

A comparison of the reliability of three preference-based quality of life instruments



KM van Leeuwen, APD Jansen, JE Bosmans,
MW van Tulder, HE van der Horst, RW Ostelo

ILPN 2012 September 7th

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Cost-utility of integrated care in older adults

2-year prospective trial

Quality of life vs costs

EQ-5D --> QALY's

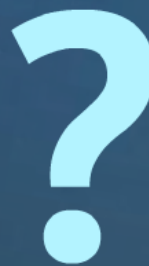


HEALTH

Alternatives

ICECAP-O

ASCOT



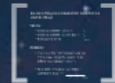
Acceptable
Feasible
Responsive

Test-retest reliability

Methods

ICECAP-O, ASCOT & EQ-5D included in 3rd follow-up

Measurement repeated within 7-14 days



Results



Test-retest reliability of utility scores

Test-retest reliability of individual items



Study population

Dutch community-dwelling frail older adults
190 first measurements, 147 retests

- Mean age: 82
- 69% female
- 71% living alone
- 49% 'good QoL' / 38% 'fair QoL'

Not every change on a measurement instrument is a real/true change

Sources:

- Variance between persons σ^2_p
- Variance between observations σ^2_o
- Residual variance $\sigma^2_{\text{residual}}$

Reliability:

- The proportion of the total variance in the measurements, due to 'true' differences between persons

- Parameter: Intraclass correlation coefficient (ICC) -->
$$\frac{\sigma^2_o}{\sigma^2_p + \sigma^2_o + \sigma^2_{\text{residual}}}$$

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The 3D Galaxy Zoo

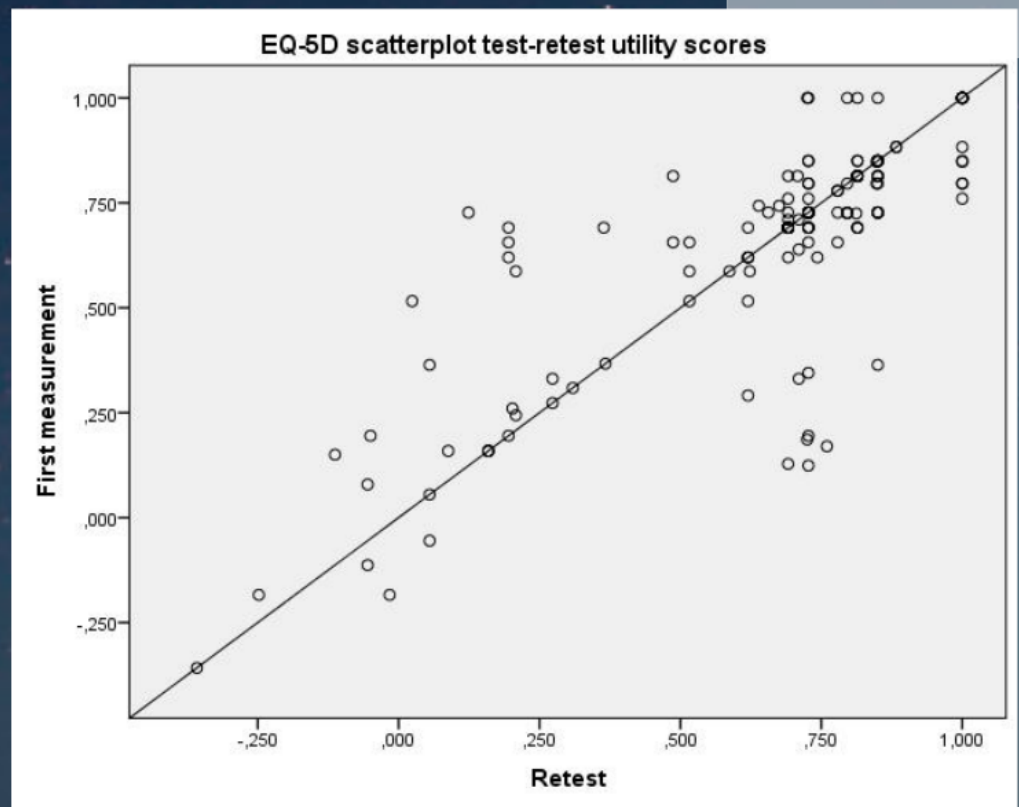
Galaxy Type	Count	Mean \log_{10} Scale	Standard Deviation
QSO	86	0.79	0.13
KESAP-0	118	0.79	0.10
ARSOT	112	0.71	0.10

Each panel includes a scatter plot of $\log_{10}(\text{Scale})$ vs. $\log_{10}(\text{Size})$.

Test-retest reliability of individual items

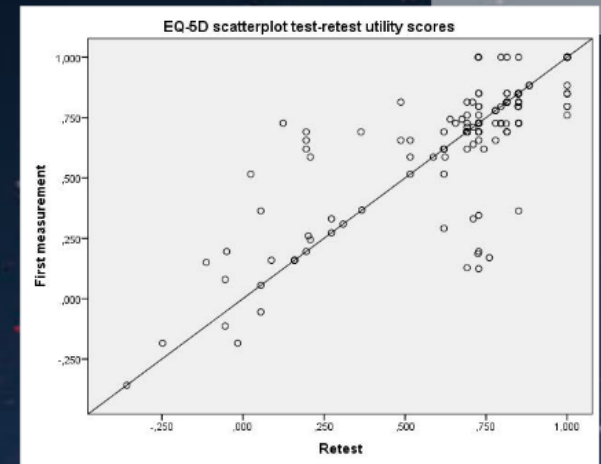
	Investment W. index (1970-1990)	
Market	151	51.5%
Self-care	147	48.1%
Mental education	147	48.0%
Self-education	147	47.5%
Non-Religious care	147	46.1%
Investment Index on a 1000000	145	45.0%
Investment in Education and Research	147	46.0%
Health Living and Education and Self-care	145	44.5%
Education and Research and Education	146	45.5%
Control and Education	146	44.5%
Control over Self-care	147	46.0%
Personal Education and Education	147	46.5%
Personal Education	146	45.5%
Personal Education	145	44.5%
Official participation and education	147	46.0%
Education and Education	144	45.0%
Education and Education	146	45.5%
Education	145	44.5%

ICC: 0.79
SEM: 0.13
N=147; SD=0.24



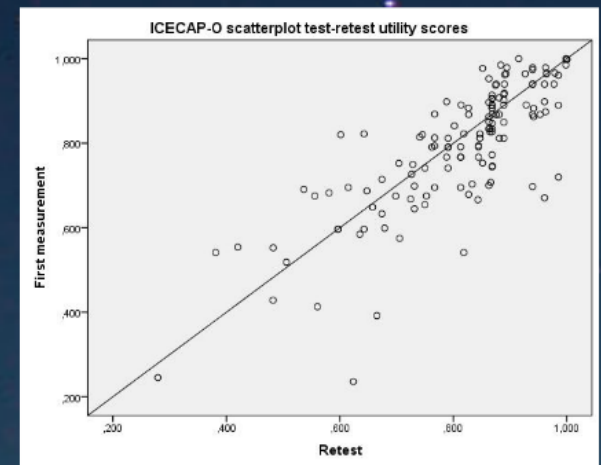
EQ-5D

ICC: 0.79
SEM: 0.13
N=147; SD=0.24



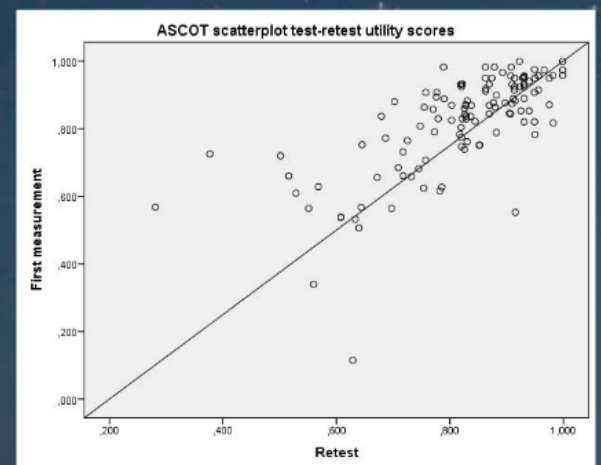
ICECAP-O

ICC: 0.79
SEM: 0.06
N=136; SD=0.15



ASCOT

ICC: 0.71
SEM: 0.08
N=122; SD=0.15



	N	Test-retest reliability (ICC)
Mobility	147	0.72
Self-care	147	0.87
Usual activities	147	0.64
Pain/discomfort	147	0.71
Anxiety/depression	147	0.51
Attachment (love and friendship)	141	0.59
Security (thinking about the future without concern)	147	0.60
Role (doing things that make you feel valued)	142	0.48
Enjoyment (enjoyment and pleasure)	146	0.54
Control (independence)	146	0.69
Control over daily life	147	0.66
Personal cleanliness and comfort	147	0.68
Food and drink	146	0.52
Personal safety	147	0.44
Social participation and involvement	147	0.66
Occupation	144	0.60
Accommodation cleanliness and comfort	146	0.67
Dignity 1 (not included in index)	126	0.35
Dignity 2	125	0.44

EQ-5D

ICECAP-0

ASCOT

Implications

Revision of some items

Smallest detectable change --> responsiveness

Sample size

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