

Table A1: Results of the systematic review

Article	Measure (abbr.)	Construct	Method	Type of DIF	Disease group ¹ : N	Number of DIF-Items (%)	Magnitude	Impact on mean differences	Recommendation	Status ²
Atkinson et al., 2011	BPI	Pain	CFA	metric	HIV: 209 Cancer: 155 Total: 364	0 (0%)	no	n.n.	n.n.	vq
Bode et al., 2003	SF-36 PF	Physical functioning	IRT (RRS)	uniform	Cancer: 399 HIV: 170 Stroke: 328 Total: 897	5 of 10 (50%)	no	no	delete DIF-Items	vs
C. C. Chen & Bode 2010	MAM-36	Manual Ability	IRT (Rasch) multiple t-test	uniform	Neuro: 129 Musco: 206 Total: 335	14 of 36 (39%)	yes	no	no adjustments	vq
Chien et al., 2009	PFQ	Patients opinions about their doctor	IRT (RRS) d >0.5 logit	uniform	Internal: 109 Surgical: 97 Obst & Gyn.: 41 Pediatric: 23 Others: 129 Total: 399	9 of 23 (39%)	yes	no	delete DIF-Items	vq
Coster et al., 2004	Personal Care and Instrumental Activities Item Set	Daily activities	IRT (PCM) multiple t-tests	uniform	Neuro: 159 Musco: 136 Med comp: 182 Total: 477	8 of 62 (13%)	yes	no	no adjustments	ib
Dallmeijer et al., 2005	SF-36 PF	Physical functioning	IRT (PCM) Residual Anova	uniform non-uniform	Stroke: 198 MS: 151 ALS: 194 Total: 543	7 of 10 (70%)	yes	relevant	adjustment with stroke; no adjustment MS vs. ALS	vs
Dallmeijer et al., 2007	FIM	Physical functioning	IRT (RRS) multiple t-tests	uniform	Stroke: 295 MS: 150 TBI: 88 Total: 533	13 of 18 (72%)	yes	yes: small	adjustment	vs

Farin & Fleitz, 2009	MOSES-Physician	Mobility Self-care	IRT (PCM) multiple t-test	uniform	Musco: 549 Neuro: 258 Cardio: 212 Total: 1119	28 of 47 (60%)	no	no	not combining	dq
Given et al., 1992	CRA	Caregiver Reactions	CFA	metric; factor covariances	Alzheimer: 101 Cancer: 276 Total: 377	0 (0%)	n.n.	n.n.	n.n.	dq
Haley et al., 2004	AM-PAC	Daily activities	IRT (RRS) multiple t-tests	uniform	Neuro: 155 Musc: 138 Med comp: 184 Total: 476	7 of 41 (17%)	yes	no	rewording;not deleting	dq
Hart, Mioduski & Stratford, 2005	SCL-90-R: Items for depression and somatization	Depression Somatization	IRT (GRM) ordinal regression	uniform non-uniform	Ortho: 8834 Neuro: 328 Med: 186 Indust: 895 CPM: 655 Total: 10,898	1-2 of 17 [6-11%]	no	no	no adjustments	vs
Lindeboom et al., 2004	SIP	Physical functioning	IRT (extended Rasch)	uniform	Stroke: 653 Internal: 854	58 of 127 (46%)	yes	no	none	dq
Lundgren-Nilsson et al., 2006	FIM – motor scale	Physical functioning	IRT (PCM) Residual Anova	uniform non-uniform	Stroke: 157 SCI: 157 TBI: 157 Total: 471	including spinal: 11 of 13 (85%); without spinal: 6 of 13 (46%)	no	no	adjustment	vs
Moorer et al., 2001	RAND-36	health status	IRT (Mokken)	uniform	COPD: 148 MS:352 Rheuma: 223 Total: 723	4 of 36 (11%)	no	no	no adjustments	vq
Pickard et al., 2006	CES-D	Depression	IRT (RRS) multiple t-tests	uniform	Dep & Stroke: 32 Dep: 366 Total: 398	4 of 20 (20%)	yes	no	no adjustments	vq
Prieto, Delgado, Perea & Ladera, 2011	MMSE	Dementia	IRT (Rasch) multiple t-tests	uniform	PD: 119 Alzheimer: 110 Total: 321	6 of 30 (20%)	no	no	not comparing	vq

Rao et al., 2009	SSCI	Stigmatization	Mantel-Haenszel & Liu-Agresti cumulative common log odds ratio	uniform	Epilepsy: 165 Stroke: 190 Total: 355	4 of 24 (17%)	yes	no	no adjustments	dq
Reilly, Bowden, Bardenhagen & Cook, 2006	BDI	Depression	CFA	configural metric skalar strict	Epilepsy: 187 other Neuro: 150 Total: 337	0 (0%)	no	n.n.	n.n.	vq
Roelofs et al., 2007	TSK	Kinesiophobia	CFA	configural (factor loadings and residuals fixed)	Total: 2825 [allocation to comparison groups not fully clear]	0 (0%)	no	no	no adjustments	vq
Stultjens et al., 2012	WOMAC-PF	physical functioning	IRT (RRS) ordinal regression	uniform non-uniform	OA: 288 PD: 191 LSP: 169 Total: 648	4 of 17 (24%)	yes	no	no adjustments	vs
Taylor & McPherson 2007	SF-36 PF HAQ-DI	Physical functioning	IRT (RRS) multiple t-tests	uniform	RA: 142 PA: 134 Total: N=276	SF-36: 4 of 10 (40%) HAQDI: 3 of 8 (38%)	yes	no	SF-36 PF preferable	vs
van Groen et al., 2010	HAQ-DI	Physical functioning	IRT (gPCM) LM statistic	uniform	RA: 691 OA: 125 Gout: 102 Total: 818	4 of 8 (50%)	yes	yes: small not sign.	adjustments	vs
Waller et al., 2005	BDI-II	Depression	Logistic regression	uniform non-uniform	Breast Cancer: 267 Dep: 294 Total (woman): 561	15 of 21 (71%)	NCDIF	no	caution when interpreting breast cancer patients	vq
Wann-Hansson, et al. 2008	NHPD	illness-related distress	IRT (Rasch) Residual anova	uniform non-uniform?	PD: 258 PAD: 215 Total: 473	7 of 24 (29%)	no	no	no adjustments	vs

Weisscher, Glas, Vermeulen & De Haan, 2010	ALDS	daily activities	IRT (2-PL) LM statistic	uniform	Neuro: 497 Internal: 786 Total: 1283	18 of 77 (23%)	yes	yes; small sign.	adjustment	ib
Wirtz, Boecker, Forkmann & Neumann, 2011	CARE	Physicians empathy	IRT (RRS) multiple t-Tests	uniform	Cancer - Bronchial: 28 Colorectal: 18 Prostate: 54 Oesophagal: 35 Breast: 109 Skin: 68 Other:7 Total: 309	5 of 10 (50%)	yes	no	adjustment	vq
Wong, Nordstokka, Gregorisch & Perez-Stable, 2009	ChPSQ-9	Satisfaction	CFA	metric; factor covariances; residual variances	Breast Cancer: 249 Lung Cancer: 334 Total: 583	1 of 9 (11%)	no	no	no adjustments	vq
Yao & Wu, 2005	WHOQOL- BREF	Quality of Life	CFA	metric	Pulmonary: 235 Hypertension: 487 Peptic ulcer: 487 Sinusitis: 376 Liver disease: 500 Total: 2726	0 (0%)	no	n.n.	n.n.	vq
Yorke, Horton, & Jones, 2012	Dyspnoea-12	breathlessness severity	IRT (Rasch) Residual anova	uniform non-uniform	COPD: 123 Int lung disease: 129 CHF: 106 Total: 358	11 of 34 (32%)	no	no	non-invariant items deleted	dq
Yu, Yu & Ahn, 2007	SF-36 PF, MH	functioning; Mental health	MIMIC	uniform	Hypertension: 3156 Rheumatism:1654 Diabetes: 816 Res dis: 987 Dep: 864 Total: 8077	4 of 15 (27%)	yes	no	caution when comparing with hypertension; otherwise no adjustment	vs

Notes: n.n.: not necessary; ¹conditions abbreviations: Neuro: neurological disorders; musco: musculoskeletal disorders; obst.: obstetrics; gyn: gynaecological disorder; Med comp: medically complex; MS: Multiple sclerosis; ALS: amyotrophic lateral sclerosis; TBI: traumatic brain injury; Cardio: cardiovascular disorder; med: medical; indust: industrial; CPM: chronic pain management; Rheuma: rheumatism; dep: depression; PD: Parkinson's disease; OA: Osteoarthritis; LSP: Late-onset sequels of poliomyelitis; RA: rheumatoid arthritis; PAD: peripheral arterial disease; CHF: chronic heart failure; Res dis: respiratory disease; ²status of questionnaire: vq: validated questionnaire; vs: validated scale; dq: questionnaire under development; ib: item bank;