Incorporating Systematic Functional Assessment in the SSA Work Disability Program

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Goals of NIH/BU SSA Project

Develop standardized functional assessments: Work Disability Functional Assessment Batteries (WD-FAB) to:

- Improve standardization & completeness of information on claimants’ function
- Collect functional data early in the decision making process
- Improve program efficiency & consistency across the country.
- Enhance the feasibility of conducting efficient and periodic reassessments of function
(IRT) Item Response Theory Methodology

- Questions are chosen to cover the range of function in one dimension (e.g., mobility)
- Each question provides different information about the domain of functioning
- Scores are calibrated to an equal interval score
- IRT scales provide the platform for more efficient computer adaptive test (CAT) administration
Items selected from a large IRT calibrated ‘item bank’

A computerized algorithm selects items based on how a person responds to previous items

Provides for efficient measurement without loss of precision

Desired level of precision can be obtained using the minimal possible number of questions
Range of Content Coverage in FAB

ICF Activity Domains

- Interpersonal Interactions and Relationship
- Mobility
- Communication
- Learning and Applying Knowledge
- Self Care
- General Tasks and Demands

CAT Content Domains

- Behavioral / Emotional Function
- Physical Function
- Communication & Applied Cognitive Function
- Daily Activity Function
Sample Functional Items

Applied Cognitive Function:
- “How much difficulty do you currently have learning new tasks or instructions?”
  - Unable, A lot, A little, None

Communication Function:
- “How much difficulty do you currently have explaining how to do something involving several steps to another person?”
  - Unable, A lot, A little, None

Physical Function:
- “Are you able to remain on your feet for 6 hours with short breaks?”

Behavioral/Emotional Function:
- “I get in conflicts with others?”
CAT Development Process

- Extensive literature review
- Focus groups
  - with individuals similar to the SSA claimant population
- Content experts
- Cognitive Testing
  - Asks interviewees about question comprehension, decision processes and response processes.
- Calibration field studies:
  - Phase 1: Initial item pools administered to 1000 claimants & 1000 normative adults to position items on each FAB scale ...
  - Phase 2: Included a sample of 3000 claimants and a normative sample of 2000 adults
Why Build WD-FAB CATs?

- Functional profiles can add one critical element in the evidentiary record to complement other evidence.
- Can compare FAB profiles with SSA Listings & other available medical evidence.
- Can identify inconsistent and aberrant response patterns in claimants FAB assessments that trigger further scrutiny.
- IRT/CAT technology supports a broad range of questions about functioning, not practical with traditional paper questionnaires.
- FAB Item pools can be replenished & improved.
Claimant Function Profiles: Physical Function
Profile of a Claimant with UE Amputation

- Male
- 42 years old
- Previous work as a cook/server

![Graph showing the claimant's function profiles with labels for Changing & Maintaining Body Position, Whole Body Mobility, Upper Body Function, and Upper Extremity Fine Motor. The graph includes the claimant's score and normative score.](image)
Accomplishments to date...

CAT Development Time Line

- 2009: Question Development
- 2010: Calibration Studies
- 2011: Validation (2 studies complete; 2 underway)
- 2012: Item Bank Development
- 2013: Calibration Studies
- 2014: Predictive Validation
- 2015: Proposed Post-Development Field Office Testing
- 2016: User Testing

Phase 1: Physical Function & Behavioral Health
Phase 2: Learning & Applying knowledge and Daily Activity Function
Publications to Date:


Introducing FAB to SSA Field Offices
SSA Field Office Site Visits

Nov. 18-20, 2013
- Anacostia, Virginia
- Camp Springs, Maryland

Dec. 16-18, 2013
- Roxbury, MA
- Quincy, MA

CRs administered FAB-CATs to incoming claimants
**Camp Spring Site:**
- 3 CRs participated
- 8 claimants completed the Functional Assessment Battery

**Anacostia Site:**
- 4 CRs participated
- 9 claimants took the Functional Assessment Batteries
# Physical Functioning: Efficiency of CAT Administration

<table>
<thead>
<tr>
<th>PF Dimension</th>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
<th>Column 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changing and maintaining body position</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper body function</td>
<td></td>
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<tr>
<td>Upper extremity fine motor</td>
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<tr>
<td>Whole body mobility</td>
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</tbody>
</table>
### Physical Functioning: Efficiency of CAT Administration

<table>
<thead>
<tr>
<th>PF Dimension</th>
<th># of Items Used</th>
<th>Time to Completion of PF-FAB (Minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td></td>
</tr>
<tr>
<td>Changing and maintaining body position</td>
<td>5.2 (0.2)</td>
<td></td>
</tr>
<tr>
<td>Upper body function</td>
<td>5.2 (0.2)</td>
<td></td>
</tr>
<tr>
<td>Upper extremity fine motor</td>
<td>5.2 (1.2)</td>
<td></td>
</tr>
<tr>
<td>Whole body mobility</td>
<td>5.6 (1.0)</td>
<td></td>
</tr>
</tbody>
</table>

**Mean (SD):** 6.5 (6.7)
### Physical Functioning: Efficiency of CAT Administration

<table>
<thead>
<tr>
<th>PF Dimension</th>
<th># of Items Used</th>
<th>% of Respondents Requiring:</th>
<th>Time to Completion of PF-FAB (Minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Minimum Items (5)</td>
<td>Maximum Items (8)</td>
</tr>
<tr>
<td>Changing and maintaining body position</td>
<td>5.2 (0.2)</td>
<td>80.3</td>
<td>8.7</td>
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<tr>
<td>Upper body function</td>
<td>5.2 (0.2)</td>
<td>90.9</td>
<td>6.1</td>
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<tr>
<td>Upper extremity fine motor</td>
<td>5.2 (1.2)</td>
<td>66.4</td>
<td>24.3</td>
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<tr>
<td>Whole body mobility</td>
<td>5.6 (1.0)</td>
<td>70.1</td>
<td>14.0</td>
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## Behavioral Health Functioning: Efficiency of CAT Administration

<table>
<thead>
<tr>
<th>BH Dimension</th>
<th># of Items Used</th>
<th>% of Respondents Requiring:</th>
<th>Time to Completion of BH-FAB (Minutes)</th>
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<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Minimum Items (5)</td>
<td>Maximum Items (10)</td>
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<tr>
<td>Self-Efficacy</td>
<td>9.4 (0.9)</td>
<td>1.0</td>
<td>64.5</td>
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<td>Mood and Emotion</td>
<td>5.3 (1.07)</td>
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<td>Behavioral Control</td>
<td>6.7 (1.9)</td>
<td>41.0</td>
<td>21.1</td>
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<td>Social Interactions</td>
<td>5.8 (0.3)</td>
<td>17.9</td>
<td>82.0*</td>
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</tbody>
</table>

*Maximum was 6 items
Lessons Learned from Field Office Staff

- WD-FAB administration process overall went smoothly
- Field staff were very supportive of the project goals of collecting more systematic functional information
- Vignettes would help personalize the training
- Introduction screens and instructions needed to be shortened and simplified
- Examples for some items were asked for by CRs
Studies underway or Planned...

- Replenishing physical function & behavioral function scales with new items
- Predictive validity study with the 3000 claimants in current calibration study
- Examine racial/ethnic differential item functioning with normative sample
- Conduct test retest study of all WD-FABs
- Conduct a aberrant response pattern study
- Conduct a demonstration study of using WD-FAB in the SSA environment
Questions?