

ORIGINAL ARTICLE

Longitudinal relationship between the child value, parenting stress, and controlling parenting attitudes and the self-esteem of children: Applying the actor-partner interdependence model (APIM) using a latent growth model

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Abstract

Aim: This is a descriptive longitudinal study conducted to identify the effects of the perception of child value by parents on parenting stress, controlling parenting attitudes, and children's self-esteem.

Methods: The present study targeted parents aged 19 years or older and their children who participated in the fourth through to the eighth Panel Study on Korean Children. The study examined the longitudinal relationship of the effect of parental factors on self-esteem in children, and applied an actor-partner interdependent model to analyze the effect of interactions with parents.

Results: The paternal instrumental value had a partner effect on the rate of change in maternal parenting stress, while the maternal instrumental value of children had an actor effect on the rate of change in maternal parenting stress. The baseline value of parenting stress had an actor effect on the baseline value of controlling parenting attitudes, while the rate of change in maternal parenting stress had a partner effect on paternal controlling parenting attitudes and an actor effect on the rate of change in maternal controlling parenting attitudes. The baseline value and rate of change in controlling parenting attitudes were found to influence self-esteem in children.

Conclusion: Reducing parenting stress by increasing the parents' positive perception of the value of children can be helpful in maintaining a consistent parenting attitude by parents, which can have a positive effect on self-esteem in children. It is important to provide intervention and management of variables related to self-esteem in children using a long-term and multidimensional approach.

KEYWORDS

attitudes, children, parenting, self-esteem, stress

1 | INTRODUCTION

Self-esteem is the concept of self-assessment of one's overall value, which also serves as an important factor for communal dynamics and efficacy (Bosson & Swann Jr., 2009). In particular, self-esteem plays a major role in the personality development of children and is a factor that affects their physical and psychological development (Tsaousis, 2016). In addition, children's self-esteem has been reported to have an effect on group bullying among children, which has been a major social problem, and thus, social interest should focus on improving self-esteem in children (Fredstrom, Adams, & Gilman, 2011). As self-esteem during adolescence and adulthood is based on self-esteem formed during childhood (Magro, Utesch, Dreiskamper, & Wagner, 2018), it is important to approach children's self-esteem with interest from early on.

Children's self-esteem begins to develop from the age of 2 to 3 years. Children assess their own abilities as they successfully complete tasks in their daily lives, which leads to self-esteem (Stipek & MacIver, 1989). Children's self-esteem is not something they are born with, but is developed over time through various experiences and interactions with their surrounding environment, and thus parents, who are the primary caregivers, have a significant impact on children's self-esteem (Moghaddam, Validad, Rakhshani, & Assareh, 2017). In particular, the child value as perceived by parents has an effect on parenting attitude (Steinberg & Darling, 2017), and parenting attitude has an effect on children's self-esteem (Park, 2015). The child value reflects the belief a person holds as to why he or she must raise a child, and it is divided into emotional and instrumental values (Arnold & Fawcett, 1975). Emotional value involves the parents perceiving children as people who can form emotional relationships with them. It affects the children's self-esteem by triggering a positive perception for moderating parenting stress and increasing the attitudes needed for treating the child with kindness (Ok, 2018). Instrumental value involves the perception of children as people who can provide economic or relational benefits. Accordingly, instrumental value has an effect on the control of parenting attitudes, and as a result, that control has the effect of lowering children's self-esteem (Lee, Park, Chung, & Yi, 2017). The parents' child value during early childhood influences children's growth (Choi, Yeon, Kwon, & Hong, 2013), therefore it is important to intervene with respect to the parents' values of children from early childhood.

In particular, since child value as perceived by parents is the most influential variable for predicting parenting stress, if parents can accept their roles as parents

and positively value their children, then stress related to parenting can be lowered (Ok & Chun, 2012). Lower parenting stress can not only have a positive effect on parent-child interactions but can also affect parenting attitudes. As parenting attitudes during early childhood affect the growth and development of children, especially their physical and emotional adaptations, it becomes an important factor for children's self-esteem (Moghaddam et al., 2017; Steele et al., 2016).

In the past, factors related to children's self-esteem were identified only from the maternal point of view, based on the idea that the mother was the primary caregiver. However, in modern society, women's social activities have increased, and the boundaries of roles within the home have become blurred; the concept of co-parenting has emerged. Therefore, it is necessary to identify the effects on children's self-esteem from the paternal point of view as well. The actor-partner interdependent model (APIM) proposed by Kenny (1996) is recommended for analyzing the interrelationships between married couples, especially since married couples are in an interdependent relationship. If a dyadic data set is handled as an individual data point, then the mutual dynamics of the couple cannot be examined. Even if dyadic data are collected from both partners, analyzing such interdependent data as independent data points would violate the major assumption in inferential statistics, which may cause a type I error due to the standard error (SE) measurement being lower than it actually is. Therefore, interdependent dyadic data must be analyzed using the APIM (Kenny, 1996). Accordingly, since children's self-esteem is developed through their interactions with controlling parenting attitudes, data regarding children's self-esteem should be collected as parent-child units and analyzed as dyadic data. In particular, as the home environment, which is the basic foundation for forming children's self-esteem, is influenced by the interactions of both parents' controlling parenting attitudes, it is necessary to examine how it affects children's self-esteem while taking both parents into consideration. Moreover, child value as perceived by parents influences controlling parenting attitudes during the children's growing years, while children's self-esteem is not established within a short period of time. Considering these points, it is necessary to comprehensively examine how the child value as perceived by parents during the children's early childhood affects changes in parenting stress, controlling parenting attitude, and children's self-esteem. Accordingly, the present study aimed to identify the actor and partner effects as well as the longitudinal relationships of parental factors that affect children's self-esteem.

2 | METHODS

2.1 | Research design

In this study, a descriptive longitudinal survey design was applied to identify the effects of child value as perceived by parents on parenting stress, controlling parenting attitudes, and children's self-esteem using the Panel Study on Korean Children (PSKC) data (Figure 1).

2.2 | Participants

The PSKC data by the Korea Institute of Child Care & Education (KICCE) used in the present study comprised of longitudinal survey data on children born in 2008 and their mothers, along with their community environments. The present study targeted parents aged 19 years or older and their children who participated in the fourth (2011) to the eighth (2015) panel survey. The PSKC conducted by KICCE included households of babies born between April and July 2008 in sampled medical institutions in which annual delivery count was 500 or higher as of 2006, with the exception of households that were not included in the sample survey and those that refused to participate in the survey. The exclusion criteria for this study included: (1) when the mother of the newborn in the household was not able to communicate in Korean; (2) a mother who was in poor postpartum health; (3) a

newborn with a serious disease; (4) a mother with a serious disease; (5) a newborn that was planned to be put up for adoption; (6) a newborn who was part of a multiple birth; and (7) a mother who was 18 years or younger. The PSKC recruited 2,562 households as the preliminary samples, of which 2,150 households with newborns were extracted as the final samples. The PSKC used stratified multi-stage sampling, in which medical institutions where newborns were delivered were selected in stage 1; the households with newborns delivered at the selected medical institutions were extracted as preliminary samples in stage 2; and households among the preliminary samples with intent to participate in the panel study were established as the final samples in stage 3. For the validity of the sample used in the present study, sample retention rates suggested by the PSKC research team were checked. The results indicated that 81.6, 79.2, 77.3, 75.3, and 74.3% of the samples from the fourth, fifth, sixth, seventh, and eighth surveys, respectively, were retained. In the present study, 1,174 fathers, 1,174 mothers, and 1,174 children who participated in all of the fourth through to the eighth panel studies and health surveys were selected as the final subjects. In the structural equation model, the recommended level for the minimum sample size is 10 times the free parameters, while the ideal size recommended is 150–400 subjects. Since the sample size in the present study was 1,174 subjects, it was big enough for structural equation-based analysis of the actor and partner effects.

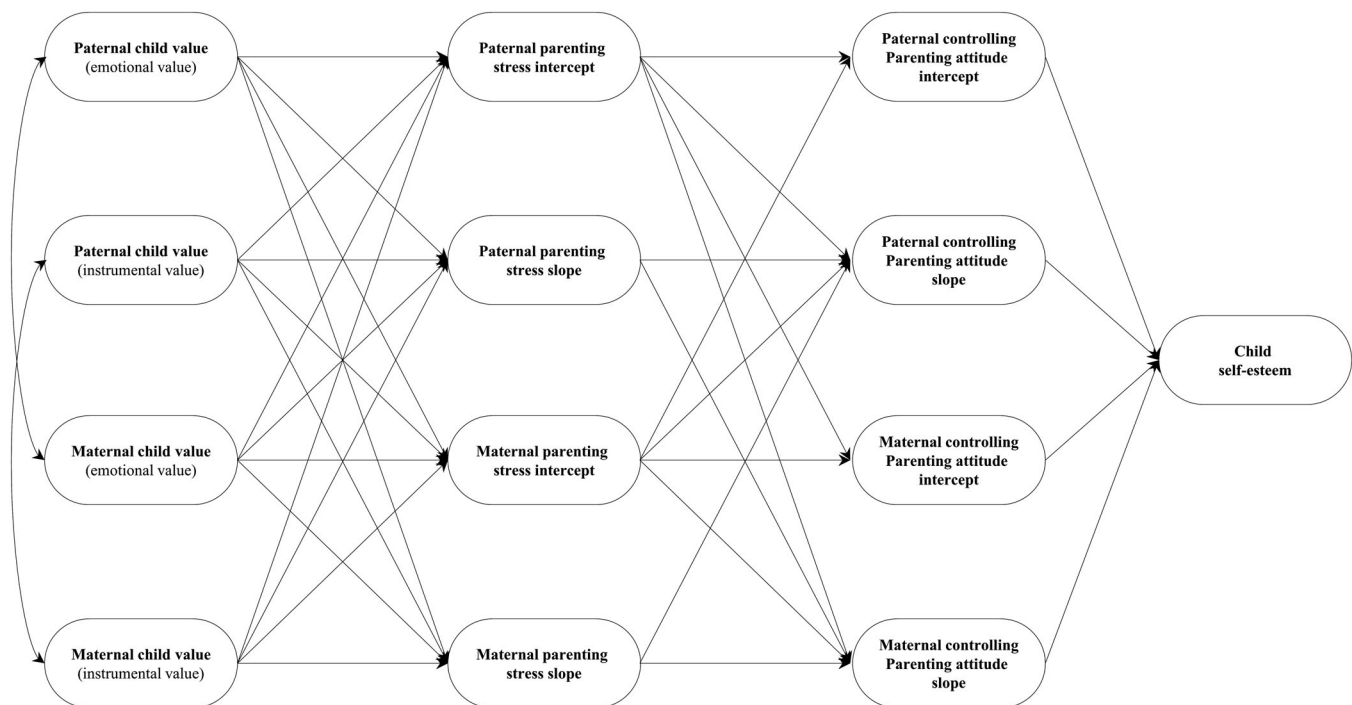


FIGURE 1 Conceptual framework

2.3 | Measurement

2.3.1 | Child value

The child value tool consisted of eight items (four items each for emotional and instrumental values) that were developed by the Korea Institute for Health and Social Affairs, a division of the Ministry of Health and Welfare (Lee et al., 2005), and revised and supplemented through a preliminary study conducted by the PSKC research team in 2007. Each item was graded on a five-point scale, with higher scores indicating higher perceptions of child value. In the 2007 preliminary PSKC study, the reliability of the tool had a Cronbach's alpha of .80. In the fourth panel study used in the present study, the reliability of the tool for paternal emotional value had a Cronbach's alpha of .80; the paternal instrumental value was Cronbach's alpha .76; the maternal emotional value was Cronbach's alpha .82; and the maternal instrumental value was Cronbach's alpha .74.

2.3.2 | Parenting stress

The parenting stress tool consisted of 11 items established through the 2007 preliminary study by the PSKC research team; they were extracted from "burden and distress of parental role," a subdomain of the parenting stress scale developed by Kim and Kang (1997). Each item was graded on a five-point scale, with higher scores indicating higher parenting stress. In the study by Kim and Kang (1997), the reliability of the tool had a Cronbach's alpha of .86. In the present study, the reliability of the tool for the fourth panel study's paternal parenting stress had a Cronbach's alpha of .85; the fourth panel study's maternal parenting stress had a Cronbach's alpha of .87; the fifth panel study's paternal parenting stress had a Cronbach's alpha of .76; the fifth panel study's maternal parenting stress had a Cronbach's alpha of .88; the sixth panel study's paternal parenting stress had a Cronbach's alpha of .87; the sixth panel study's maternal parenting stress had a Cronbach's alpha of .88; the seventh panel study's paternal parenting stress had a Cronbach's alpha of .87; and the seventh panel study's maternal parenting stress had a Cronbach's alpha of .88.

2.3.3 | Controlling parenting attitudes

The controlling parenting attitudes tool consisted of eight items developed by the PSKC research team based on a precedent study by Cho, Lee, Lee, and Kwon (1999). Each item was graded on a five-point scale, with higher total scores indicating higher controlling parenting attitudes.

In the present study, the reliability of the tool for the fourth panel study's paternal parenting stress had a Cronbach's alpha of .85; the fourth panel study's maternal parenting stress had a Cronbach's alpha of .77; the fifth panel study's paternal parenting stress had a Cronbach's alpha of .82; the fifth panel study's maternal parenting stress had a Cronbach's alpha of .86; the sixth panel study's paternal parenting stress had a Cronbach's alpha of .81; the sixth panel study's maternal parenting stress had a Cronbach's alpha of .76; the seventh panel study's paternal parenting stress had a Cronbach's alpha of .76; and the seventh panel study's maternal parenting stress had a Cronbach's alpha of .79.

2.3.4 | Children's self-esteem

The children's self-esteem tool consisted of five items that were based on the self-esteem measurement tool developed by Rosenberg (1989) and subsequently condensed according to the children's age by the Millennium Cohort Study (MCS) team from the Department of Social Science, UCL Institute of Education, University of London. The children's self-esteem items were retrieved from <http://www.cls.ioe.ac.uk/> on January 21, 2015, by the PSKC research team. Each item was graded on a five-point scale with higher total scores indicating higher children's self-esteem. In the present study, the reliability of the tool had a Cronbach's alpha of .76.

2.4 | Data analysis

The data used in the present study were obtained from the PSKC homepage (<http://panel.kicce.re.kr/kor/publication/02.jsp>). To use the PSKC data, the researchers submitted the study protocol to the PSKC research team for review. Upon receiving approval for use of the fourth through to the eighth PSKC data, the relevant data were downloaded. The data used in the present study contained no personal identifiable information.

Collected data were analyzed using SPSS-WIN Version 20.0 and AMOS Version 20.0 programs. In this study, data analysis was performed by applying the longitudinal weights suggested by the PSKC. SPSS descriptive statistics were used to describe the measured variables and general characteristics of the subjects, while skewness and kurtosis of the measured variables were tested to check for data normality. Moreover, the correlation and multicollinearity of measured variables and each construct were tested by the Pearson correlation coefficient, while the reliability of the tools were checked with Cronbach's alpha coefficients. The actor and partner effects of child value as perceived by

parents, parenting stress, and controlling parenting attitudes on children's self-esteem were analyzed using a latent growth model (LGM) and interdependence model. To check whether paternal and maternal variables (child value, parenting stress, and controlling parenting attitudes) have equivalent meanings within a single measurement tool, four competition models were compared to test for measurement invariance. The models were: (1) baseline model; (2) model with constraints on factor loading; (3) model with constraints on covariance of error; and (4) model with constraints on factor loading and covariance of error. To compare the fitness of the four models, measurement invariance was tested based on the Tucker Lewis index (TLI), comparative fit index (CFI), and root mean square error of approximation (RMSEA), which are not sensitive to χ^2 and number of cases. Moreover, for prediction of the pattern of change in parenting stress and controlling parenting attitudes over time, AMOS 17.0 (SPSS Korea Data Solution Inc.) was used to design the LGM. For the pattern of change in parenting stress and controlling parenting attitudes over time, the significance of the baseline values of the unconditional model and the rate of change were tested, while the most fit model was finally selected by comparing the model fitness of no-change and linear models. For testing the fitness of the models, χ^2 , normed fit index (NFI), relative fit index (RFI), incremental fit index (IFI), TLI, CFI, and RMSEA were used. To identify the correlations of each variable, the actor and partner effects of parental variables on children's self-esteem were investigated by testing the significance of the path coefficients. To test the fitness of the models, a maximum likelihood method was performed, while the fitness of the models was confirmed by absolute fitness indices χ^2 , χ^2/df , RMSEA, standardized root mean residual, goodness of fit index, adjusted goodness of fit index, CFI, NFI, and TLI. The statistical significance of indirect effects was tested by bootstrapping.

2.5 | Ethical considerations

The eighth PSKC was approved by the Institutional Review Board (IRB) at KICCE (IRB No. KICCEIRB-2015-03), and this study was conducted after receiving a waiver for ethical approval (1040271-201811-HR-029) from the IRB of C University.

3 | RESULTS

3.1 | General characteristics of subjects

The general characteristics of the subjects in this study were described based on the fourth panel survey

(2008). The participants' places of residence comprised of 158 (13.5%) from the Seoul area, 434 (37.0%) from the Gyeongin area, 133 (11.3%) from the Daejeon/Chungcheon/Gangwon area, 119 (10.1%) from the Daegu/Gyeongbuk area, 215 (18.3%) from the Busan/Ulsan/Gyeongnam area, and 115 (9.8%) from the Gwangju/Jeolla area. The mean age of the fathers was 36.3 ± 4.0 years and that of the mothers was 33.8 ± 3.7 years, while the mean duration of remaining married was 83.1 ± 38.3 months (range: 21.0–164.0 months). The mean age of the children was 38.7 ± 1.5 months, while their order of birth was 614 (52.3%) as first-born, 533 (45.4%) second-born, and 13 (1.1%) as third-born. The highest education of the fathers appeared in the order of 548 (46.7%) with university (4 years) graduation, 267 (22.7%) with high school graduation, and 171 (14.6%) with vocational college graduation. The highest education of the mothers appeared in the order of 450 (38.3%) with university (4 years) graduation, 348 (29.6%) with high school graduation, and 306 (26.1%) with vocational college graduation. The occupation of the fathers appeared in the order of 278 (23.6%) as office workers; 262 (22.3%) as professionals and related workers; 157 (13.4%) as factory machine operators and assemblers; and 153 (13.0%) as craft and related trade workers. For the occupation of the mothers, the order appeared as 715 (60.9%) as homemakers; 148 (12.6%) as professionals and related workers; and 100 (8.5%) as office workers. The number of fathers and mothers with a religion was 460 (39.2%) and 561 (47.8%), respectively. Among the fathers, the mean parenting time was 1.6 ± 1.5 hours during weekdays and 4.8 ± 3.1 during weekends. Among the mothers, the mean parenting time was 5.1 ± 3.0 hours during weekdays and 8.9 ± 3.1 hours during weekends.

3.2 | Correlations and changes according to trends over time for variables

To identify the pattern of change in parenting stress and controlling parenting attitudes over time, the mean value of each factor was calculated. The results indicated that parenting stress and controlling parenting attitudes displayed a gradually decreasing trend over time. Moreover, when skewness and kurtosis were measured to test for normality of each factor, the results indicated that all the factors did not exceed an absolute skewness value of three or absolute kurtosis value of 10, which satisfied the normality assumption. The correlations between the factors were found to be significant at a significance level of .05 (Table 1).

TABLE 1 Correlation of the variables (N = 1,174 dyad)

Variables	M ± SD	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20	X21
X1	4.5 ± 0.5	1																				
X2	3.2 ± 0.7	.36*	1																			
X3	4.4 ± 0.6	.35*	.13*	1																		
X4	2.9 ± 0.8	.15*	.36*	.38*	1																	
X5	2.5 ± 0.6	.38*	.15*	.20*	.18*	1																
X6	2.4 ± 0.6	.22*	.16*	.15*	.13*	.50*	1															
X7	2.3 ± 0.6	.20*	.17*	.14*	.14*	.50*	.55*	1														
X8	2.3 ± 0.6	.21*	.15*	.15*	.14*	.47*	.52*	.57*	1													
X9	2.8 ± 0.6	.11*	.16*	.38*	.20*	.34*	.29*	.29*	.25*	1												
X10	2.7 ± 0.6	.10*	.20*	.30*	.12*	.31*	.40*	.35*	.27*	.68*	1											
X11	2.6 ± 0.6	.19*	.14*	.29*	.12*	.27*	.34*	.41*	.28*	.63*	.67*	1										
X12	2.6 ± 0.6	.19*	.13*	.30*	.14*	.28*	.30*	.36*	.36*	.61*	.64*	.65*	1									
X13	3.5 ± 0.5	-.15*	.16*	-.19*	.20*	.13*	.13*	.17*	.18*	.14*	.12*	.16*	.16*	1								
X14	3.4 ± 0.6	-.18*	.18*	-.13*	.12*	.13*	.12*	.15*	.15*	.14*	.11*	.16*	.17*	.46*	1							
X15	3.4 ± 0.6	-.19*	.20*	-.17*	.12*	.14*	.14*	.16*	.16*	.14*	.12*	.15*	.15*	.46*	.45*	1						
X16	3.3 ± 0.6	-.18*	.18*	-.11*	.14*	.15*	.18*	.16*	.19*	.19*	.14*	.18*	.14*	.42*	.47*	.50*	1					
X17	3.4 ± 0.4	-.17*	.17*	-.13*	.13*	.18*	.11*	.12*	.13*	.13*	.12*	.17*	.14*	.25*	.13*	.19*	.15*	1				
X18	3.4 ± 0.5	-.16*	.15*	-.19*	.17*	.13*	.19*	.12*	.12*	.17*	.14*	.17*	.16*	.18*	.25*	.18*	.18*	.51*	1			
X19	3.3 ± 0.5	-.14*	.13*	-.15*	.14*	.13*	.19*	.19*	.19*	.13*	.13*	.15*	.15*	.16*	.20*	.29*	.23*	.49*	.55*	1		
X20	3.3 ± 0.5	-.13*	.13*	-.14*	.17*	.13*	.14*	.17*	.17*	.14*	.17*	.13*	.14*	.14*	.19*	.24*	.27*	.43*	.56*	.57*	1	
X21	3.4 ± 0.4	.15*	-.14*	.18*	-.18*	-.18*	-.18*	-.18*	-.12*	-.14*	-.15*	-.19*	-.19*	-.16*	-.18*	-.15*	-.15*	-.16*	-.14*	-.15*	-.18*	1

Abbreviations: X1, Paternal child value 4th (emotional value); X2, Paternal child value 4th (instrumental value); X3, Maternal child value 4th (emotional value); X4, Maternal child value 4th (instrumental value); X5, Paternal parenting stress 4th; X6, Paternal parenting stress 5th; X7, Paternal parenting stress 6th; X8, Paternal parenting stress 7th; X9, Maternal parenting stress 4th; X10, Maternal parenting stress 5th; X11, Maternal parenting stress 6th; X12, Maternal parenting stress 7th; X13, Paternal controlling parenting attitude 4th; X14, Paternal controlling parenting attitude 5th; X15, Paternal controlling parenting attitude 6th; X16, Paternal controlling parenting attitude 7th; X17, Maternal controlling parenting attitude 4th; X18, Maternal controlling parenting attitude 5th; X19, Maternal controlling parenting attitude 6th; X20, Maternal controlling parenting attitude 7th; X21, Child self-esteem 8th; M, mean; SD, standard deviation.

*p < .005.

TABLE 2 The test of measurement equivalence

Model		χ^2	df	TLI	CFI	RMSEA
Child value						
Model 1	Unconstrained model	341.3	103	.92	.93	.05
Model 2	Measurement weights constrain	363.4	110	.92	.93	.05
Model 3	Measurement residual constrain	318.3	98	.93	.94	.04
Model 4	Measurement weights and residual constrain	339.6	102	.92	.93	.05
Parenting stress 4th						
Model 1	Unconstrained model	349.7	208	.96	.98	.05
Model 2	Measurement weights constrain	369.5	218	.97	.98	.05
Model 3	Measurement residual constrain	328.5	197	.97	.98	.04
Model 4	Measurement weights and residual constrain	350.8	207	.96	.95	.05
Parenting stress 5th						
Model 1	Unconstrained model	346.5	208	.95	.96	.04
Model 2	Measurement weights constrain	353.2	218	.96	.97	.04
Model 3	Measurement residual constrain	312.3	197	.98	.99	.03
Model 4	Measurement weights and residual constrain	329.9	207	.97	.98	.04
Parenting stress 6th						
Model 1	Unconstrained model	327.9	208	.95	.96	.03
Model 2	Measurement weights constrain	338.3	218	.96	.97	.03
Model 3	Measurement residual constrain	301.3	197	.97	.98	.03
Model 4	Measurement weights and residual constrain	320.7	207	.96	.97	.03
Parenting stress 7th						
Model 1	Unconstrained model	335.9	208	.97	.98	.05
Model 2	Measurement weights constrain	340.9	218	.97	.98	.05
Model 3	Measurement residual constrain	308.5	197	.98	.99	.04
Model 4	Measurement weights and residual constrain	331.8	207	.96	.97	.05
Controlling parenting attitude 4th						
Model 1	Unconstrained model	141.35	53	.96	.97	.04
Model 2	Measurement weights constrain	146.26	58	.95	.96	.05
Model 3	Measurement residual constrain	116.31	47	.96	.97	.04
Model 4	Measurement weights and residual constrain	144.31	52	.95	.96	.05
Controlling parenting attitude 5th						
Model 1	Unconstrained model	134.01	53	.96	.97	.05
Model 2	Measurement weights constrain	131.77	58	.96	.97	.05
Model 3	Measurement residual constrain	101.44	47	.97	.98	.04
Model 4	Measurement weights and residual constrain	136.36	52	.95	.96	.05
Controlling parenting attitude 6th						
Model 1	Unconstrained model	143.01	53	.94	.95	.04
Model 2	Measurement weights constrain	151.53	58	.94	.95	.04
Model 3	Measurement residual constrain	116.50	47	.97	.98	.03
Model 4	Measurement weights and residual constrain	150.46	52	.94	.95	.04
Controlling parenting attitude 7th						
Model 1	Unconstrained model	147.35	53	.96	.97	.05
Model 2	Measurement weights constrain	150.51	58	.96	.97	.05

(Continues)

TABLE 2 (Continued)

Model		χ^2	df	TLI	CFI	RMSEA
Model 3	Measurement residual constrain	120.47	47	.97	.98	.04
Model 4	Measurement weights and residual constrain	143.38	52	.95	.96	.06

Abbreviations: Df, degrees of freedom; TLI, Tucker Lewis index; CFI, comparative fit index; RMSEA, root mean square error of approximation.

3.3 | Measurement invariance test

To check whether paternal and maternal variables (child value, parenting stress, and controlling parenting attitudes) have equivalent meanings within a single measurement tool, four competition models were compared to test for measurement invariance. The results indicated that measurement invariance was confirmed (Table 2).

3.4 | Fitness test and LGM for each factor

To determine whether the pattern of change in each factor was statistically significant and to find the optimal model for the trend in change, the fitness of no-change and linear models were tested. The results indicated that a linear model was fit for all factors, as follows: paternal parenting stress ($\chi^2 = 18.92$, $df = 8$, $NFI = .98$, $RFI = .99$, $IFI = .99$, $TLI = .99$, $CFI = .99$, $RMSEA = .04$), maternal parenting stress ($\chi^2 = 23.14$, $df = 8$, $NFI = .98$, $RFI = .98$, $IFI = .98$, $TLI = .99$, $CFI = .98$, $RMSEA = .05$), paternal controlling parenting attitudes ($\chi^2 = 22.88$, $df = 8$, $NFI = .99$, $RFI = .99$, $IFI = .99$, $TLI = .99$, $CFI = .99$, $RMSEA = .04$), and maternal controlling parenting attitudes ($\chi^2 = 23.05$, $df = 8$, $NFI = .98$, $RFI = .98$, $IFI = .99$, $TLI = .99$, $CFI = .99$, $RMSEA = .03$).

3.5 | Prediction of developmental trajectory for each factor

The baseline values of each factor were as follows: paternal parenting stress 2.54 ($p < .001$), maternal parenting stress 2.81 ($p < .001$), paternal controlling parenting attitudes 3.51 ($p < .001$), and maternal controlling parenting attitudes 3.42 ($p < .001$). The baseline variances of each factor were as follows: paternal parenting stress .18 ($p < .001$), maternal parenting stress .28 ($p < .001$), paternal controlling parenting attitudes .13 ($p < .001$), and maternal controlling parenting attitudes .19 ($p < .001$). Therefore, the hypothesis that the mean baseline value for each factor is zero was nullified, and individual differences in baseline values for each factor were not statistically significant. The mean rate of change for each factor was as

TABLE 3 Trajectories of the variables

Variables	Mean	Variance
Paternal parenting stress intercept	2.54	.18
Paternal parenting stress slope	−.18	.05
Paternal parenting stress intercept-slope correlation	−.18	
Maternal parenting stress intercept	2.81	.28
Maternal parenting stress slope	−.25	.05
Maternal parenting stress intercept-slope correlation	−.29	
Paternal controlling parenting attitude intercept	3.51	.13
Paternal controlling parenting attitude slope	−.19	.03
Paternal controlling parenting attitude intercept-slope correlation	−.20	
Maternal controlling parenting attitude intercept	3.42	.19
Maternal controlling parenting attitude slope	−.16	.08
Maternal controlling parenting attitude intercept-slope correlation	−.31	

follows: paternal parenting stress −.18 ($p < .001$), maternal parenting stress −.25 ($p < .001$), paternal controlling parenting attitudes −.19 ($p < .001$), and maternal controlling parenting attitudes −.16 ($p < .001$), which indicated a decrease in all factors with each year of progression. The variances of rate of change for each factor were as follows: paternal parenting stress .05 ($p < .001$), maternal parenting stress .05 ($p < .001$), paternal controlling parenting attitudes .03 ($p < .001$), and maternal controlling parenting attitudes .08 ($p < .001$), indicating that there were individual differences in the rate of change. With respect to the correlations between the baseline value and rate of change for each factor, the results were as follows: paternal parenting stress −.18 ($p < .001$), maternal parenting stress −.29 ($p < .001$), paternal controlling parenting attitudes −.20 ($p < .001$), and maternal controlling parenting attitudes −.31 ($p < .001$). Therefore, all factors indicated that having higher baseline values resulted in a slower decrease in level over time (Table 3) (Figure 2).

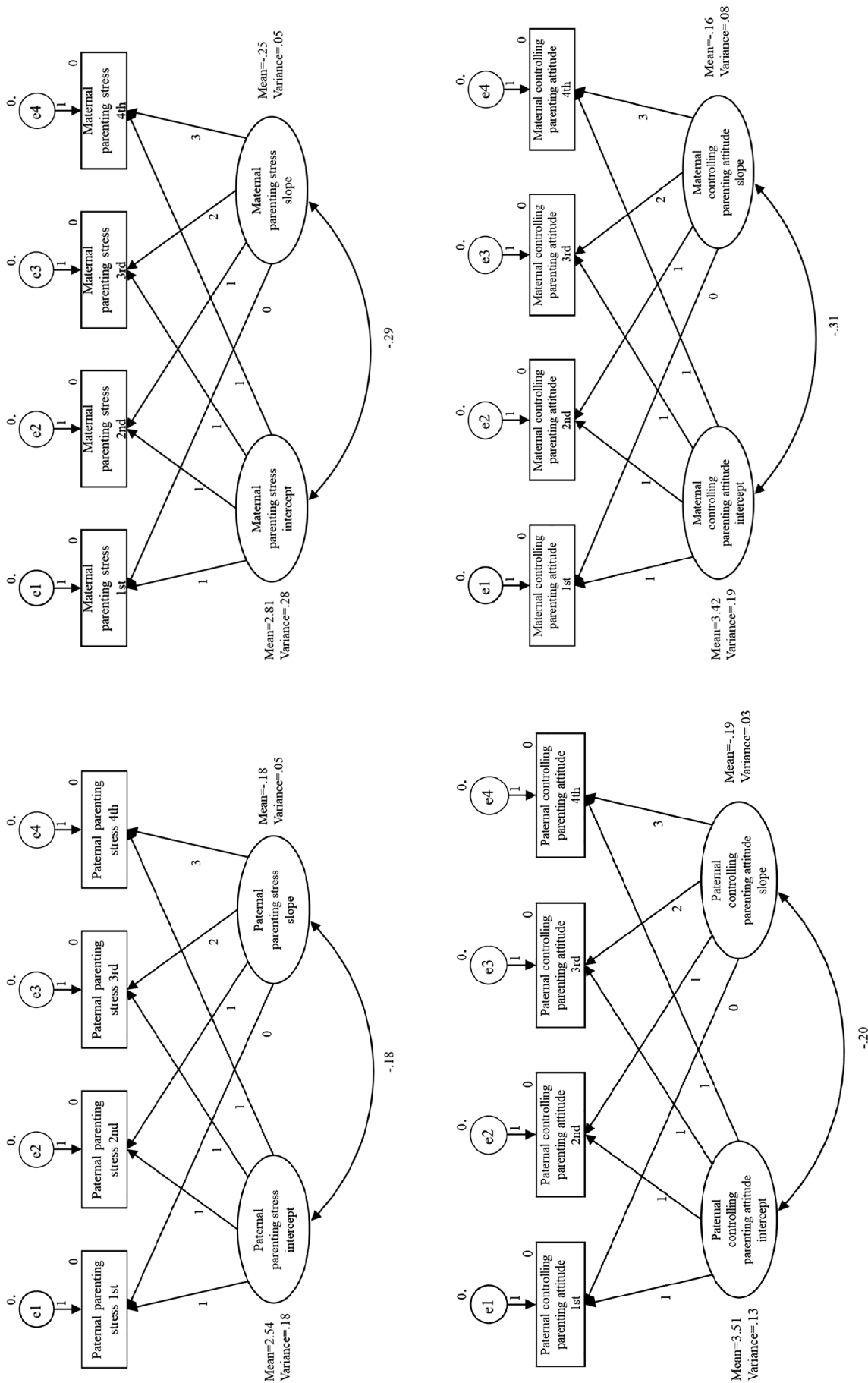


FIGURE 2 Trajectories of the variables

3.6 | Results of test on study model

The fitness of the model was found to be $\chi^2 = 348.94$, $df = 142$, $NFI = .98$, $RFI = .97$, $IFI = .99$, $TLI = .98$, $CFI = .99$, and $RMSEA = .03$. Among a total of 32 hypotheses, 14 hypotheses were selected (Table 4). The results indicated that emotional value as perceived by fathers had an actor effect on the baseline value of paternal parenting stress ($\beta = -.40$, $p < .001$) and rate of change in paternal parenting stress ($\beta = -.34$, $p < .001$), while

instrumental value as perceived by fathers had a partner effect on the rate of change in maternal parenting stress ($\beta = -.10$, $p = .031$). Meanwhile, child emotional value as perceived by mothers had an actor effect on the baseline value of maternal parenting stress ($\beta = -.42$, $p < .001$) and rate of change in maternal parenting stress ($\beta = -.37$, $p = .031$), while instrumental value as perceived by mothers had an actor effect on the rate of change in maternal parenting stress ($\beta = -.35$, $p = .041$). The baseline value of paternal parenting stress had an

TABLE 4 The result of latent growth model on child self-esteem

Independent variables	Dependent variables	β	B	SE	CR	p
Paternal child value (emotional value)	→ Paternal parenting stress intercept	-.40	-.34	.03	-10.25	<.001
	→ Paternal parenting stress slope	-.34	-.06	.01	-4.388	<.001
	→ Maternal parenting stress intercept	-.01	-.01	.03	-0.31	.758
	→ Maternal parenting stress slope	-.02	-.01	.01	-0.09	.929
Paternal child value (instrumental value),	→ Paternal parenting stress intercept	-.03	-.02	.02	-0.70	.484
	→ Paternal parenting stress slope	-.11	-.10	.01	-1.40	.164
	→ Maternal parenting stress intercept	-.02	-.01	.01	-0.53	.599
	→ Maternal parenting stress slope	-.10	-.12	.01	-2.155	.031
Maternal child value (emotional value)	→ Paternal parenting stress intercept	-.08	-.10	.03	-1.09	.268
	→ Paternal parenting stress slope	-.02	-.01	.01	-0.19	.851
	→ Maternal parenting stress intercept	-.42	-.38	.03	-11.52	<.001
	→ Maternal parenting stress slope	-.37	-.20	.01	-2.16	.031
Maternal child value (instrumental value),	→ Paternal parenting stress intercept	-.03	-.01	.01	-0.73	.466
	→ Paternal parenting stress slope	-.01	-.01	.01	-0.10	.992
	→ Maternal parenting stress intercept	-.06	-.04	.02	-1.67	.094
	→ Maternal parenting stress slope	-.35	-.22	.01	-2.04	.041
Paternal parenting stress intercept	→ Paternal controlling parenting attitude intercept	.13	.10	0.1	2.94	.003
	→ Paternal controlling parenting attitude slope	.06	.01	.02	0.43	.665
	→ Maternal controlling parenting attitude intercept	.03	.03	.01	0.53	.594
	→ Maternal controlling parenting attitude slope	.07	.12	.02	0.56	.574
Paternal parenting stress slope	→ Paternal controlling parenting attitude slope	.17	.16	.01	1.02	.307
	→ Maternal controlling parenting attitude slope	.14	.13	.01	0.98	.327
Maternal parenting stress intercept	→ Paternal controlling parenting attitude intercept	.07	.05	.04	1.18	.236
	→ Paternal controlling parenting attitude slope	.01	.01	.01	.101	.991
	→ Maternal controlling parenting attitude intercept	.10	.14	.01	2.29	.045
	→ Maternal controlling parenting attitude slope	.01	.02	.01	0.12	.905
Maternal parenting stress slope	→ Paternal controlling parenting attitude slope	.29	.36	0.3	2.27	.025
	→ Maternal controlling parenting attitude slope	.39	.24	.08	2.69	.009
Paternal controlling parenting attitude intercept	→ Child self-esteem	-.09	-.12	.01	-2.32	.047
Paternal controlling parenting attitude slope	→ Child self-esteem	-.10	-.11	.03	-2.11	.039
Maternal controlling parenting attitude intercept	→ Child self-esteem	-.19	-.13	.05	-2.29	.022
Maternal controlling parenting attitude slope	→ Child self-esteem	-.24	-.22	.07	-2.28	.034

Abbreviations: CR, critical ratio; SE, standard error.

actor effect on the baseline value of paternal controlling parenting attitudes ($\beta = .13, p = .003$), while the baseline value of maternal parenting stress had an actor effect on the baseline value of maternal controlling parenting attitudes ($\beta = .10, p = .045$). Meanwhile, the rate of change in maternal parenting stress had a partner effect on the rate of change in paternal controlling parenting attitudes ($\beta = .29, p = .025$) and an actor effect on the rate of change in maternal controlling parenting attitudes ($\beta = .39, p = .009$). The results indicated that the baseline values of paternal controlling parenting attitudes ($\beta = -.09, p = .047$), rate of change in paternal controlling parenting attitudes ($\beta = -.10, p = .039$), baseline values of maternal controlling parenting attitudes ($\beta = -.19, p = .022$), and rate of change in maternal controlling parenting attitudes ($\beta = -.24, p = .034$) had an effect on children's self-esteem. Emotional value ($\beta = .03, p < .001$) and instrumental value ($\beta = -.08, p < .001$) as perceived by fathers, emotional value ($\beta = .07, p < .001$) and instrumental value ($\beta = -.05, p < .001$) as perceived by mothers, and baseline values of paternal parenting stress ($\beta = -.17, p < .001$), baseline values of maternal parenting stress ($\beta = -.17, p < .001$), and the rate of change in maternal parent stress ($\beta = -.13, p < .001$) also had an indirect effect on the children's self-esteem.

4 | DISCUSSION

The present study aimed to identify the actor and partner effects as well as longitudinal relationships of parental variables on children's self-esteem using the PSKC data. The points of discussion based on the study results were as follows.

First, in the present study, paternal parenting stress and controlling parenting attitudes as well as maternal parenting stress and controlling parenting attitudes displayed individual differences. These findings were similar to the results of a study on American mothers (Mulsow, Caldera, Pursley, Reifman, & Huston, 2002), which reported that there is a group of mothers with chronically high parenting stress, and that there are individual differences in parenting stress. Therefore, it was determined that accurate identification of the baseline level of parenting stress and controlling parenting attitudes from each individual may be important. Moreover, a precedent study on low-income mothers and 14–36-month-old children (Chang & Fine, 2007) also reported that the developmental trajectory of maternal parenting stress does not indicate individual differences, and thus, an individualized approach with consideration of situational factors is important for effective intervention of parenting stress. The results of these precedent studies, along with the

findings in the present study, indicated that it is important to accurately identify baseline levels of parenting stress and controlling parenting attitudes in each individual when providing long-term management.

Second, the testing of the study model indicated that emotional value as perceived by fathers had an actor effect on the baseline value and rate of change in paternal parenting stress. Moreover, emotional value as perceived by mothers had an actor effect on the baseline value of maternal parenting stress, while both emotional and instrumental value as perceived by mothers had an actor effect on the rate of change in maternal parenting stress. These findings were partially consistent with other studies on mothers who reported that positive valuation and mothers' psychological characteristics can reduce parenting stress (Jackson & Huang, 2000; Jackson & Schemes, 2005). Moreover, parenting stress in both fathers and mothers was found to be influenced more by their own perception of emotional value, more so than the partner's emotional value. Considering that human behavior elicits greater motivation and satisfaction when they themselves place value on such behavior (Shah & Higgins, 1997), it is crucial for parents to establish positive perceptions of child value on their own in order to reduce parenting stress. In the present study, instrumental value as perceived by fathers had a significant partner effect on the rate of change in maternal parenting stress. It is believed that the reason for such results may be due to the fact that Korean society traditionally has a high cultural tendency in which the patrifocal value system affects the entire family, and thus, the child value as perceived by the father did not affect maternal parenting stress. Therefore, to reduce maternal parenting stress, programs and support systems that can assist in reducing children's instrumental value as perceived by fathers may be necessary.

Third, the baseline value of paternal controlling parenting attitudes had an actor effect on the baseline value of paternal parenting stress, while the baseline value of maternal controlling parenting attitudes had an actor effect on the baseline value of maternal parenting stress. These findings were consistent with another precedent study reporting that higher parenting stress has a greater effect on controlling parenting attitudes (Han & Lee, 2018). In the early stages of raising a child, the parenting attitudes of each parent are influenced more by their own parenting stress than by their spouse's parenting stress, and thus, individualized parenting stress management taking both paternal and maternal characteristics into consideration would be effective for parenting attitudes during such stages. However, the rate of change in maternal parenting stress indicated a partner effect on the rate of change in paternal controlling parenting attitudes and

an actor effect on the rate of change in maternal controlling parenting attitudes. These findings were similar to the results of a previous study on parenting stress in mothers with children aged 3–5 years, in which it was reported that built up parenting stress influenced the parent–child interaction and parenting behavior, which ultimately had a negative impact on the development of the child (Crnic, Gaze, & Hoffman, 2005). In particular, the initial value of children as perceived by the father influences the initial maternal parenting stress; however, as time passes, changes in maternal parenting stress is directly influenced by changes in paternal parenting attitudes. Therefore, managing and tracking changes in maternal parenting stress from a long-term perspective may be important in forming positive paternal and maternal parenting attitudes.

Fourth, the baseline values and rate of change in paternal and maternal controlling parenting attitudes were found to have an effect on children's self-esteem. This study confirmed that parenting attitudes affect children's self-esteem from a longitudinal perspective. This finding is different from the reports of a previous study (Moghaddam et al., 2017) which confirmed that parents' parenting style directly affects children's self-esteem at a specific point in time. Its value also lies in that the influence of the parents on the children was confirmed in terms of both the paternal and maternal sides in an interdependent manner and not just from either the mother's or father's side. As maternal and paternal controlling parenting attitudes continue to influence children's self-esteem over time, it is important to assess the parenting attitudes of both parents in the early stages and provide continued intervention. Ultimately, reducing parenting stress by increasing children's positive value as perceived by parents can help maintain a consistent parenting attitude by the parents, which can have a positive impact on children's self-esteem. Therefore, variables associated with children's self-esteem require intervention and management from a long-term, multidimensional approach, rather than a short-term, unidimensional approach. Moreover, early childhood is when a child develops his or her own set of rules and self-consciousness, and parents have qualitatively varied parenting experiences. Based on the perception of child value that has been previously formed, it could be necessary to regularly monitor parenting stress and parenting attitudes, which may undergo various changes during early childhood. The limitations of this study are as follows. Since children's self-esteem interacts with not only parents but also various factors, it is necessary to confirm in future studies how various environmental factors affect the child's self-esteem longitudinally.

CONCLUSIONS

The significance of the present study is that it provides basic data for improving children's self-esteem using a longitudinal study on the actor and partner effects of parental variables with respect to the relationships between child value as perceived by parents, parenting stress, controlling parenting attitudes, and children's self-esteem. In the future, when developing educational programs for improving children's self-esteem, it is hoped that the findings in the present study can be used as basic data for education that considers the actor and partner effects of child value as perceived by parents, parenting stress, and parenting attitude. Recommendations for future studies are as follows: since parental variables, such as child value as perceived by parents, parenting stress, and parenting attitudes may appear differently in dual-income families, follow-up studies on such a topic will be necessary.

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CONFLICT OF INTEREST

The authors of this paper have no conflicts of interest to report. All authors have materially participated in the research and/or article preparation.

AUTHOR CONTRIBUTIONS

All the authors contributed to the design of the study, analysis and interpretation of data, and writing and approval of the manuscript.

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REFERENCES

- Arnold, F., & Fawcett, J. T. (1975). *The value of children: A cross-national study*. Washington, D.C.: Educational Resources Information Center.
- Bosson, J. K., & Swann, W. B., Jr. (2009). Self-esteem: Nature, origins, and consequences. In R. Hoyle & M. Leary (Eds.), *Handbook of individual differences in social behavior* (pp. 527–546). New York, NY: Guilford.
- Chang, Y., & Fine, M. A. (2007). Modeling parenting stress trajectories among low-income young mothers across the child's second and third years: Factors accounting for stability and change. *Journal of Family Psychology*, 21(4), 584–594.
- Cho, B. H., Lee, J. S., Lee, H. S., & Kwon, H. K. (1999). Dimensions and assessment of Korean parenting style. *Family and Environment Research*, 37(10), 123–133.

- Choi, H. S., Yeon, E. M., Kwon, S. J., & Hong, Y. J. (2013). A longitudinal relationships among maternal perception of father involvement in child care, value of children, parenting knowledge, and parenting stress. *Korean Journal of Child Care and Education Policy*, 7(2), 21–45.
- Crnic, K. A., Gaze, C. G., & Hoffman, C. (2005). Cumulative parenting stress across the preschool period: Relations to maternal parenting and child behaviour at age 5. *Infant and Child Development*, 14(2), 117–132.
- Fredstrom, B. K., Adams, R. E., & Gilman, R. (2011). Electronic and school-based victimization: Unique contexts for adjustment difficulties during adolescence. *Journal of Youth and Adolescence*, 40(4), 405–415.
- Han, J. W., & Lee, H. (2018). Effects of parenting stress and controlling parenting attitudes on problem behaviors of preschool children: Latent growth model analysis. *Journal of Korean Academy of Nursing*, 48(1), 109–121.
- Jackson, A. P., & Huang, C. C. (2000). Parenting stress and behavior among single mothers of preschoolers: The mediating role of self-efficacy. *Journal of Social Service Research*, 26(4), 29–42.
- Jackson, A. P., & Schemes, R. (2005). Single mothers' self efficacy, parenting in the home environment, and children's development in a two-wave study. *Social Work Research*, 29(1), 7–20.
- Kenny, D. A. (1996). Models of non-independence in dyadic research. *Journal of Social and Personal Relationships*, 13(2), 279–294.
- Kim, K. H., & Kang, H. K. (1997). Development of the parenting stress scale. *Journal of the Korean Home Economics Association*, 35(5), 141–150.
- Lee, J. A., Park, J. E., Chung, H. M., & Yi, S. H. (2017). The structural analysis of parents' emotional value of children, parenting behavior, preschoolers' school readiness, and scholastic competence: The actor-partner interdependence model. *The Journal of Early Childhood Education*, 37(4), 453–477.
- Lee, S. S., Jung, Y. S., Kim, H. K., Choi, E. Y., Park, S. K., Cho, N. H., & Kang, J. H. (2005). *2005 National Survey on dynamics of marriage and fertility*. Seoul: Korea Institute for Health and Social Affairs.
- Magro, S. W., Utesch, T., Dreiskamper, D., & Wagner, J. (2018). Self-esteem development in middle childhood: Support for sociometer theory. *International Journal of Behavioral Development*, 43(2), 118–127.
- Moghaddam, M. F., Validad, A., Rakhshani, T., & Assareh, M. (2017). Child self-esteem and different parenting styles of mothers: A cross-sectional study. *Archives of Psychiatry and Psychotherapy*, 19(1), 37–42.
- Mulsow, M., Caldera, Y. M., Pursley, M., Reifman, A., & Huston, A. C. (2002). Multilevel factors influencing maternal stress during the first three years. *Journal of Marriage and Family*, 64(4), 944–956.
- Ok, K. (2018). The influence of children's values, parent-child interaction, and family cohesion and flexibility on paternal and maternal warmth and control parenting. *Journal of Family Relations*, 23(2), 47–65.
- Ok, K., & Chun, H. Y. (2012). Maternal parenting stress of infants from different income groups: The relative importance of father involvement, the marital relationship, and meanings of parenthood. *Korean Journal of Child Studies*, 33(1), 205–221.
- Park, W. (2015). The mediating effects of rejection sensitivity on relationships between parenting attitude and self-esteem. *Korean Journal of Elementary Education*, 26(3), 237–257.
- Rosenberg, M. (1989). *Society and the adolescent self-image*. Middletown, CT: Wesleyan University Press.
- Shah, J., & Higgins, E. T. (1997). Expectancy x value effects: Regulatory focus as determinant of magnitude and direction. *Journal of Personality and Social Psychology*, 73(3), 447–458.
- Steele, H., Bate, J., Steele, M., Dube, S. R., Danskin, K., Knafo, H., & Murphy, A. (2016). Adverse childhood experiences, poverty, and parenting stress. *Canadian Journal of Behavioural Science*, 48(1), 32–38.
- Steinberg, L., & Darling, N. (2017). Parenting style as context: An integrative model. In *Interpersonal development* (pp. 161–170). London: Routledge.
- Stipek, D., & MacIver, D. (1989). Developmental change in children's assessment of intellectual competence. *Child Development*, 60(3), 521–538.
- Tsaousis, I. (2016). The relationship of self-esteem to bullying perpetration and peer victimization among schoolchildren and adolescents: A meta-analytic review. *Aggression and Violent Behavior*, 31, 186–199.

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