> 2014-2017 Validation Study – 72 adults with ASD in 4 categories who never used paratransit or public transit independently

Assessment Design:

Hierarchical Pyramid of Skills Required >>



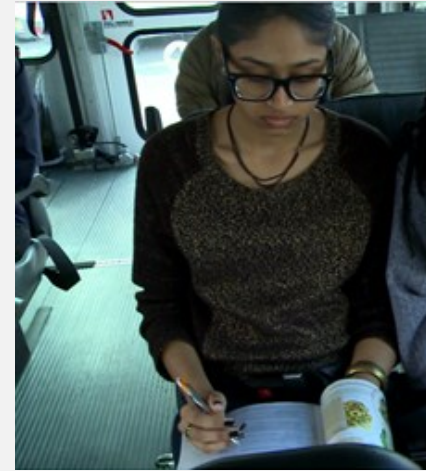
Validation Study Overview >>

>> Adults with an Autism Spectrum Diagnosis

- >> Ages 18 and over
- >> Never use paratransit services
- >> Able to understand spoken English

>> About Study Population

- >> 72 participants participated in Assessment
 - 12 Determined currently unable to use paratransit
- >> 60 participants met minimum criteria for in-vehicle test
 - 14 tested at Section 1 – Basic Skills
 - 5 tested at Section 2 – Intermediate Skills
 - 41 tested at Section 3 – Advanced Skills
- >> Conducted in Person from December 2015 through December 2017
- >> Individualized In-Person, On-Location Testing
- >> Research conducted under Rutgers IRB

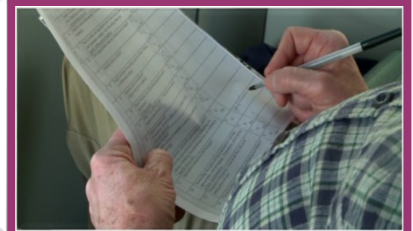


Paratransit Skills Assessment Validation Process >>



Participate in
Assessment

In-Vehicle Test
with Blind
Observers



Wait for
Vehicle

Board and Pay



Sit
Appropriately

Enjoy the Trip!



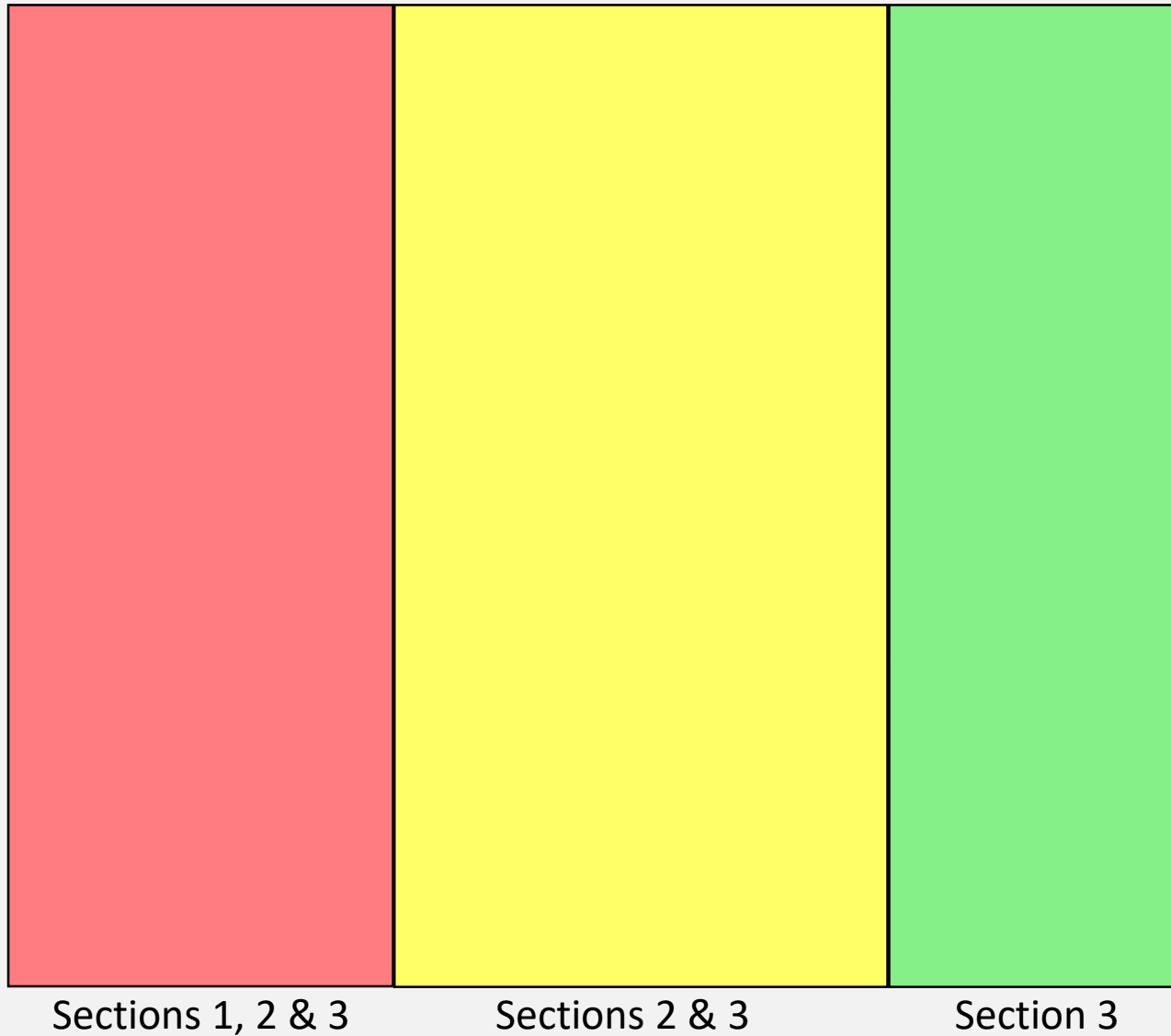
Analysis of Assessment and In-Vehicle Results >>

- Kappa Statistic for accuracy of blind observers
88% in almost perfect agreement
- Kuder-Richardson Analysis show high reliability, not homogeneous
72 Assessment scores $\rho = 0.847$
60 in-vehicle scores $\rho = 0.826$
- Accuracy Rate of 95.7%
- Full study had 4 Tasks above 5% error rate: Respond to Greeting, Follow Instructions, Identify Self, and Provide Identification
- 46 Participants in Sections 2 & 3 No Tasks had error rates above 5%
- Overall 9 Tasks had some errors
- Pearson's correlation coefficient was 0.977
High positive correlation and a strong linear relationship

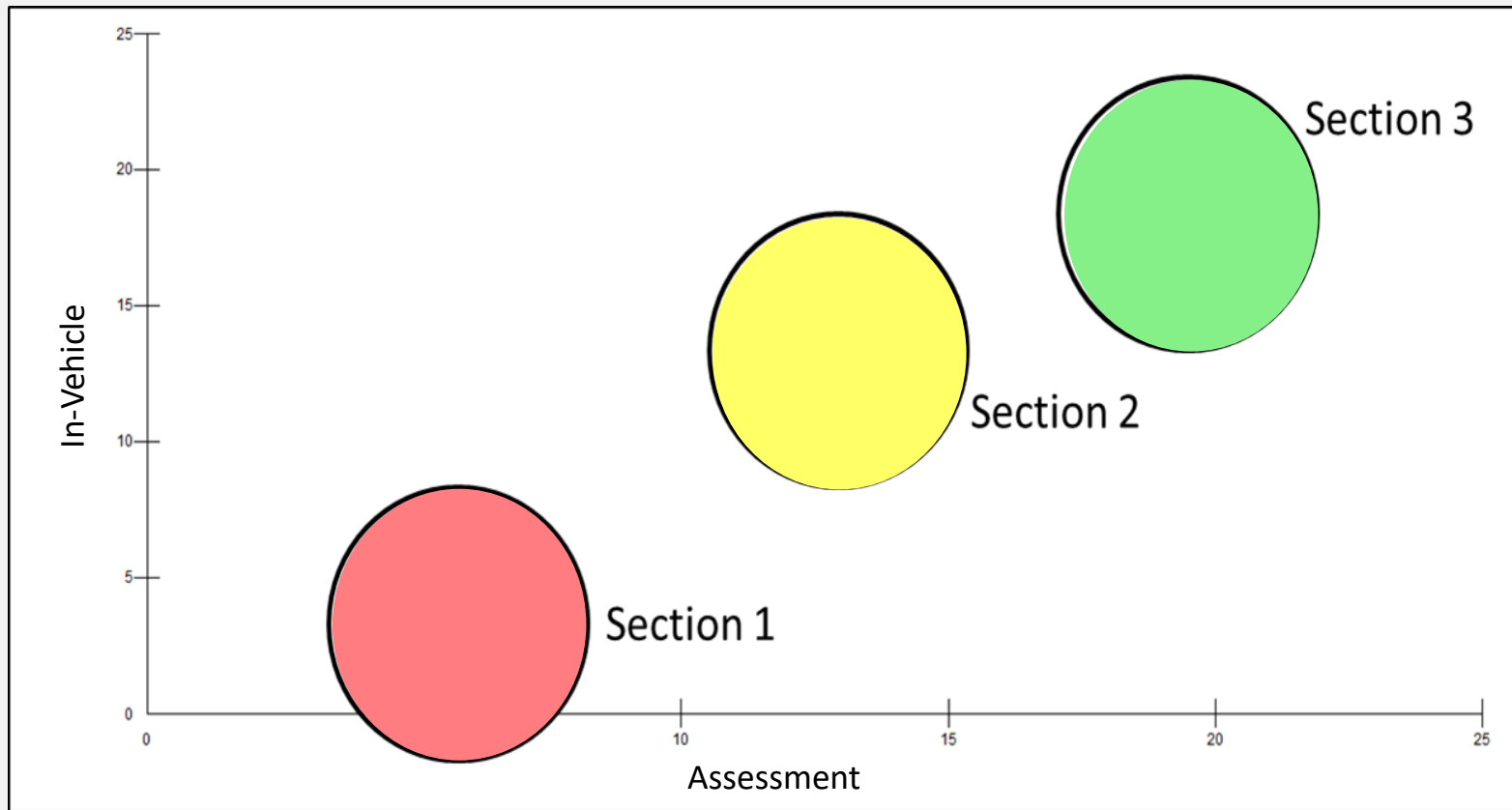
Differences Between Assessment and In-Vehicle >>

Assessment Task	Assessment Average	In-Vehicle Average	Difference	Wilcoxon Signed-Rank
* Inclusive of 14 Section 1, five Section 2, and 41 Section 3 Study Participants (60 total) ** Inclusive of five Section 2 and 41 Section 3 Study Participants (46 total) *** Inclusive of 41 Section 3 Study Participants Only (41 total)				

Correlation between Assessment & In Vehicle Test >>

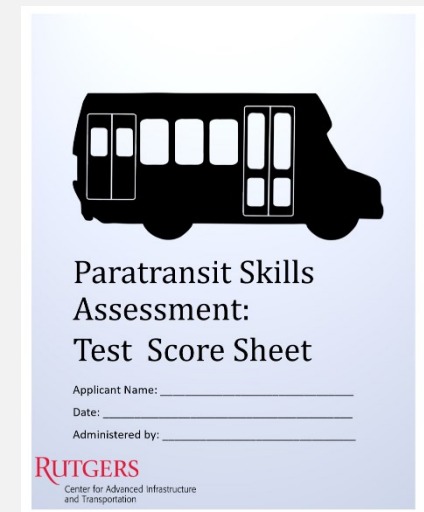
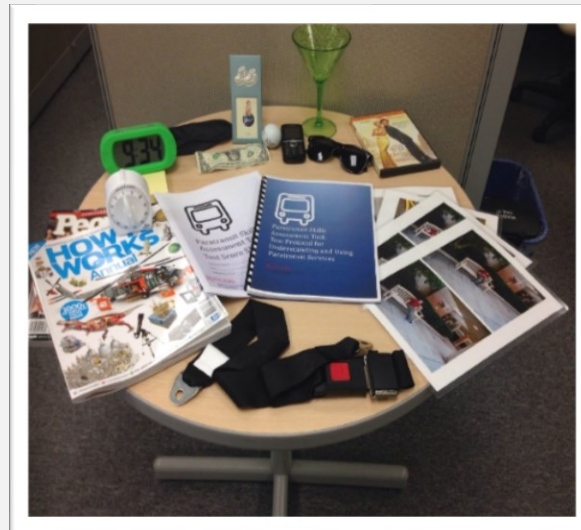
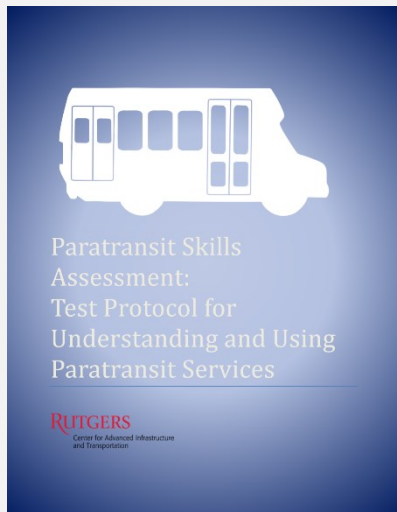


Cluster Analysis by Participant >>



Recommendations for Future Research >>

- Conduct reliability study in additional languages
- Expand study population for other populations with cognitive disabilities
- Gather aggregate data to address accommodations, supports and procedures
- Develop list of technological recommendations to assist in independent travel



Questions and Comments >>



Acknowledgements >>

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