SUPPLEMENTAL METHODS

In the Korea National Health and Nutrition Examination Survey (KNHANES), health related quality of life is measured based EuroQoL (EQ)-5 dimension (5D) questionnaire and EQ-visual analog scale, which were developed by the EuroQoL. This Korean version of instrument developed and validated by Kim et al. [1] and Lee et al. [2]. This tool was provided on the KNHANES website (https://knhanes.kdca.go.kr/knhanes/main.do, accessed date July 4, 2022). The EQ-5D questionnaire consists of five targeted questions—mobility, self-care, usual activities, pain/discomfort, and anxiety/depression—to represent the current health status. There are three levels for each item (1=no problem, 2=moderate problem, 3=severe problem). These health conditions are converted into a single health index score that is calculated using the estimated weighted quality value for Koreans by the Korea Centers for Disease Control and Prevention. The index score ranges from −0.171 (severe problems were reported) to 1 (in complete health). EQ-5D index score was calculated as follows:

EQ-5D index score $=1-(0.050+0.096\times M2+0.418\times M3+0.046\times SC2+0.136\times SC3+0.051\times UA2+0.208\times UA3+0.037\times PD2+0.151\times PD3+0.043\times AD2+0.158\times AD3+0.050\times$ any dimension level 3).

The items of questionnaire were shown in Supplemental Table S1.

SUPPLEMENTAL REFERENCES

1. Kim SH, Ahn J, Ock M, Shin S, Park J, Luo N, et al. The EQ-5D-5L valuation study in Korea. Qual Life Res 2016;25: 1845-52.
2. Lee YK, Nam HS, Chuang LH, Kim KY, Yang HK, Kwon IS, et al. South Korean time trade-off values for EQ-5D health states: modeling with observed values for 101 health states. Value Health 2009;12:1187-93.

Supplemental Table S1. The Korean Version of the EQ-5D

EQ-5D	Level	Questionnaire
Mobility (M)	1	I have no problems in walking about
	2	I have some problems in walking about
	3	I am confined to bed
Self-care (SC)	1	I have no problems with self-care
	2	I have some problems washing or dressing myself
	3	I am unable to wash or dress myself
Usual activities (UA)	1	I have no problems with performing my usual activities
	2	I have some problems with performing my usual activities
	3	I am unable to perform my usual activities
Pain/discomfort (PD)	1	I have no pain or discomfort
	2	I have moderate pain or discomfort
	3	I have extreme pain or discomfort
Anxiety/depression (AD)	1	I am not anxious or depressed
	2	I am moderate anxious or depressed
	3	I am extremely anxious or depressed

EQ-5D, EuroQoL-5 dimension.