Maenner MJ*, Smith LE, Hong J, Makuch R, Greenberg J, Mailick MR.

An Evaluation of an Activities of Daily Living Scale for Adolescents and

Adults with Developmental Disabilities. Disability and Health Journal (in press)

Waisman Center, University of Wisconsin-Madison *Contact: mjmaenner@wisc.edu

Background

There is a paucity of free and high-quality tools for measuring activities of daily living among adults with developmental disabilities.

Objective

To describe the development of the Waisman Activities of Daily Living (W-ADL) Scale, and to thoroughly evaluate its measurement properties for adolescents and adults with developmental disabilities.

Participants

Four longitudinally-studied groups of adolescents and adults with developmental disabilities:

406 with autism spectrum disorder [ASD]

169 with Down syndrome [DS]

147 with fragile X [FXS]

292 with intellectual disability [ID] of unknown origin

Waisman Activities of Daily Living Scale (W-ADL)

- •17 items via parent/caregiver report
- •Items rated: 0 (does not do); 1 (does w/ help); 2 (does on own / independently)

7. Grooming

- •For adults with substantial impairments
- •Free to use

W-ADL Items

- 1. Makes bed
- 2. Household tasks 8. Dressing
- 3. Errands
- 4. Home repairs
- 5. Laundry
- 9. Toileting 10. Simple food prep 16. Wash dishes
 - 11. Mixing/cooking 17. Banking/finance

13. Set/clear table

15. Eat from plate

14. Drink from cup

6. Bathing

12. Complete meals

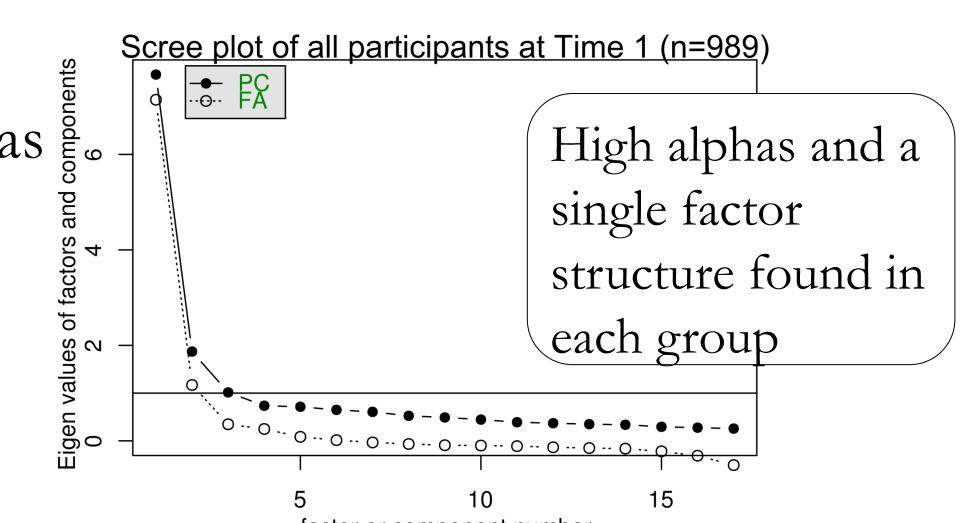
W-ADL evaluated according to eight criteria (Terwee et al)¹

1. Content Validity

- Researchers and clinicians identified appropriate activities, adapted items from other ADL measures, and sought feedback from respondents.
- >99% of individual items and 97.5% of W-ADL's sufficiently Items are appropriate completed at first time point in all studies (989 out of 1,014) & feasible

2. Internal Consistency

- In the four groups, Cronbach's alphas & at Time 1 ranged from 0.88 - 0.94
- Inter-item correlations largely between 0.2 - 0.6
- Similar structure in all four groups



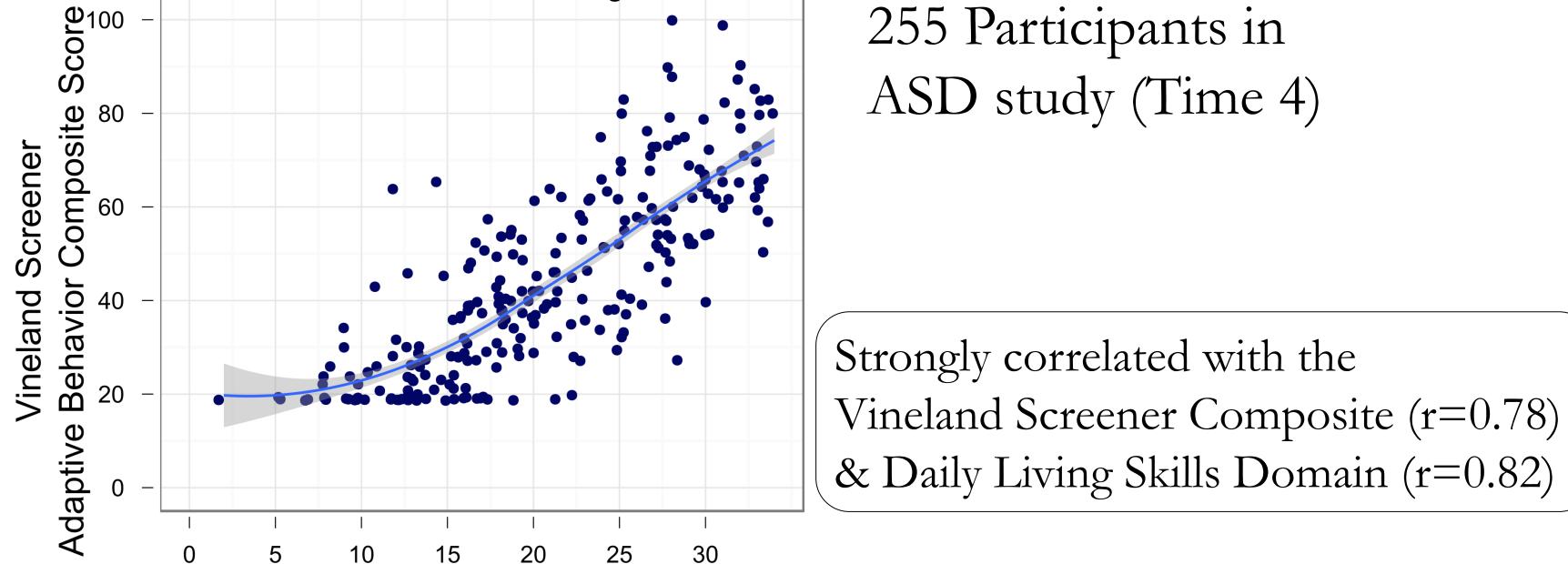
Can detect 1-point group

change with N > = 30.

Reliable over time and

between respondents

3. Criterion Validity



4. Construct Validity

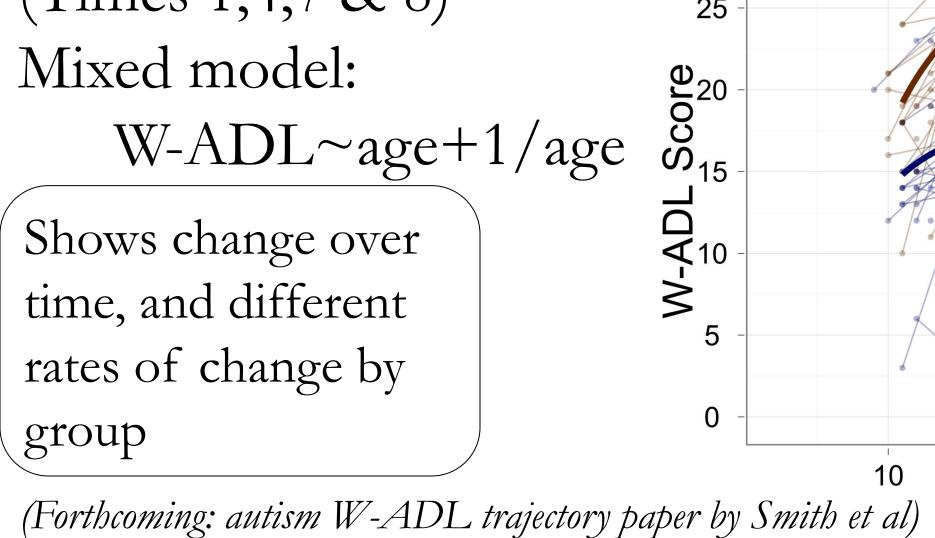
W-ADL Scale Score

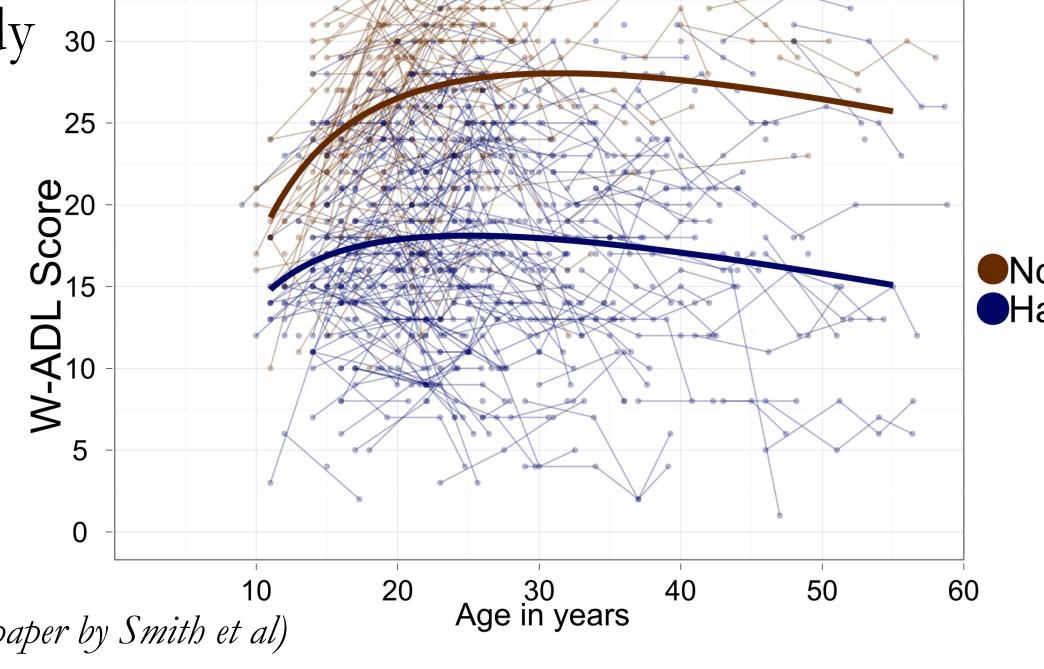
W-ADL scores were positively associated with IQ Associated with [DS/ID] and employment or education [ASD]. W-ADL other measures in scores were inversely associated with caregiving burden the hypothesized [FXS] and need or receipt of respite services [DS/ID]. direction

5. Reproducibility

- Using consecutive time points, the standard error of the measure was 1.9 [DS] and 2.0 [ASD]
- Therefore, a study of 30 or more participants could detect a change of 1 W-ADL point
- Mother-Father inter-rater reliability [DS/ID]: weighted κ =0.88
- Consecutive time points [DS/ID & ASD]: weighted k's 0.92-0.93

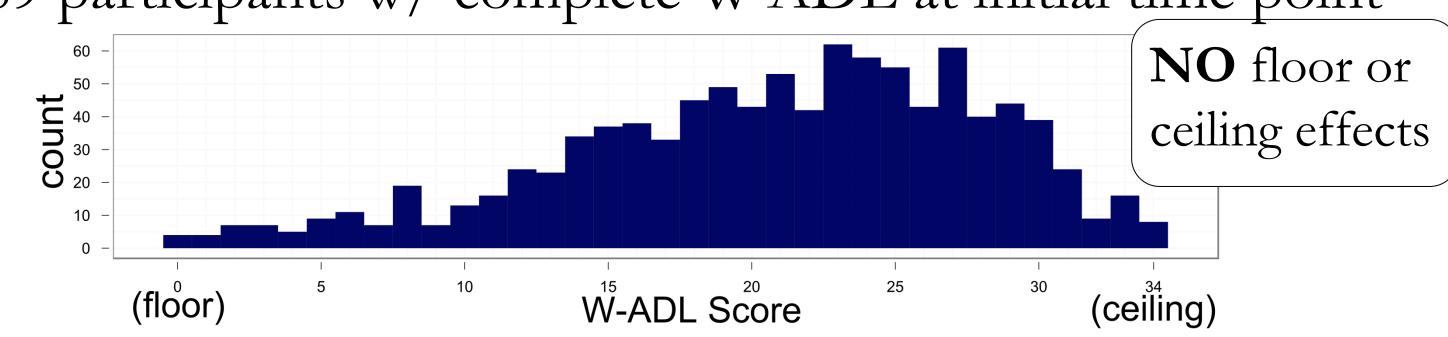
6. Responsiveness Participants in ASD Study 30 (Times 1,4,7 & 8) Mixed model:



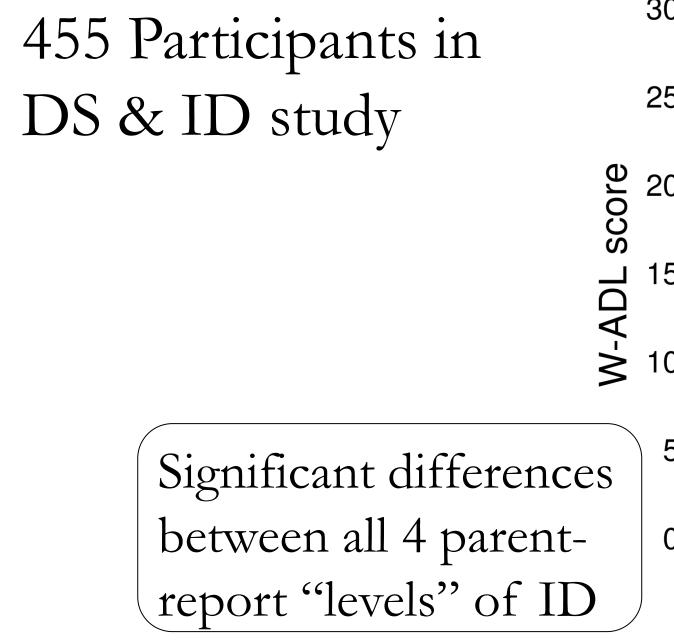


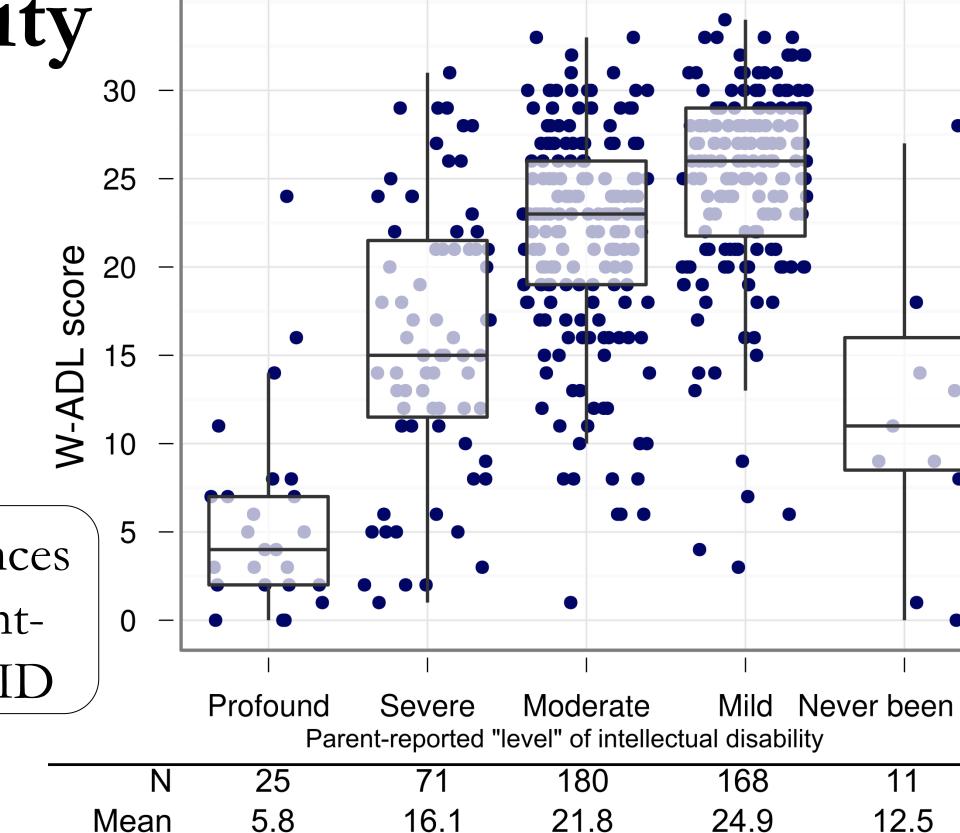
7. Floor & Ceiling Effects

989 participants w/ complete W-ADL at initial time point



8. Interpretability





Summary

The W-ADL exceeded each quality criterion we tested. This free tool has practical applications as an efficient measure of activities of daily living for research concerning adults with developmental disabilities

Reference: 1. Terwee CB, Bot SDM, de Boer MR, et al. Quality criteria were proposed for measurement properties of health status questionnaires. J Clin Epi. 2007;60:34-42.

