

SUPPLEMENTARY MATERIAL

Supplementary able S1. Item difficulty and fit indices at the two time points separately.

HAQ-DI Item	Time 1				Time 2			
	Item location	Item-total correlation			Item location	Item-total correlation		
		Obs.	Exp.	P		Obs.	Exp.	P
Activities	-1.04	0.79	0.75	0.1592	-0.99	0.85	0.82	0.3493
Arising	1.33	0.68	0.73	0.1449	1.26	0.85	0.81	0.1764
Dressing & Grooming	0.62	0.80	0.75	0.0958	0.87	0.88	0.81	0.0312
Eating	-0.75	0.76	0.75	0.6835	-0.68	0.84	0.82	0.4723
Grip	0.13	0.74	0.74	0.9362	0.06	0.74	0.81	0.0059
Hygiene	-0.56	0.73	0.75	0.4992	-0.50	0.83	0.82	0.8569
Reach	-1.04	0.80	0.76	0.1567	-0.96	0.84	0.83	0.4817
Walking	1.32	0.67	0.73	0.1272	0.94	0.75	0.81	0.0539

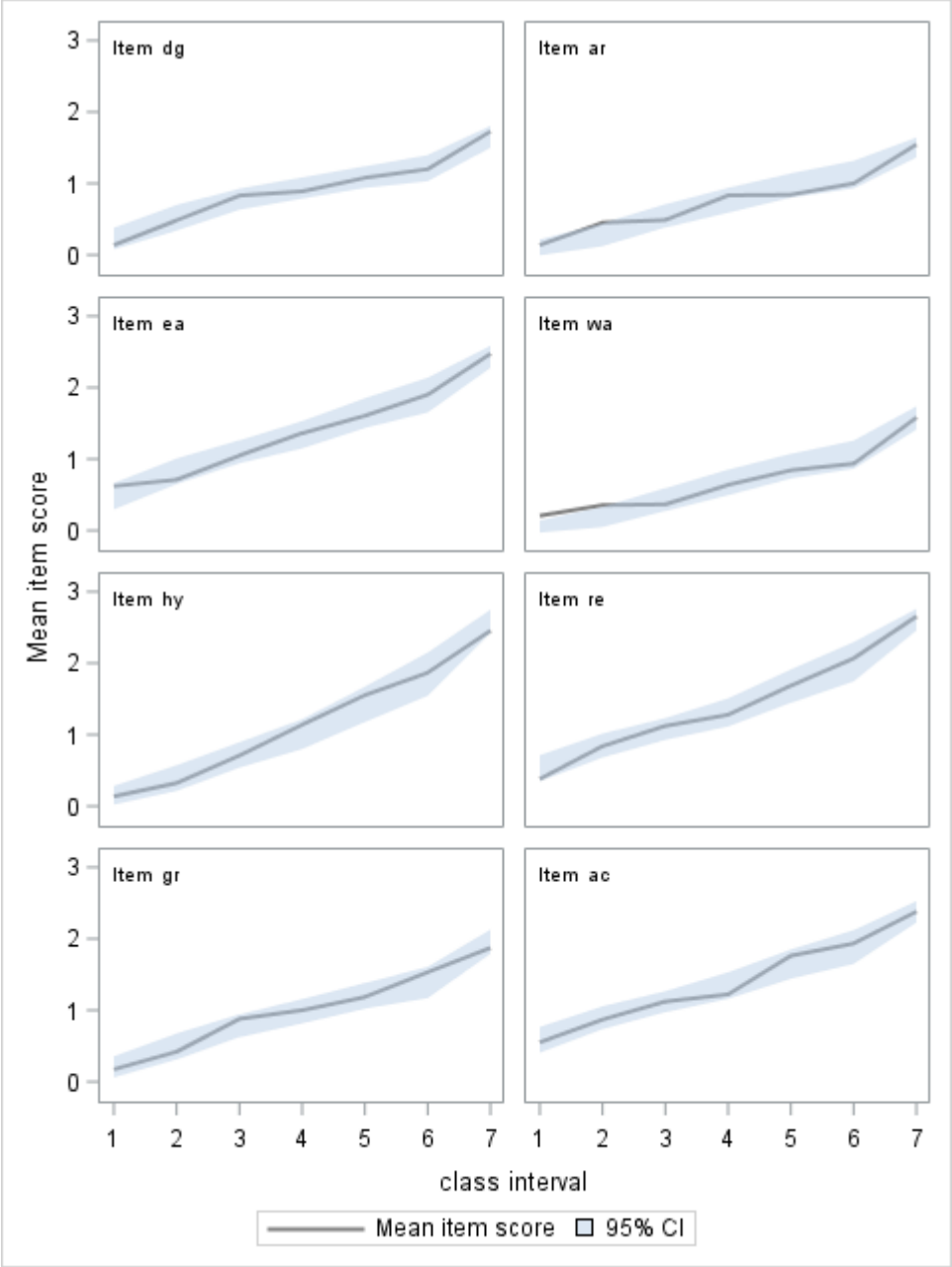
HAQ-DI: Health Assessment Questionnaire Disability Index; Obs: Observed item-total correlation; Exp: Expected item-total correlation; FDR: false discovery rate after application of the Benjamini and Hochberg procedure.

Supplementary table S2. Calibration of ordinal HAQ scores against linear Rasch transformed scores.

Table for translation of HAQ-DI raw score (ordinal) to Rasch measure (transformed).

Raw score	Rasch Measure		Raw score	Rasch Measure		Raw score	Rasch Measure		Raw score	Rasch Measure		Raw score	Rasch Measure
0.000	0.000		0.625	0.922		1.250	1.376		1.875	1.701		2.500	2.120
0.125	0.343		0.750	1.031		1.375	1.446		2.000	1.767		2.625	2.251
0.250	0.534		0.875	1.129		1.500	1.509		2.125	1.841		2.750	2.413
0.375	0.680		1.000	1.220		1.625	1.573		2.250	1.921		2.875	2.625
0.500	0.808		1.125	1.302		1.750	1.637		2.375	2.014		3.000	3.000

Supplementary figure S1. Item fit plots for baseline separately. Observed (blue line) and expected (shaded area) mean scores for the HAQ-DI items Activities (ac), Arising (ar), Dressing & Grooming (dg), Eating (ea), Grip (gr), Hygiene (hy), Reach(re), and Walking (wa).



Supplementary figure S2. Item fit plots for follow-up separately. Observed (blue line) and expected (shaded area) mean scores for the HAQ-DI items Activities (ac), Arising (ar), Dressing & Grooming (dg), Eating (ea), Grip (gr), Hygiene (hy), Reach(re), and Walking (wa).

