Erasmus School of Health Policy & Management

Validation of the SPF-Q, an instrument to assess the quality of production functions to achieve well-being, among multimorbid patients

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Background

- Ageing populations and enormous increases in multimorbid patients

- Well-being of multimorbid patients is an important policy goal

- Chronic illnesses, functional limitations, and disabilities do not affect patients' well-being in the same manner

- People's resources influence well-being in times of poor as well as good health

- We need a full characterisation of people's ability to achieve well-being to be able to protect it

Social production function (SPF) theory
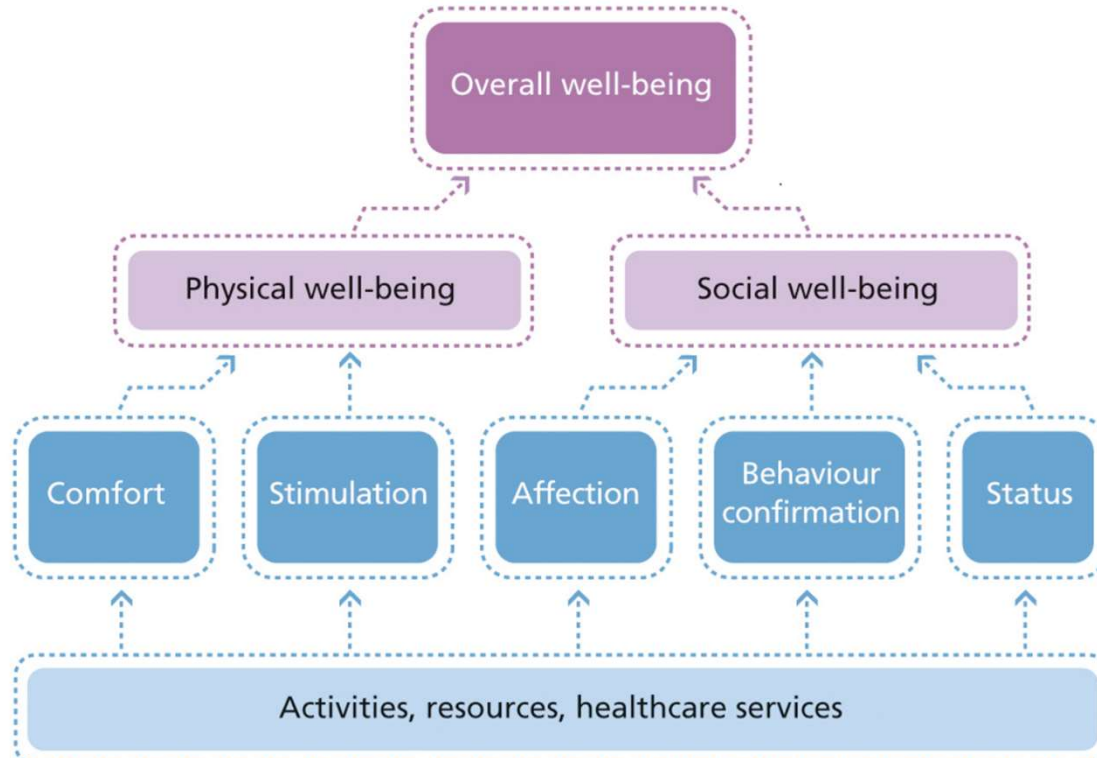
Adapted from Lindenberg, S. (1996). Continuities in the theory of social production functions. In Ganzeboom, H. and Lindenberg, S. (Eds.), Verklarende Sociologie: Opstellen voor Reinhard Wippler, Amsterdam: Thesis, pp. 169–184.

Substantive versus production needs

- Not only important to understand **what** people produce—social and physical well-being—but also **how** they produce it (i.e. the quality of their production functions)

- Production needs: Control, avoidance of a loss frame, and efficiency

Study aim

- Whereas much research has examined the fulfilment of substantive needs, far less research has investigated the quality of production functions (being in control, avoiding a loss frame, and efficiency) to achieve well-being.

- Aim: This study involved the development and validation of the Social Production Function-Quality of production functions (SPF-Q) instrument to assess the quality of production functions via the fulfilment of production needs to achieve well-being.

Methods

- 216 multimorbid patients from seven health care practices in the region of Tilburg, the Netherlands (respons 55%)
- Patients were enrolled in at least two chronic care programmes
- Based on qualitative research we generated a detailed listing of categories and themes and developed the 12-item SPF-Q via an iterative process

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(2020) Health and Quality of Life Outcomes, 18 (1), art. no. 321.
https://hqlo.biomedcentral.com/articles/10.1186/s12955-020-01573-z

Analyses

- Descriptive statistics

- Confirmatory factor analyses (LISREL) and model fit

- Discriminant and construct validity

Descriptive statistics study sample

Table 1 Characteristics of multimorbid patients (n = 216)

	Mean (standard deviation) range or percentage
Gender (female)	59.1%
Age (years)	77.42 (10.63)
Marital status (single/widowed)	43.2%
Education (low)	40.0%
Income (low)	37.1%
Well-being	2.65 (0.51) 1–4
Life satisfaction	6.90 (1.36) 1–10

SPF-Q Item characteristics

Table 2 Characteristics of the SPF-Q items (n = 216 respondents)

	Item	Valid n	Missing	Mean	SD	λ
Being in control						
1	Do you feel in control of your life?	213	3 (1%)	3.00	0.84	0.885
2	Are you able to manage your life how you like?	212	4 (2%)	2.52	0.76	0.697
3	Are you in charge of what happens in your life?	213	3 (1%)	2.80	0.81	0.611
Avoidance of a loss frame						
4	Are you pessimistic about your future?[a]	211	5 (2%)	3.23	0.78	0.856
5	Do you feel helpless?[a]	214	2 (1%)	3.30	0.79	0.871
6	Do you feel that your problems continue to get worse and worse?[a]	215	1 (1%)	3.15	0.87	0.846
7	Do you see opportunities to turn your life in a positive direction?	211	5 (2%)	2.42	0.85	0.801
Efficiency						
8	Do you find enjoyable activities easily?	212	4 (2%)	2.54	0.91	0.806
9	Do you do things that are both fun and challenging at the same time?	214	2 (1%)	2.46	0.83	0.843
10	Are your daily activities important to you for multiple reasons?	214	2 (1%)	2.93	0.80	0.774
11	Do your activities provide you with multiple benefits, such as fun, relaxation, and a social life?	212	4 (2%)	2.73	0.81	0.932
12	Are your preferred activities things you do with people who are important to you?	212	4 (2%)	2.74	0.84	0.697

[a] Reverse-coded items

Model fit of the SPF-Q

Table 3 Model fit of the SPF-Q

X^2 (p)	RMSEA	CFI	SRMR
107.928 (0.0)	0.0721	0.985	0.0670

Scale characteristics SPF-Q

Table 4 Scale characteristics and (inter-)correlations for the 12-item SPF-Q

	Cronbach's α	Scale mean (SD)	1	2	3
1. Being in control	0.723	2.77 (0.65)	[0.939]	0.706	0.680
2. Avoidance of a loss frame	0.839	3.03 (0.68)	0.577	[0.996]	0.630
3. Efficiency	0.861	2.68 (0.68)	0.574	0.561	[0.982]

All correlations p < 0.001 (two-tailed). Above the diagonal correlations for the latent scores are reported and below the diagonal correlations for the observed data. On the diagonal [between brackets] the associations between the observed and latent scores are reported

Construct validity

Table 5 Correlation of production needs with substantive needs, overall well-being, and life satisfaction

	Being in control	Avoiding a loss frame	Efficiency
Substantive needs			
Affection	0.378	0.298	0.391
Behavioural confirmation	0.528	0.432	0.449
Status	0.363	0.282	0.364
Comfort	0.552	0.634	0.469
Stimulation	0.679	0.608	0.727
Overall well-being	0.681	0.608	0.645
Life satisfaction	0.561	0.660	0.565

All correlations $p < 0.001$ (two-tailed)

Table 6 Regression of background characteristics, substantive needs, and productive needs on life satisfaction

	F-change	Beta	Beta
Substantive needs	31.541***		
Affection		− 0.045	− 0.076
Behavioural confirmation		0.083	0.016
Status		− 0.072	− 0.040
Comfort		0.532***	0.363***
Stimulation		0.217**	− 0.082
Production needs	15.001***		
Being in control			0.075
Avoiding a loss frame			0.288***
Efficiency			0.262**
Adjusted R square		0.433	0.533

** $p < 0.01$; *** $p < .001$ (two-tailed)

Conclusion

- SPF-Q valid and reliable instrument for the assessment of production needs among multimorbid patients

- Avoidance of a loss frame and efficiency contribute directly to overall well-being (life satisfaction) in addition to substantive needs

- Apparently, being in control contributes solely via the fulfilment of substantive needs, in contrast to the common belief that control (or autonomy) is a universal need

- Other production needs that may contribute to well-being such as consistency were not included

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