Psychometric Properties and Measurement Invariance of the Korean Future Time Perspective Scale

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The Future Time Perspective Scale is a self-reported questionnaire measuring how individuals perceive their remaining time in life. This study aimed to (a) validate a Korean version of the Future Time Perspective Scale (K-FTPS) and (b) examine its measurement invariance across age groups. A total of 492 participants aged 20-89 years completed the K-FTPS, Positive and Negative Affect Schedule, Psychological Well-Being Scale, Life Orientation Test, and Zimbardo Time Perspective Inventory. The psychometric evaluation entailed a series of analytical procedures, including reliability and validity assessments, exploratory factor analysis (EFA), confirmatory factor analyses (CFA), and measurement invariance testing. The K-FTPS demonstrated excellent internal consistency ($\alpha = .92$). The EFA and CFA indicated that the two-factor model was the best fit. The findings supported the scale's convergent and discriminant validity. Furthermore, the measurement invariance test supported configural, metric, partial scalar, and partial strict invariance across age groups. The K-FTPS was shown to be a reliable and valid measure in a Korean population and has potential applicability to broader populations. It may serve as a valuable tool in research on human development and well-being.

Keywords: future time perspective scale, psychometric properties, measurement invariance, life-span development, well-being

Introduction

For many decades, researchers have studied how individuals perceive their remaining lifetime (Carstensen, 2006; Han et al., 2017). Future time perspective (FTP) examines how individuals perceive their future, such as whether it is open-ended and holds opportunities or is limited (Carstensen et al., 1999; Carstensen & Mikels, 2005;

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Kang & Kim, 2021). The FTP extends socioemotional selectivity theory (SST), which explains social motivation across the lifespan (Carstensen, 1992, 1993; Carstensen et al., 1999; Carstensen et al., 2003). Research shows that as people age, their social priorities shift from seeking knowledge and career goals to focusing on emotional fulfillment (Fredrickson & Carstensen, 1990; Fung et al., 1999; Lang & Carstensen, 2002). This shift is driven by perceived time, not chronological age (Fredrickson & Carstensen, 1990), and has been incorporated into SST (Carstensen et al., 1999).

Several instruments measure time perspective, including, Lines Test (Cottle & Pleck, 1969), the Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999), the Attitudes Towards the Future Scale (Güler, 2004), and the Future Time Perspective Scale (FTPS; Carstensen & Lang, 1996). The FTPS is garnering attention in human development and is the most commonly used measure of time perspective in aging research (Fung & Isaacowitz, 2016; Moss & Wilson, 2018; Weiss et al., 2016).

FTP is linked to decision-making and risk-taking (Frank & Seaman, 2023; Fryt et al., 2024), health behaviors, work performance (Kooij et al., 2013), and career adaptability (Medellu & Fadhilah, 2022). It also influences memory-related beliefs in older adults (Barber & Strickland-Hughes, 2019). FTP is relevant from adolescence to late adulthood, and research suggests age-related differences and changes in FTP (Cate & John, 2007; Kang & Kim, 2021). Understanding FTP is crucial as it influences a wide range of age-related outcomes.

The FTPS is widely used and has been validated in other languages (e.g., Chinese, Indonesian, and Turkish) with good psychometric results (Fung et al., 2001; Medellu et al., 2021; Soylu & Ozekes, 2020). While it has been translated into Korean and used in research (Han & No, 2016; Han et al., 2017; Kang & Kim, 2021; Seo et al., 2018), it has not been comprehensively validated using a back translation approach with permission from the original author.

Some studies support a one-factor structure for FTP (Lang & Carstensen, 2002), while others suggest two (opportunities and limitations) (Kang & Kim, 2021; Kooij & Van De Voorde, 2011; Zacher & Frese, 2009) or three factors (opportunity, extension, and constraint) (Barber & Strickland-Hughes, 2019; Rohr et al., 2017). Further research is needed to verify its dimensionality.

Verifying that the factors can be applied for different samples is also critical. Measurement invariance refers that a given psychological construct is measured equivalently across groups, and its establishment constitutes a prerequisite for meaningful group comparison (Chen, 2008; Horn & McArdle, 1992). This indicates that the same underlying construct is measured across the relevant comparison groups. It is imperative to ensure the validity of group comparisons and the ability to interpret differences and similarities between groups in a meaningful manner. If the invariance assumption does not hold, comparisons across groups may not be meaningful (Chen, 2008; Horn & McArdle, 1992; Milfont & Fischer, 2010). The goal of ensuring measurement invariance of the K-FTPS is to confirm that the scale functions equivalently for all age cohorts, thereby ultimately validating a scale applicable to a broader population. However, findings concerning FTPS invariance have not been extensively documented (Allemand et al., 2021; Brothers et al., 2016; Rohr et al., 2017). Rohr et al. (2017) reported

the FTPS is invariant (factor loadings, intercepts, residuals) across age (young/middle-aged/old) and culture groups. Other studies explored measurement invariance of FTP measures across only middle-aged and older adults (Brothers et al., 2016) or used only 6 of the 10 original FTPS items (Allemand et al., 2021). Because future time perspective has been shown to change meaningfully across early, middle, and later stages of adulthood, as each period involves distinct psychological orientations and developmental tasks (Cate & John, 2007; Miguel et al., 2025), it is essential to ensure that the scale used to measure it functions equivalently across these age groups. Without establishing measurement invariance, observed differences may reflect measurement artifacts rather than true psychological variation.

This study had two objectives. The first was to fully validate the Korean version of the FTPS by assessing reliability, factor structure, and validity. The second was to explore measurement invariance of the K-FTPS across age groups. Given FTP's significance in aging, human development, and well-being, this research provides an important contribution to the field.

Methods

Participants

We recruited participants through an online survey and in-person between December 2022 and December 2023. The sample size was determined based on recommended 400 participants for psychological scale validation (Guadagnoli & Velicer, 1988) while ensuring balance across age groups. A total of 493 consenting participants completed self-report questionnaires. However, we excluded one participant diagnosed with major neurocognitive disorder, as defined by the DSM-5-TR criteria (American Psychiatric Association, 2022), leaving a total of 492 participants (young adults: $n = 187$, 38.0%; middle-aged adults: $n = 190$, 38.6%; older adults: $n = 115$, 23.4%). The mean age of the participants was 46.5 ± 16.1 years (aged 20-89 years), with 50% of the sample being female ($n = 246$). Supplementary Table 1 shows the general participant characteristics. The Institutional Review Board at Kyungpook National University approved the study (KNU-2022-0495).

Measures

Demographic Characteristics

Participants reported their gender, age, education, occupation, socioeconomic status, marital status, current subjective health perception, and any current mental disorders (e.g., dementia, stroke, depression disorder, anxiety disorder).

Korean Version of the Future Time Perspective Scale (K–FTPS)

FTPS is a self-report instrument assessing an individual's perception of future time (Carstensen & Lang, 1996). The questionnaire comprises 10 items, each of which is to be answered using a 7-point Likert scale.

Translation

We obtained permission from the original developers, Dr. Laura L. Carstensen and Dr. Frieder R. Lang, to use their questionnaire (August 2021). We then translated the FTPS using the forward-backward technique. Two doctoral-level clinical psychologists cognizant of the measurements translated the scale from English to Korean. Subsequently, a bilingual individual ignorant of the original English version back-translated the contents. These results were verified by the original authors (Carstensen & Lang, 1996) until consensus was reached. This process ensured clarity and comprehensibility and identified any translation modifications.

Positive and Negative Affect Schedule (PANAS)

The PANAS contains a 10-item Positive Affect (PA) scale and a 10-item Negative Affect (NA) scale (Watson et al., 1988). Internal consistency estimates have ranged from .86-.90 for the Positive Affect scale and from .84-.97 for the Negative Affect scale. This study used a Korean version of PANAS, which was translated and validated by Lee et al. (2003), who found an internal consistency value of .84. The overall scale demonstrated satisfactory internal consistency in this sample (Cronbach's alpha = .87), while the Positive Affect and Negative Affect subscales have Cronbach's alphas of .88 and .90, respectively.

Zimbardo Time Perspective Inventory (K–ZTPI–15)

The Zimbardo Time Perspective Inventory (ZTPI) measures time perspective (Zimbardo & Boyd, 1999). The full ZTPI scale com-

prising 56 items was shortened to measure time perspective (Košťál et al., 2016). The present study used the ZTPI-short version in Korean (K-ZTPI-15), which was validated by Lee (2019). The K-ZTPI-15 has three items for each of the five dimensions of time perspective. The overall scale demonstrated low internal consistency in this sample (Cronbach's alpha = .61), while the future subscale have a Cronbach's alpha of .67.

Life Orientation Test–Revised (LOT–R)

The LOT-R measures optimism and pessimism (Scheier et al., 1994). We used the LOT-R translated by Yeom (1998). The present study excluded four filler items and used items 1, 3, 4, 7, 9, and 10. The internal consistency value was .77 for the whole LOT-R (Yeom, 1998), and the overall scale demonstrated adequate internal consistency in this sample (Cronbach's alpha = .70).

Psychological Well–being Scale (PWBS)

Ryff's PWBS assesses psychological well-being (Ryff & Keyes, 1995). We used the Kim and Yoo (2010) scale, which excluded items with poor convergent and discriminant validity. This version consists of 25 items covering six dimensions of psychological well-being. The overall scale demonstrated good internal consistency in this sample (Cronbach's alpha = .84).

Statistical Analyses

We analyzed data using IBM SPSS Statistics version 25.0 and conducted the confirmatory factor analysis using IBM Amos software version 26.0. We conducted descriptive statistics and examined the internal consistency by Cronbach's alpha. Then we calculated the Pearson's correlation between the total and ten-item scores to determine the internal homogeneity of the K-FTPS. Convergent and divergent validity was tested using correlations with PANAS, K-ZTPI-15, LOT-R, and PWBS scores. A p-value < .05 indicated statistical significance.

The sample was randomly divided approximately in half, with exploratory factor analysis (EFA; $n = 248$) and confirmatory factor analysis (CFA; $n = 244$) conducted on each subset to independently explore and validate the factor structure. An EFA was first conducted using the maximum likelihood extraction method with varimax rotation to examine the underlying factor structure. The

number of factors was determined using the scree plot and the Kaiser criterion (eigenvalues > 1). Following the EFA, we verified the factor structure via CFA. Maximum likelihood estimation was used to estimate the model parameters. Fit criteria followed standard recommendations: Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) > .95 (excellent fit) and RMSEA < .08 (good fit) (Byrne, 2016; Hu & Bentler, 1999).

We tested the measurement model across age groups (young: 20-39, $M = 29.86$, $SD = 5.56$; middle-aged: 40-59, $M = 49.15$, $SD = 5.53$; older: 60 years and above, $M = 69.28$, $SD = 4.68$). If full invariance was not met, partial invariance was tested by relaxing constraints (Byrne et al., 1989). Given the large sample size, we evaluated invariance using changes in model fit indices. We used $\Delta CFI \leq .01$ as the primary threshold for determining whether differences between nested models were substantively meaningful (Cheung & Rensvold, 2002).

Results

Reliability

Cronbach's alpha of the K-FTPS was .92, indicating excellent internal consistency. The item-total correlations range from .53 to .89, demonstrating good homogeneity in measuring future perception (Table 1).

Exploratory and Confirmatory Factor Analysis of the K−FTPS

The Bartlett spherical test was significant, $\chi^2 = 1954.936$, $p < .001$, and the KMO was .911, indicating that the data were suitable for factor analysis (Kaiser, 1974). The scree plot and eigenvalue criteria supported the extraction of two factors. Exploratory factor analysis was conducted using maximum likelihood estimation with Varimax rotation. The analysis yielded a clear two-factor structure, explaining a total of 75.05% of the total variance (52.95% for opportunity and 22.10% for limitation). All factor loadings were above .50 (Table 1).

The present study employed a CFA to ascertain whether the two-factor model of the K-FTPS offered an enhanced alignment with the data in comparison to the one-factor model. The two-factor model, which includes opportunities (first seven items) and limitations (last three items) provided a better fit. We refined the model by allowing items to covary, following a stringent RMSEA cutoff of .08 (Byrne, 2016). As demonstrated in Figure 1, the allow-

Table 1. Internal Consistency and Exploratory Factor Loadings of K-FTPS

Item	Item-total correlation	K-FTPS opportunity	K-FTPS limitation
1. Many opportunities await me in the future.	.84	.849	
2. I hope to make plenty of fresh goals in the days ahead.	.83	.880	
3. My future is filled with endless possibilities.	.89	.895	
4. I am certain that I have more days left to live.	.85	.885	
5. My future seems to have no limit whatsoever.	.87	.872	
6. I may be able to do anything I wish in the time to come.	.86	.851	
7. I am spared with much time to make new plans in my life.	.82	.771	
8. I feel that I may not have much time left.	.53		.825
9. The possibilities in my future are surely restricted.	.65		.823
10. As I grow older, I start experiencing that I am bound to the course of time.	.54		.728
Cronbach's alpha	.92		

Exploratory factor analysis was conducted using maximum likelihood extraction with varimax rotation. Factor loadings ≥ .50 are shown.

Table 2. Goodness-of-fit indices for Confirmatory Factor Analysis Model of K-FTPS

Variable	χ^2	df	CFI	TLI	RMSEA (90% CI)	AIC
One factor model	268.664	35	.880	.845	.166 (.148-.185)	308.664
Two factor model	125.761	34	.953	.938	.105 (.086-.125)	167.761
Modified two factor model	74.312	31	.978	.968	.076 (.054-.098)	122.312

χ^2 = Chi-square (all χ^2 tests with $p < .001$); CFI = Comparative Fit Index; TLI = Tucker–Lewis Index; RMSEA = root mean square error of approximation; AIC = Akaike Information Criterion.

ance of covariances amongst the items resulted in the creation of a model with adequate fitting, $\chi^2 = 74.312$, $df = 31$, CFI = .978, TLI = .968, RMSEA = .076, AIC = 122.312 (Table 2). The correlation between the two dimensions was $r = -.45$, $p < .001$. Cronbach's alpha
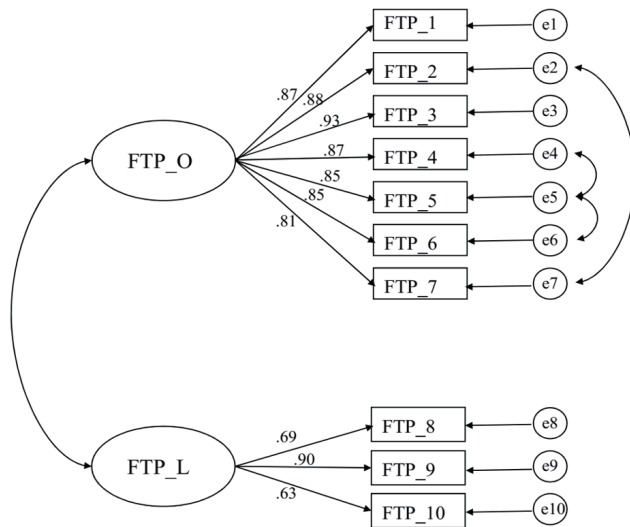

Figure 1. *Modified two-factor model of K-FTPS*
FTP_O = Future Time Perspective Opportunity; FTP_L = Future Time Perspective Limitations.

Table 3. *Correlation Coefficients between K-FTPS Score and Other Instruments*

	FTPS-opportunity	FTPS-limitation
PANAS-positive	.56***	-.16***
PANAS-negative	-.02***	.32***
LOT	.49***	-.40***
PWBS	.52***	-.46***
ZTPI-total	.25***	-.36***
ZTPI-future	.34***	-.16***

FTPS = Korean version of the Future Time Perspective Scale; PANAS = Positive and Negative Affect Schedule; LOT = Life Orientation Test-Revised; PWBS = Psychological Well-Being Scale; ZTPI = Zimbardo Time Perspective Inventory short version in Korean.
****p < .001.*

for the opportunity and limitation subscales was .96 and .78, respectively.

Convergent and Divergent Validity

The two-factor model was used for further analysis. Focus on opportunity was positively correlated with positive affect, optimism, and psychological well-being, $r_{PANAS-PA} = .56$, $r_{LOT} = .49$, $r_{PWBS} = .52$, all $p < .001$, but negatively correlated with negative affect, $r_{PANAS-NA} = -.02$, $p < .001$. It also correlated positively with time perspective and future orientation, $r_{ZTPI} = .25$, $r_{ZTPI-future} = .34$, all $p < .001$. Whereas focus on limitation was negatively correlated with positive affect, optimism, and psychological well-being, $r_{PANAS-PA} = -.16$, $r_{LOT} = -.40$, $r_{PWBS} = -.46$, all $p < .001$, but positively correlated with negative affect, $r_{PANAS-NA} = .32$, $p < .001$. It also correlated negatively with time perspective and future orientation, $r_{ZTPI} = -.36$, $r_{ZTPI-future} = -.16$, all $p < .001$ (Table 3).

Measurement Invariance

Measurement invariance tests assessed whether the K-FTPS factor structure was consistent across age groups. The sample was balanced among young (aged 20-39, $n = 187$), middle-aged (aged 40-59, $n = 190$), and older adults (aged 60-89, $n = 115$). We tested the configural invariance model (Model 1) to examine if the two-factor model was prevalent in all age groups. Fit indices showed Model 1 had a good fit, supporting that the two-factor model was invariant across age groups, $\chi^2 = 217.163$, $df = 93$, $p < .001$, CFI = .969, TLI = .954, RMSEA = .052. Then, we tested the metric invariance model (Model 2). Model 2 yielded a satisfactory model fit, as the ΔCFI was smaller than .01 compared with Model 1. This indicated metric invariance across age groups, $\chi^2 = 239.043$, $df = 109$, $p < .001$, ΔCFI = -.002.

Next, we tested the scalar invariance model (Model 3). Since the

Table 4. *Summary of the Goodness-of-fit Statistics for Measurement Invariance in Young, Middle-aged, and Older adults*

Model	χ^2	df	TLI	CFI	RMSEA	ΔCFI
Model 1	217.163	93	.954	.969	.052	-
Model 2	239.043	109	.959	.967	.049	-.002
Model 3-1	291.881	121	.952	.957	.054	-.01
Model 4-1	345.521	145	.953	.949	.053	-.008

χ^2 = Chi-square (all χ^2 tests with $p < .001$); Model 1 = configural invariance model; Model 2 = metric invariance model; Model 3-1 = partial scalar invariance model; Model 4-1 = partial strict invariance model; ΔCFI = change in CFI.

ΔCFI exceeded .01, we sequentially freed item intercept constraints for items 4, 3, 9, and 7 (Model 3-1), improving model fit, ΔCFI = -.01. ANOVA confirmed significant group differences for these items, $p < .01$, with post-hoc Scheffe's tests showing age-related response variations (Supplementary Table 2).

Finally, we tested the strict invariance model (Model 4). Model 4 was rejected because the ΔCFI exceeded .01. After relaxing the residual constraint for item 5 (Model 4-1), model fit improved, ΔCFI = -.008. Table 4 summarizes goodness-of-fit statistics across models.

Discussion

The primary goal of this study was to validate the Korean version of the FTPS. The findings show high internal consistency (Cronbach's alpha of .92), exceeding the accepted threshold of .70 (Bland & Altman, 1997), and strong item-total correlations (.53-.89), surpassing the standard criterion of .30 (Ferketich, 1991).

The present study examined the structure of the K-FTPS using both exploratory and confirmatory factor analysis. We found that the K-FTPS is best represented by two distinct factors: focus on opportunity and focus on limitation. This finding aligns with previous studies, which have shown that individuals perceive future time as either an opportunity or a limitation (Cate & John, 2007; Kang & Kim, 2021; Strough et al., 2016; Zhang et al., 2019). The opportunity factor is indicative of an individual's perception of future time as being open-ended and replete with potential opportunities (e.g., "Many opportunities await me in the future."). The limitation factor demonstrates that a person perceives future time as limited and closed in nature (e.g., "I feel that I may not have much time left."). Through empirical research, this pattern is seen over age and gender. Specifically, individuals between the ages of 40 and 60 prioritize future prospects over the constraints imposed by time, while those around 60 tend to place greater emphasis on the limitations of time rather than future opportunities. Also, women of all ages tend to focus more on future opportunities than men, while men tend to focus more on limited time (Strough et al., 2016).

We also evaluated the convergent and divergent validity of the K-FTPS. The opportunity factor was positively associated with positive affect, optimism, and psychological well-being, while negatively related to negative affect, indicating that opportunity aligns closely with constructs reflecting emotional positivity and well-being. Conversely, limitation exhibited an inverse correlation pattern, reinforcing its conceptual distinctiveness from opportunity (Kalkbrenner, 2021). These results align with previous findings linking future orientation to higher life satisfaction and well-being (Brothers et al., 2014; Rohr et al., 2017; Zhang et al., 2019). People with a more open-ended FTP were motivated to experience more joy and less anger and disgust, which are more likely to enhance positive affect. People with a more limited FTP were more likely to experience depressive symptoms, which tend to diminish the positive affect (Grühn et al., 2016). We also used the time-related instrument and found that the K-FTPS-opportunity shows a weak positive correlation with overall time perspective and with future dimension, whereas limitation shows a weak negative correlation. This result indicates that FTPS applies a somewhat conceptually different approach than ZTPI. While time perspectives, as defined by Zimbardo and Boyd (1999), refer to the consistent propensity of individuals to adopt a prospective temporal perspective, FTP is a construct that has been shown to vary according to age and time (Cate & John, 2007). Also, whereas ZTPI assesses individuals' tendencies to orient to the past, present, and future (Zimbardo & Boyd, 1999), the FTPS reflects the conceptualization of the future as open versus limited (Cate & John, 2007; Kang & Kim, 2021). Therefore, the hypothesis can be posited that FTPS is a useful tool for the examination of future orientation in contrast to present or past orientations, given that future time perspective changes with age. Thus, these correlation patterns clearly demonstrate that opportunity and limitation are distinct factors within future time perspective, highlighting the usefulness of the K-FTPS as a tool for examining future time perspective.

The second goal of this study was to examine the measurement invariance of the K-FTPS across age groups. We found support for configural and metric invariance across young, middle-aged, and older adults, confirming that K-FTPS assesses FTP consistently across age groups. However, scalar invariance required freeing item constraints (items 4, 3, 9, and 7), consistent with prior findings (Przepiorka et al., 2021). Item 4 ("I am certain that I have more days left to live.") was previously identified as problematic in middle-aged and older adults (Allemand et al., 2021), possibly due

to age effects. Older participants may naturally perceive that they have fewer days left to live, rather than indicating a difference in the underlying construct being measured. In addition to age effect, these differences may also be explained by cohort effect. For instance, older adults may have grown up during a time when the average life expectancy was shorter than it is today, shaping their interpretation of this item. Lastly, Strict invariance was supported when residual invariance constraint of item 5 was freed. Although scalar invariance required freeing several item constraints, the overall factorial structure remained consistent across age groups. This suggests that while certain items may be interpreted differently due to age-related factors such as perceived life expectancy or cohort experiences, the underlying conceptualization of future time remains comparable across the adult lifespan. With measurement invariance established, comparisons of FTP across age groups can be interpreted as reflecting meaningful psychological differences rather than measurement bias. This study is the first to examine K-FTPS invariance across three age groups in a large Korean sample, incorporating diverse data collection methods (e.g., web-based vs. in-person).

Limitations and Outlook

This study had several limitations. First, as this study employed a cross-sectional design, it does not allow for conclusions about the predictive validity of the K-FTPS. Future longitudinal research is needed to determine whether K-FTPS scores can predict long-term outcomes, such as life satisfaction, health, or social adaptation (Lu et al., 2018). Second, given the subjective nature of FTP, self-reports may be biased. Future research should incorporate observer reports from friends and family and behavior measures. Third, while measurement invariance was established across age groups, only partial scalar and partial strict invariance were achieved. This suggests that differences in the interpretation of certain items may be due to both age and cohort effects, which may limit the scale's universality and comparability across age groups. Lastly, although gender was well-balanced in the sample, 67.7% of the participants had attained a college degree or higher, which may not fully reflect the average education level in South Korea. Approximately 55% of South Koreans aged 25 to 64 had completed higher education (Statistics Korea, 2024). Future research should include participants with more diverse educational backgrounds to enhance the scale's generalizability.

In conclusion, the K-FTPS is a reliable and valid instrument for assessing future time perspective in Korean-speaking populations. The study confirms its two-factor structure and explores age-related differences in its dimensionality. Further research should continue evaluating and applying the K-FTPS in diverse contexts.

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Supplementary Table 1. *Characteristics of the Samples*

Items	Characteristics	Cases	Percentage (%)
Age (years)	20–39	187	38.0
	40–59	190	38.6
	60–89	115	23.4
Gender	Male	246	50.0
	Female	246	50.0
Education	Illiteracy	1	0.2
	Elementary or middle school	15	3.0
	High school	103	20.9
	Enrolled in college	40	8.1
	College graduate	286	58.1
	Postgraduate	47	9.6
Marital status	Single	179	36.4
	Married (or cohabit)	281	57.1
	Separated or divorced	23	4.7
	Widowed	9	1.8
Socioeconomic status	Low	46	9.3
	Low to moderate	163	33.1
	Moderate	213	43.4
	Moderate to upper	65	13.2
	Upper	5	1.0
Current subjective health perception	Very bad	6	1.2
	Bad	76	15.4
	Normal	276	56.1
	Good	117	23.8
	Very good	17	3.5

Supplementary Table 2. *Comparison of Korean FTPS item means across age groups (N = 492)*

	Young (*n* = 187)	Middle (*n* = 190)	Old (*n* = 115)	*F*	*Post hoc*
	M (SD)	M (SD)	M (SD)		
Item 3	4.65 (1.48)	3.99 (1.53)	3.65 (1.67)	16.58***	A > B, C
Item 4	4.82 (1.44)	4.07 (1.51)	3.43 (1.58)	31.95***	A > B > C
Item 7	4.54 (1.42)	3.89 (1.38)	3.31 (1.56)	26.82***	A > B > C
Item 9	3.42 (1.56)	3.76 (1.51)	4.10 (1.45)	7.53**	A < C

Items 3, 4, 7, and 9 are from K-FTPS. M = mean; SD = standard deviation; Post hoc = Scheffé; A = Young (age 20–39); B = Middle (age 40–59); C = Old (age 60–89).
**p < .01. ***p < .001.