

# Pålidelighed og validitet af Work Rehabilitation Questionnaire (WORQ)

Journal of Occupational Rehabilitation (2024) 34:669–682  
<https://doi.org/10.1007/s10926-023-10157-9>



## Assessing Work Functioning in Patients with Persistent Low Back Pain: Exploring the Structural Validity of the Work Rehabilitation Questionnaire

Anders Hansen<sup>1,2</sup> · Ole Steen Mortensen<sup>3,4</sup> · Reuben Escorpizo<sup>5,6</sup> · Karen Søgaard<sup>7</sup> · Jens Sondergaard<sup>8</sup> · Berit Schiøtt-Christensen<sup>8</sup> · Henrik Hein Lauridsen<sup>7</sup>

Accepted: 5 November 2023 / Published online: 15 December 2023  
© The Author(s) 2023

### Abstract

**Purpose** Assessing work functioning in patients with persistent low back pain (LBP) is important for understanding their ability to engage in work-related activities. This study aims to evaluate the item characteristics, factor structure, and internal consistency of the Work Rehabilitation Questionnaire (WORQ) in patients with persistent LBP.

**Methods** Four hundred and twenty-five individuals with LBP completed the WORQ. Item characteristics, exploratory factor analysis (EFA), and consistency were performed to identify the underlying factors.

**Results** Missing responses were < 2% for each item. The analysis revealed three factors: psychological wellbeing, physical functioning, and cognitive ability. The factors demonstrated strong internal consistency, with Cronbach's alpha values ranging from 0.88 to 0.93 and McDonald's Omega from 0.92 to 0.96. Fifteen items did not fit into any identified factors, suggesting their potential value in screening functioning levels beyond the factors.

**Conclusions** The WORQ is a valid instrument for evaluating work limitations in individuals with persistent LBP. Further research should assess its responsiveness to changes from interventions that target workability. Advancing this knowledge has the potential to promote work rehabilitation and improve the quality of life for patients with persistent LBP.

**Keywords** Occupational rehabilitation · Low back pain · Psychometric · Exploratory factor analysis

Journal of Occupational Rehabilitation  
<https://doi.org/10.1007/s10926-024-10248-1>



## Reliability and Construct Validity of the Work Rehabilitation Questionnaire Domains in Patients with Persistent Low Back Pain

Anders Hansen<sup>1,2</sup> · Henrik Hein Lauridsen<sup>3</sup> · Reuben Escorpizo<sup>4</sup> · Karen Søgaard<sup>3</sup> · Jens Sondergaard<sup>5</sup> · Berit Schiøtt-Christensen<sup>5</sup> · Ole Steen Mortensen<sup>6,7</sup>

Accepted: 11 October 2024  
© The Author(s) 2024

### Abstract

**Purpose** The Work Rehabilitation Questionnaire (WORQ) assesses patient functioning, including psychological, physical, and cognitive limitations. This study evaluates the WORQ domains in individuals with persistent low back pain (LBP), focusing on reliability and construct validity.

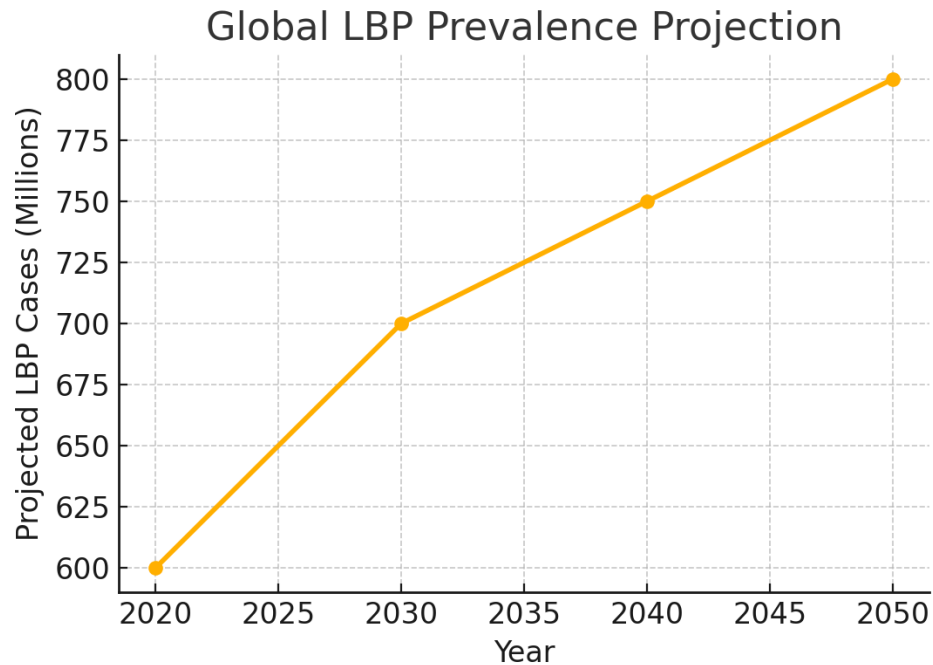
**Methods** Individuals aged 18–65 with LBP completed WORQ and the workability index single item. A subgroup undertook sit-to-stand and 6-min walking tests and re-evaluated WORQ after 14 days. Reliability was assessed through internal consistency (McDonald's omega and Cronbach's alpha), test-retest reliability, and smallest detectable change. Construct validity was analyzed via Spearman's rank correlation and known group validity, with physical functioning also examined against sit-to-stand and 6-min walk test results for sensitivity/specificity. Floor and ceiling effects were assessed through classical and scale width methods.

**Results** Of 425 participants, 149 completed physical tests, and 102 re-assessed WORQ. McDonald's omega and Cronbach's alpha indicated high internal consistency (0.92–0.96) with strong test-retest reliability (intraclass-correlation coefficients: 0.74–0.82). The smallest detectable change ranged from 4.62 to 7.82. Predictions from 7 out of 8 hypotheses were confirmed. Notable differences in domain scores were observed based on disability level and sick leave status, with varied diagnostic performance in physical functioning items. Potential floor effects were noted using the scale width method.

**Conclusions** The WORQ demonstrated good reliability and satisfactory validity in assessing work-related functioning in individuals with persistent LBP. These findings support its use as a comprehensive tool for evaluating psychological, physical, and cognitive limitations. However, varied diagnostic performance in physical functioning items and potential floor effects suggest cautious interpretation in diverse clinical settings.

**Keywords** Clinimetric · Work functioning · Physical functioning · Psychological well-being · Cognitive ability

# Hvorfor patienter med lændesmerter





**WORK REHABILITATION QUESTIONNAIRE**  
*A measurement instrument focused on work functioning and employee health.*

Within the idea of **enhancing** an individual's ability to work, there lies a relationship with the **overall health of society:**

Article 23 of the U.N.'s Universal Declaration of Human Rights states all people have the right to work. The WHO promotes healthier lives for people around the world. The ILO ensures all people have decent work.

The WORQ is available in many languages including:



English, French, German, Russian, Portuguese, Dutch, Danish, Japanese, Mandarin Chinese

**Work functioning** should be viewed from a **biopsychosocial perspective** (ICF) to gain a comprehensive view of the needs of the worker, nature of tasks, and the environment of the workplace. The **Work Rehabilitation Questionnaire (WORQ)** was developed, using the ICF, to capture **work functioning** and provide informative strategies on work (re)engagement, return-to-work, and sustainable employment. **WORQ** is intended to be a generic measurement instrument and can be self-reported, or interviewer administered.

WORQ is free to use and can be downloaded at

[www.myworq.org](http://www.myworq.org)



*WORQ has been found to be valid and reliable in various community, outpatient, and inpatient settings.<sup>1,2,3</sup> Ongoing studies are using WORQ in various work and employment settings to predict employment status and work performance.*

**Scoring**

The WORQ score % (from 0 – 100%) provides a global description of the worker's functioning. Studies are currently investigating stratification of work functioning disability. Proposed categories for work disability classification:

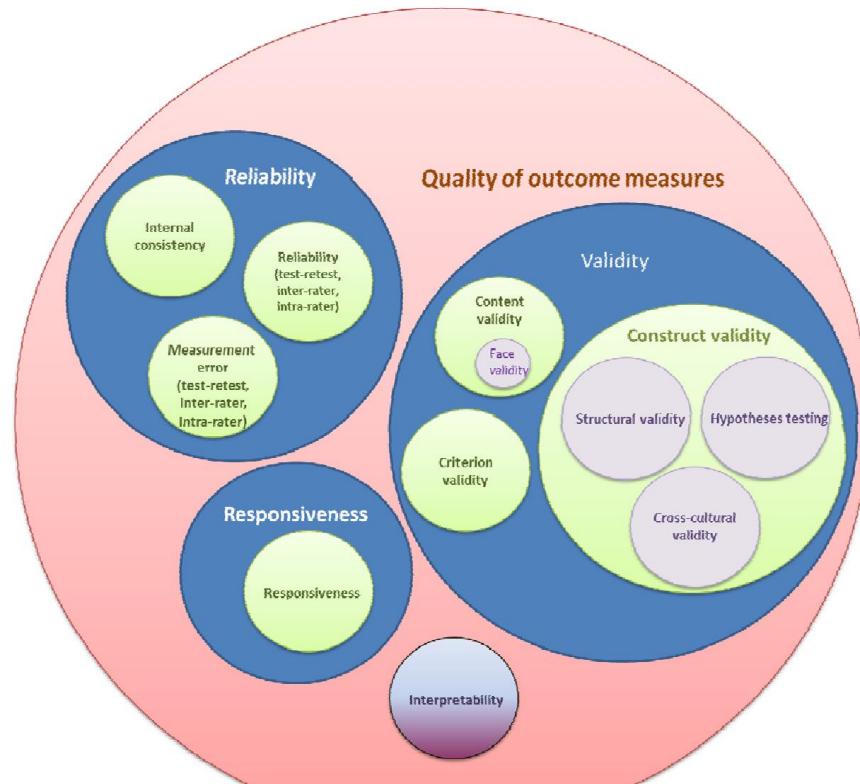
WORQ score	Work disability	Services needed
0-9%	None	No intervention needed; may include health prevention services.
10-29%	Mild	Primarily single discipline; multidisciplinary, if needed
30-59%	Moderate	Primarily multidisciplinary
60-89%	Severe	Primarily multidisciplinary and complex teams*
91%-100%	Complete	Primarily multidisciplinary and complex teams; disability evaluation for pension, if needed

\*Complex teams may include a broad set of personnel incl. the primary healthcare providers and referral providers, employer, union, family of the worker, insurance, case managers, patient / consumer organizations, and labor organization.

**Contact Information**  
**Prof. Reuben Escorpizo**, [reuben.escorpizo@med.uvm.edu](mailto:reuben.escorpizo@med.uvm.edu)  
 University of Vermont USA  
**Dr. Monika Finger**, [monika.finger@paraplegie.ch](mailto:monika.finger@paraplegie.ch)  
 Swiss Paraplegic Research, Switzerland

<sup>1</sup> Husmann A, Escorpizo R, Finger ME. Examining Work-Related Functioning in a Physical Therapy Outpatient Clinic: Validity and Reliability of the Work Rehabilitation Questionnaire (WORQ) *J Occup Rehabil.* 2019  
<sup>2</sup> Finger ME, Wicki-Roten V, Leger B, Escorpizo R. Cross-Cultural Adaptation of the Work Rehabilitation Questionnaire (WORQ) to French: A Valid and Reliable Instrument to Assess Work Functioning. *J Occup Rehabil.* 2019;29(2):350-360.  
<sup>3</sup> Finger ME, et al. Work Rehabilitation Questionnaire (WORQ): Development and preliminary psychometric evidence of an ICF-based questionnaire for vocational rehabilitation. *J Occup Rehabil.* 2014 Sep;24(3):498-510.

# COSMIN



# Rygcenter Syddanmark

Smertes		Risikofaktorer		Konsekvenser	
Debut	<p>år, mdr, dage siden</p> <p>Smertene blev udløst <b>langsomt</b> forårsaget af <b>foroverbøjning</b></p> <p>Udvikling over dagen: <b>Værst morgen og aften</b></p> <p>Smertene er <b>uforandret</b> over de seneste 2 uger</p>	STarTBack	Moderat risiko	ODI	
Typiske rygsmertes		EQ5D		Sygemelding (dage sidste 3 mdr)	0 dage
Typiske bensmertes		DK	0,614	Psyk./soc.	
Udvikling af smertes		UK	0,553	<b>Generelt</b>	
Tegning		Sager		Højde	171 cm
		Arbejde	Arbejdssit. Fleksjob	Vægt	71 kg
			Udd.niveau Mellemlang uddannelse	BMI	24,28 Normalvægtig
			Sygemelding	Gravid	Nej
			Skånehensyn	Tidligere ryg-operation	Ja
			Pension	Analgetika	Ja
		Helbred		Tobak	Ja - jeg ryger 1-4 cigaretter om dagen
		Smerte-karakteristika		Alkohol	8-14
				Fritid/motion	Jeg går en tur, kører lidt på cykel eller er i anden legemlig aktivitet mindst 4 timer om ugen (lettere fritidshobby, bordtennis, bowling og lign)
				Forventninger	Jeg forventer at der bliver lagt en god plan for hvordan jeg kommer videre i mit rygforløb.
				Kommentarer	Jeg har prøvet al konservativ behandling og jeg er ikke interesseret i en operation.

**Demographic characteristics and differences between participants and non-participants**

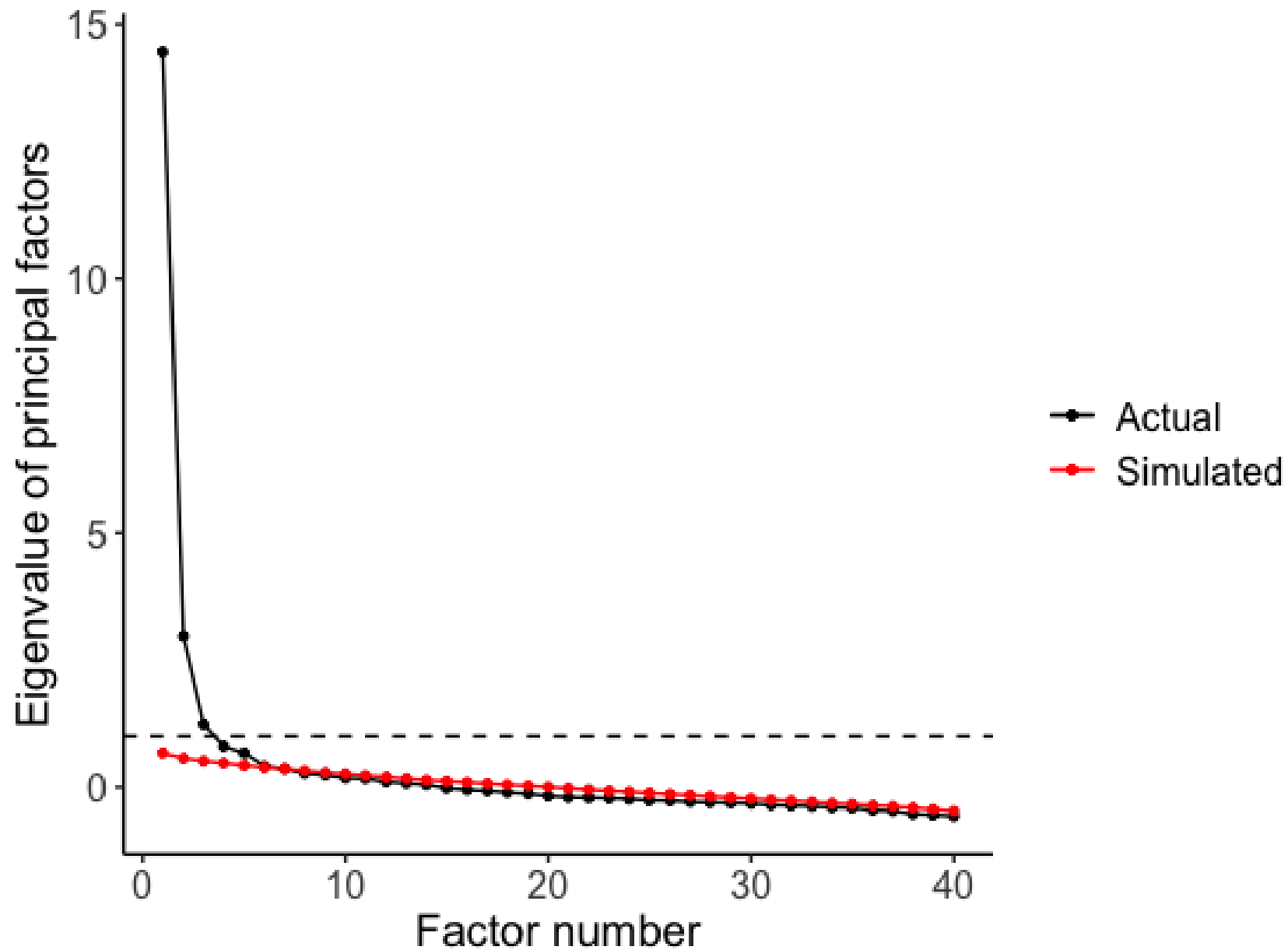
<b>Characteristic</b>	<b>Participants, N = 425<sup>1</sup></b>	<b>Non-participants, N = 107<sup>1</sup></b>	<b>Difference<sup>2</sup></b>	<b>95% CI<sup>2,3</sup></b>	<b>p-value<sup>2</sup></b>
Age	53 (43, 59)	50 (39, 58)	2.4	-0.37, 5.2	0.088
Sex			0.22	0.00, 0.44	
Female	269 (63%)	53 (52%)			
Male	156 (37%)	48 (48%)			
BMI	27.6 (24.3, 31.7)	27.4 (24.1, 31.6)	0.40	-0.86, 1.7	0.5
LBP intensity	5 (4, 7)	5 (3, 7)	0.19	-0.34, 0.72	0.5
Leg pain intensity	4 (1, 6)	3 (1, 5)	0.39	-0.22, 0.99	0.2
ODI	30 (20, 40)	28 (18, 38)	1.2	-2.2, 4.6	0.5
Insurance claim filed	44 (10%)	10 (9.9%)	0.50%	-6.5%, 7.5%	>0.9
EuroQol VAS	55 (39, 74)	59 (40, 70)	0.22	-4.2, 4.6	>0.9

<sup>1</sup> Median (IQR); n (%)

<sup>2</sup> Welch Two Sample t-test; Standardized Mean Difference; Two sample test for equality of proportions

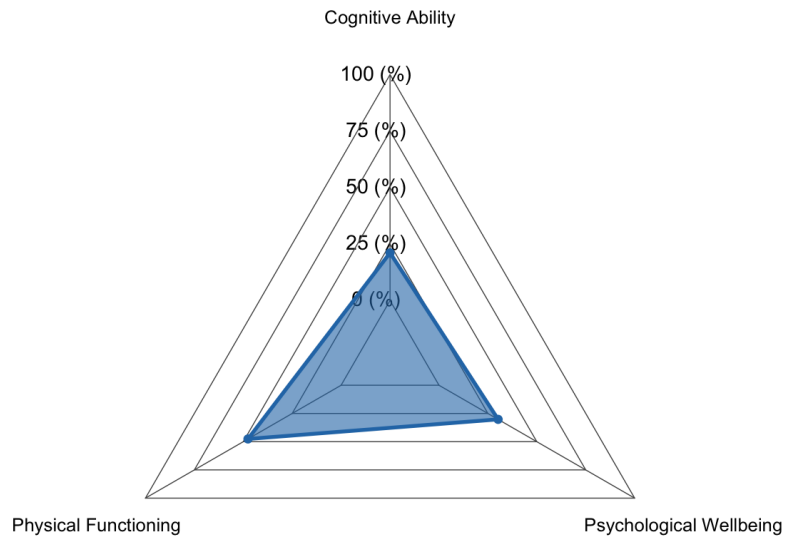
<sup>3</sup> CI = Confidence Interval

# Screeplot

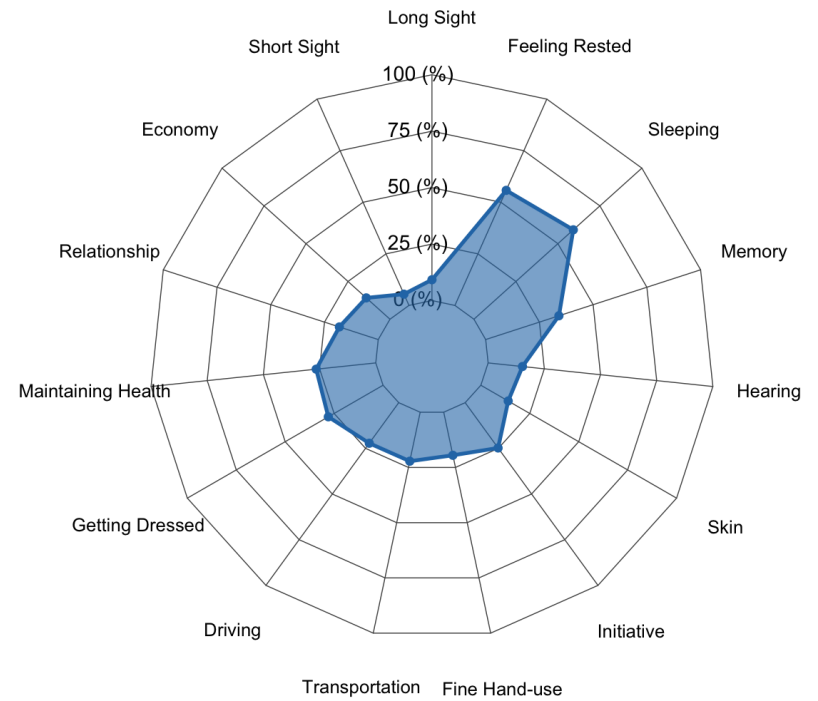


# Group baseline scores

## Functioning Scales



## Single Items





# Indholds-validitet

Items or tests	WORQ scales	Correlation <sup>1</sup>		Correctly predicted	
		Expected	Observed	Yes	No
WAI <sub>single item</sub>	Psychological wellbeing	<-0.3	-0.41	√	
EQ5D <sub>item5</sub> (anxiety/depression)	Psychological wellbeing	>0.5	0.53	√	
WAI <sub>single item</sub>	Physical functioning	<-0.5	-0.66	√	
STS <sup>2</sup>	Physical functioning	<-0.5	-0.64	√	
6MWT <sup>3</sup>	Physical functioning	<-0.5	-0.52	√	
WAI <sub>single item</sub>	Cognitive ability	<-0.3	-0.41	√	
EQ5D <sub>item5</sub> (anxiety/depression)	Cognitive ability	>0.3	0.45	√	
ODI <sub>item7</sub> (sleep function)	Cognitive ability	>0.3	0.26		√

# Reliabilitet

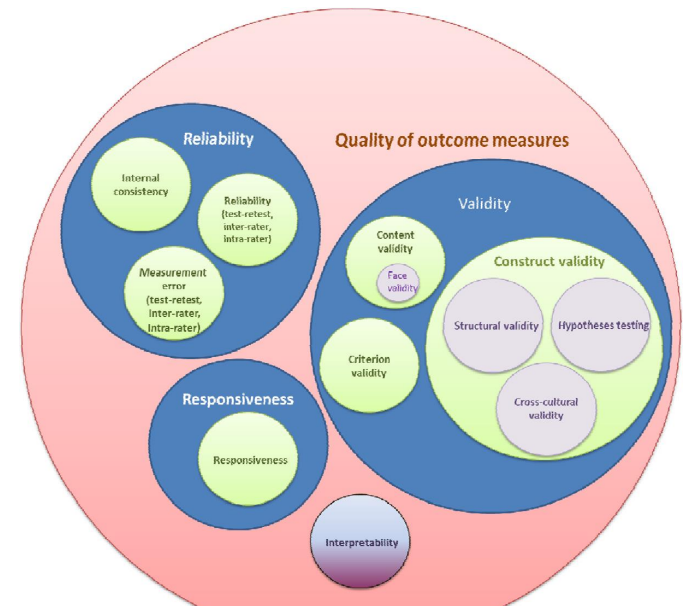
## Intern konsistens og test-retest

### Results Summary

Factor	Intraclass Correlation	95% CI_lower	Upper	Cronbach's alpha
Psychological Wellbeing	0.75	0.65	0.82	0.88
Physical Functioning	0.82	0.75	0.88	0.92
Cognitive Ability	0.74	0.60	0.80	0.93

## Mindste målbare ændring

Domain	SEM	SDC	Lower_Bound	Upper_Bound
Physical Functioning	1.39	7.55	4.83	10.27
Psychological Wellbeing	0.85	4.62	2.95	6.29
Cognitive Ability	1.44	7.82	5.00	10.64



# Tak for opmærksomheden

[Anders.Hansen@rsyd.dk](mailto:Anders.Hansen@rsyd.dk)

## **Samarbejdspartnere:**

Ole Steen Mortensen,  
Reuben Escorpizo,  
Karen Søgaard,  
Jens Søndergaard,  
Berit Schiøttz-Christensen  
Henrik Hein Lauridsen