

The Trend in Quality of Life of Chinese Population: Analysis based on Population Health Surveys from 2008 to 2020

Supplementary Information

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Table A1 Descriptive statistics of the health utility values, 2008-2020

	Health utility values		
	2008 (N=25,939)	2013 (N=22,138)	2020 (N=19,177)
Excepted utility method			
Mean ^a	0.948	0.942	0.939
Median	0.974	0.974	1
SD	0.102	0.103	0.168
SE	0.001	0.001	0.001
Range (Min, Max)	(-0.092, 0.974)	(-0.092, 0.974)	(-0.391, 1)
Kurtosis	40.862	35.598	25.896
Skewness	-5.631	-5.108	-4.417
Original			
Mean	0.967	0.958	0.939
Median	1	1	1
SD	0.122	0.125	0.168
SE	0.001	0.001	0.001
Range (Min, Max)	(-0.149, 1)	(-0.149, 1)	(-0.391, 1)
Kurtosis	31.211	26.014	25.896
Skewness	-4.922	-4.331	-4.417
Monte Carlo simulation method			
Mean ^a	0.948	0.942	0.939
Median	1	0.955	1
SD	0.111	0.111	0.168
SE	0.001	0.001	0.001
Range (Min, Max)	(-0.244, 1)	(-0.216, 1)	(-0.391, 1)
Kurtosis	32.611	29.008	25.896
Skewness	-4.803	-4.388	-4.417
Most-likely probability method			
Mean ^a	0.979	0.974	0.939
Median	1	1	1
SD	0.097	0.097	0.168
SE	0.001	0.001	0.001
Range (Min, Max)	(-0.158, 1)	(-0.158, 1)	(-0.391, 1)
Kurtosis	60.826	56.399	25.896
Skewness	-6.986	-6.605	-4.417
DSU method			
Mean ^b	0.959	0.946	0.902
Median	1	1	0.977
SD	0.157	0.164	0.178
SE	0.001	0.001	0.001
Range (Min, Max)	(-0.594, 1)	(-0.594, 1)	(-0.577, 0.989)
Kurtosis	39.137	31.482	24.735
Skewness	-5.526	-4.782	-4.025

Note: Significant differences were found in health utility values across the three waves of data by Kruskal-Wallis H tests ($p < 0.001$).

^aThe EQ-5D-3L responses were mapped to EQ-5D-5L responses by the UK response mapping algorithm [28] and then converted to utility values for the mapped responses using corresponding method [29].

^bThe responses of respondents in 2020 elicited from the EQ-5D-5L were indirectly mapped to the EQ-5D-3L utility values by the DSU method [31].

Abbreviation: DSU, Decision Support Unit; Max, maximum value; Min, minimum value; NICE, the National Institute for Health and Care Excellence; SD, standard deviation; SE, standard error.

Table A2 Multiple linear regression analyses on health utility values (Polled)

Independent variables	Health utility values ^a (N=67,254)		
	β	95% CI	p value [*]
Year (vs. 2008)			
2013	-0.009	(-0.012, -0.007)	<0.001
2020	-0.010	(-0.012, -0.009)	<0.001
Female (vs. Male)	-0.001	(-0.002, 0.001)	0.510
Han Chinese (vs. Others)	-0.009	(-0.015, -0.002)	0.009
Age group (vs. 18-29)			
30-39	-0.003	(-0.005, -0.001)	0.002
40-49	-0.004	(-0.005, -0.001)	0.001
50-59	-0.004	(-0.006, -0.001)	0.003
60-69	-0.016	(-0.020, -0.013)	<0.001
≥ 70	-0.079	(-0.084, -0.073)	<0.001
Commercial medical insurance (vs. Yes)	-0.004	(-0.007, -0.002)	0.001
Recipients of medical assistance (vs. No)	-0.066	(-0.082, -0.051)	<0.001
Marital status (vs. Married)			
Unmarried	-0.010	(-0.013, -0.007)	<0.001
Widowed	-0.020	(-0.026, -0.014)	<0.001
Divorced	0.000	(-0.006, 0.006)	0.894
Education (vs. College or above)			
Primary or below	-0.022	(-0.026, -0.018)	<0.001
Junior high school	-0.010	(-0.012, -0.007)	<0.001
Senior high school	-0.004	(-0.007, -0.002)	<0.001
Employment status (vs. Employed)			
Retired	-0.005	(-0.008, -0.002)	0.002
Student	-0.001	(-0.004, 0.002)	0.473
Unemployed	-0.020	(-0.023, -0.018)	<0.001
Hypertension (vs. No)	-0.018	(-0.021, -0.015)	<0.001
Diabetes (vs. No)	-0.021	(-0.026, -0.016)	<0.001
Other chronic diseases (vs. No)	-0.055	(-0.060, -0.051)	<0.001
Number of illnesses in 2 weeks (vs. 0)			
1	-0.018	(-0.024, -0.012)	<0.001
2 or more	-0.031	(-0.044, -0.019)	<0.001
Hospitalizations in 12 months (vs. No)	-0.056	(-0.064, -0.048)	<0.001
R²		0.170	

^{*} The p-value with bold formatting represents significant in multivariable linear regression model at 0.05 level.

^a The EQ-5D-3L responses were mapped to EQ-5D-5L responses by the UK response mapping algorithm [28] and then converted to utility values for the mapped responses using the expected-utility method [29].

Abbreviation: 95% CI, 95% confidence interval.