Using a multidimensional unfolding method to explore subjective constructions of HRQoL in a Chinese general population

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Background:

- Health-related quality of life (HRQoL) is a complex concept that consists of multiple domains, such as physical function, mental well-being and social/role function, with a diverse list of items that can be included in each domain.
- HRQoL is closely associated with people's subjective assessment of their own health, it is crucial to include health items that are relevant and important to targeting populations' subjective health evaluation.
- A limited number of researches investigating which health items of HRQoL are considered most important and relevant by lay people to be used in describing HRQoL.
- This study aimed to address this issue across a sample of a Chinese general population and to explore the lay conceptualisation of HRQoL.

Methods:

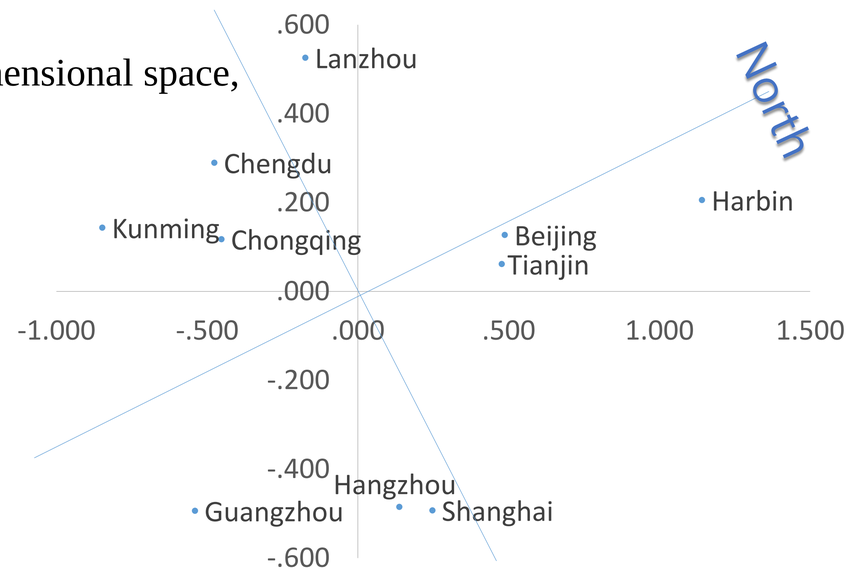
- 42 health items representing aspects of health considered as being important in a Chinese cultural setting (these included the 5 dimensions of EQ-5D): selected from a scoping review of Chinese generic HRQoL measures and a series of qualitative interviews conducted in China.
- 110 Chinese participants were asked to rank these statements of health items, from most important to least important (from 1 to 42).
- A type of multidimensional scaling (MDS) analytic method – unfolding – was conducted to analyse participants' preferences for health items.

An Example of MDS:

MDS can represent dissimilarities between objects by distances between points in a multidimensional space, allowing researchers to visually explore the structure of the dataset (See the example below).

	Shanghai	Tianjin	Chongqing	Harbin	Chengdu	Hangzhou	Kunming	Lanzhou	Guangzhou
Beijing	1065	104	1465	1055	1518	1126	2086	1185	1892
Shanghai		963	1445	1675	1660	169	1950	1720	1214
Tianjin			1447	1069	1521	1027	2067	1228	1822
Chongqing				2515	269	1314	621	768	980
Harbin					2576	1815	3136	2194	2795
Chengdu						1540	640	601	1239
Hangzhou							1798	1650	1045
Kunming								1232	1074
Lanzhou									1705

Table: Intercity distances (km) of 10 Chinese

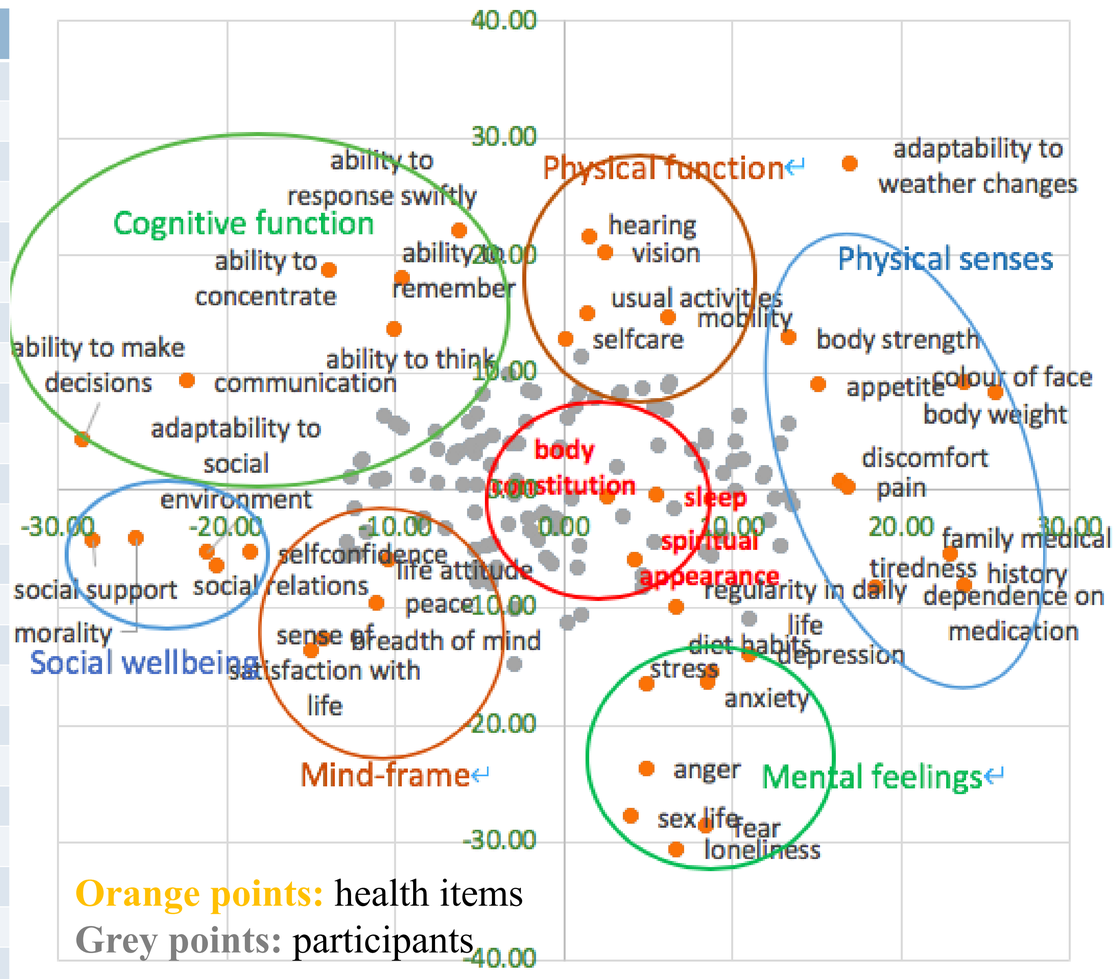


By analysing the intercity distances (intercity dissimilarities), a MDS program can generate coordinates of these cities in a 2-dimensional space and plot these cities as points on a configuration. The figure on the right almost presents the real locations of those cities on a map of China

Results:

The unfolding program PREFSCAL yielded a two-dimensional arrangement for the 110*42 matrix of ranked preference data. A distance between a participant and a health item represents the preference of the participant for the item.

Demographic and health status information for respondents (n=110)	
Gender	
male	57 (52%)
female	53 (48%)
Age	
<40	45 (41%)
40-60	36 (33%)
60+	33 (30%)
Mean age	46
Education background	
Under high school	20 (18%)
high school	14 (13%)
secondary	15 (14%)
college/university	60 (55%)
EQ-5D Self-rating health	
11111	42 (38%)
VAS score	
80-100	69 (63%)
60-80	35 (32%)
<60	5 (5%)
Mean score	77.5
Residence place	
city	63 (57%)
non-city	47 (43%)



Dimension I seems to discriminate between one's own body condition and external social wellbeing.
Dimension II appears to differentiate between functional indicators and symptoms/feelings.

- Participants had distinct preferences in choosing which health items were more important than others.
- Demographic characteristics such as age and education background largely affected participants' views of HRQoL.
- Three health items were considered to be most important across the whole sample: sleep quality, body constitution and spiritual appearance.

Health items that are included in the EQ-5D descriptive system, seemed to be recognised as most important aspects of health by elder participants (>60 years old) and by participants with relatively poor self-assessed health status.

Limitations:

This method assumes that the degree of preference of a certain stimulus given by a respondent can be represented by a Euclidean distance but the validity of the assumption may not be true in general.

Health items used in this study contained Chinese specific concepts that may be relevant to a Chinese community only. Future studies using the multidimensional unfolding approach are recommended to further explore the subjective conceptualisation of HRQoL in other populations or within a cross-cultural context.

Conclusion:

This study used a novel approach to explore the subjective understandings of HRQoL in a Chinese general population.

It indicates how lay people coming from a Chinese cultural setting may perceive health and which aspects of health are most important to them.

The study also shows that multidimensional unfolding is a feasible approach to assess preference structures in a general population.