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Effects of Parenting Stress and Controlling Parenting Attitudes on Problem Behaviors of Preschool Children: Latent Growth Model Analysis

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Purpose: This study was conducted to examine the longitudinal effects of parenting stress and parental control attitudes on problem behaviors in preschool children, using a latent growth model. **Methods:** Participants were 1,724 pairs of parents and 1,724 preschool children who had completed the panel survey on Korean children (5th~7th survey panels). **Results:** An analysis of the multivariate latent growth model of parenting stress, parental control attitudes, and children's problem behaviors suggested that the parents' intercepts for parenting stress influenced their intercepts for parental control attitudes (father: β=.21, p<.001; mother: β=.55, p<.001). In addition, the slopes for fathers' parenting stress was the only aspect that affected the slopes for mothers' parental control attitudes (β=.77, p<.001). Moreover, both the intercepts and slopes of parenting stress and parental control attitudes significantly affected the children's problem behaviors. **Conclusion:** This study is significant as it provides longitudinal evidence of the impact of parenting stress and parental control attitudes on children's problem behaviors. The findings suggest that accurately assessing changes in parenting stress and parental control attitudes and developing intervention programs to reduce them will be effective in reducing problem behaviors in children.

Key words: Attitudes; Parenting; Preschool children; Problem behaviors

INTRODUCTION

Preschool is the period during which children develop social skills by engaging in relationships with friends and peers outside of the family, and obtaining the behavior, knowledge, and techniques required to live amongst others. Preschool is also the period in which adaptation to social environments and social and psychological difficulties become prominent [1]. Problem behaviors can occur when children do not adapt appropriately to social life, and can be divided into internalizing and externalizing problem behaviors. Internalizing problem behaviors include overly-restrained behaviors such as social withdrawal and somatic symptoms, such as physical complaints, anxiety, and depression. Externalizing problem behaviors include actions toward others that exhibit a lack of control and are inappropriate, such as aggression and misconduct [2].

Problem behaviors in children extend from their childhood into their adolescence and adulthood [3]. However, preschool children's problem behaviors are often not taken seriously or not appropriately treated, because the expression and symptoms of the behavior are not as prominently displayed as in adolescents [4]. If such behaviors are not adequately addressed, children may develop more serious problems such as running away from home, drug abuse, excessive drinking, suicide, and school violence, which may lead to crimes throughout their adolescence and adulthood [5]. This can be detrimental to society, with direct costs for individuals and social welfare. If problem behaviors that develop in preschool are not treated until adolescence, tremen-

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dous time and effort are required to solve the problems that have been internally developed and habituated from an early age, and treatment is rarely effective [6]. A longitudinal study of preschool children in South Korea reported that those who displayed serious problem behaviors continued to do so in follow-up studies [7]. Another longitudinal study conducted in the Netherlands reported that children who displayed relatively serious problem behaviors in childhood were 4.6 times more likely to develop mental illnesses than other children [8]. Identifying children's problem behaviors at an early stage is thus important to effectively prevent and reduce the development of chronic behavior.

Children's problem behaviors are also socially significant and closely related to parenting attitudes [9,10]. Abidin [6] mentioned that the greatest influence on children's problem behaviors are parenting attitudes, which is influenced by parental stress, the degree of parenting alliance perceived by the parents, and coping methods for managing parenting stress. Parenting stress signifies the psychological burden or pressure that parents experience when raising children: when they experience high stress, positive parenting attitudes tend to decrease and negative ones increase [6,9]. Excessive parenting stress makes parents doubt their roles, which can have a negative influence on children's psychological and emotional states. The children may then exhibit similarly withdrawn or excessive behavior to that of the parents, which can eventually cause the children's problem behavior [11]. In particular, parenting stress and parenting attitudes are influenced by the interaction of both parents [12]; therefore, parenting stress and parenting attitudes need to be analyzed separately from the data of the mother and father.

Overly strict and authoritarian parenting attitudes can cause problem behaviors in children, such as resistance to parents, leading to a vicious cycle in the child-parent relationship that may cause antisocial externalizing behaviors such as physical violence [13]. A study of Belgian children found that parental rejection and controlling attitudes were closely related to children's internalizing problem behaviors, such as depression, and externalizing problem behaviors, such as misconduct and aggression [14]. In a study of mothers from Arabic countries, the children of mothers with controlling parenting attitudes were found to be more likely to display increased levels of internalizing and externalizing behaviors [15]. Parenting attitudes that involve verbal abuse and criticism of children may result in the child feeling rejected, so it is likely that controlling parenting attitudes strongly influence children's problem behaviors. Hostility and irrational parenting attitudes can also hinder children's positive development because they form negative representations of their parents, which not only increase their externalizing problem behaviors but also have long-term negative effects [16].

Children's problem behaviors cannot be measured by identifying parenting stress and parenting attitudes at specific points, but must be approached based on changes over time. However, most previous research on children's problem behaviors, and on parenting stress and parenting attitudes, has measured the concept at specific points in time [1]. Studies using cross-sectional data sets have found that it is difficult to comprehend how parenting stress and attitudes change over time and with changes in the children's age. Most cross-sectional research has emphasized the importance of studying aspects of behavior and individual differences that change over time [10,17,18]. As the parent-child relationship lasts for a lifetime and the qualities of such relationships have strong long-term and progressive influences [19], it is particularly important to observe the effects of parenting stress and controlling parenting attitudes on the problem behaviors of children over the long-term.

From this perspective, the latent growth model estimates the change trajectory of an individual at a certain point of time based on repeated measurement data, and the individual initial estimates of the changes are collected to calculate the average initial value, the rate of change, and the individual difference. The model can also verify the relationships among changes in several variables of interest. Associating the starting point (initial value) of the variable of interest and the rate of change (slope) is extremely useful. The latent growth model improves on cross-sectional models that verify the indirect effects of parameters in the relationship between independent variables and dependent variables, as it explains how independent variables are related to the changes in the parameters and the dependent variables [20]. The effect of parenting stress and controlled parenting attitudes on children's problem behaviors should be examined from a long-term viewpoint. Confirming the relationships among variables using the latent growth model is thus more meaningful.

Therefore, this study aims to identify how parenting stress and

controlling parenting attitudes influence the problem behaviors of preschool children. The latent growth model allows the changing influences over time to be identified and provides preliminary data for the development of parent and children programs that can help prevent problem behaviors in children.

1. Purpose of the study

This study aimed to determine the longitudinal relationships between parenting stress, controlling parenting attitudes, and children's problem behaviors, in parents and preschool children who participated in a panel study on Korean children. The specific objectives were as follows: 1) check the longitudinal relationships between parental stress and controlling parenting attitudes and the growth trajectories of problem behaviors in children; and 2) check the mediating effects of controlling parenting attitudes in the longitudinal relationship between parenting stress and children's problem behaviors.

Parenting stress and controlled parenting attitude were specifically addressed, and specific research hypotheses were proposed for identifying their longitudinal relationship with the development trajectory (initial value and rate of change) of children's problem behaviors, as follows.

Hypothesis 1. The developmental trajectory of a father's parenting stress will affect the developmental trajectory of the father's controlling parenting attitude.

Hypothesis 2. The development trajectory of a mother's parenting stress will affect the development trajectory of the father's controlled parenting attitude.

Hypothesis 3. The developmental trajectory of a father's parenting stress will affect the developmental trajectory of the mother's controlled parenting attitude.

Hypothesis 4. The development trajectory of a mother's parenting stress will affect the development trajectory of the mother's controlling parenting attitude.

Hypothesis 5. The developmental trajectory of a father's parenting stress will affect the developmental trajectory of the children's internalizing problem behavior.

Hypothesis 6. The development trajectory of a mother's parenting stress will affect the development trajectory of the children's internalizing problem behavior.

Hypothesis 7. The developmental trajectory of a father's parenting stress will affect the developmental trajectory of the children's externalizing problem behavior.

Hypothesis 8. The development trajectory of a mother's parenting stress will affect the development trajectory of the children's externalizing problem behavior.

Hypothesis 9. The developmental trajectory of a father's controlling parenting attitude will affect the developmental trajectory of the children's internalizing problem behavior.

Hypothesis 10. The development trajectory of a mother's controlling parenting attitude will affect the development trajectory of the children's internalizing problem behavior.

Hypothesis 11. The developmental trajectory of a father's controlling parenting attitude will affect the developmental trajectory of the children's externalizing problem behavior.

Hypothesis 12. The development trajectory of a mother's controlling parenting attitude will affect the development trajectory of the children's externalizing problem behavior.

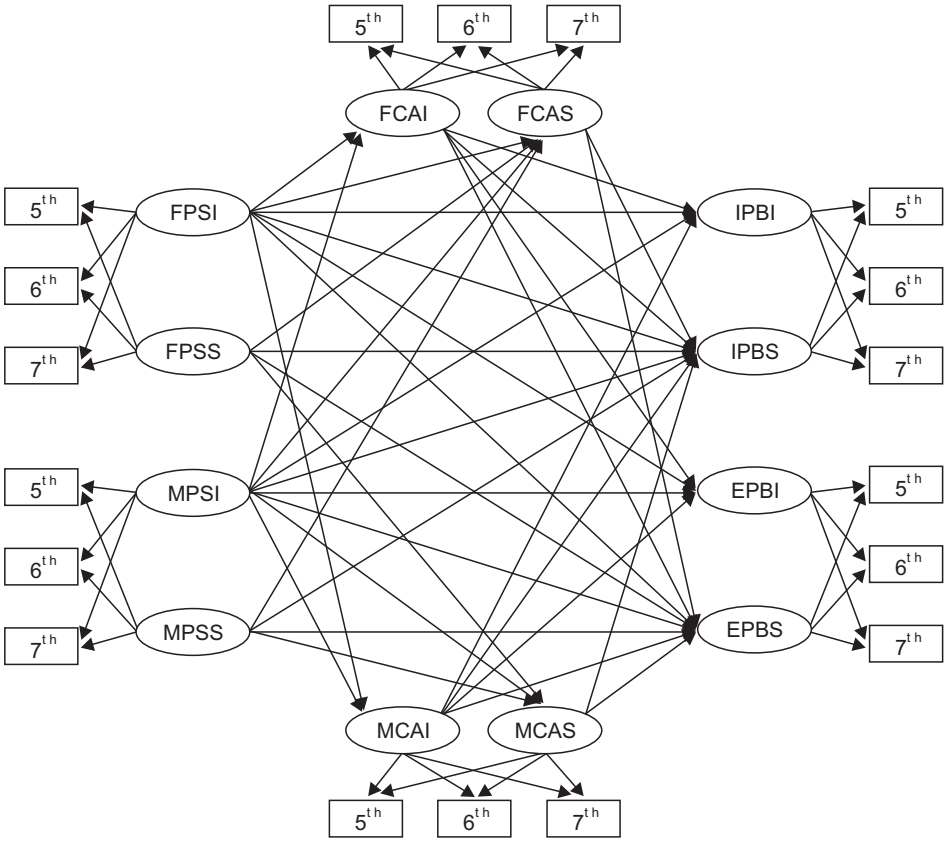
METHODS

1. Research design

This study is a longitudinal secondary data analysis to study the relationship between longitudinal growth trajectories of parenting stress, controlling parenting attitudes, and problem behaviors of preschool children and each factor of the growth trajectories using data from the 5th (2012) to 7th (2014) panel studies on Korean children (Figure 1).

2. Research participants

The data provided by the panel surveys of Korean children (Korea Institute of Child Care and Education) used in this study was obtained by investigating children born in 2008, their parents, and regional community environments. In this study, the participants were parents over 20 years of age who participated in the 5th (2012) to 7th (2014) panel surveys and completed the mothers' and fathers' surveys, and their children. The panel surveys of Korean children conducted at the Korean Institute of Child Care and Education selected all families with infants born between April to July 2008 based on samples from medical facilities with over 500 annual deliveries in 2006, excluding those who did not fit the selection criteria of the study and those who re-



FPSI=Father's parenting stress intercept; FPSS=Father's parenting stress slope; MPSI=Mother's parenting stress intercept; MPSS=Mother's parenting stress slope; FCAI=Father's controlling attitude intercept; FCAS=Father's controlling attitude slope; MCAI=Mother's controlling attitude intercept; MCAS=Mother's controlling attitude slope; IPBI=Internalizing problem behavior intercept; IPBS=Internalizing problem behavior slope; EPBI=Externalizing problem behavior intercept; EPBS=Externalizing problem behavior slope; 5^{th}=5^{th} survey panel; 6^{th}=6^{th} survey panel; 7^{th}=7^{th} survey panel.

Figure 1. Research model.

fused participation, resulting in 2,562 families who were willing to participate. Among them, 2,150 families with newborns were selected as final samples. Samples of panels of Korean children were selected using a stratified multi-stage sampling method. In the first step, a nationwide medical center that delivered newborns was selected. In the second step, families with newborns from the selected medical facility were extracted as pilot samples. In the third step, samples were constructed by including families among the pilot samples that were willing to participate. The "panel study on Korean children" consists of characteristics of the child, parent, family, school, community, and child care support policy, and the participants were mother, father, child, and teacher. The survey was conducted using a structured questionnaire, using trained interviewers from a professional survey company. Data were collected through direct visits, telephone surveys, and mail surveys. The research teams of the "panel study on Korean children" used the structured questionnaire, which had been shown to be valid and reliable in previous studies. In this research, participants who participated in all 5^{th}~7^{th} panel surveys were selected, and when retention rates were confirmed for sample validity, the 5^{th} panel survey (2012) was 79.2%, the 6^{th} panel survey (2013) was 77.3%, and the 7^{th} panel survey (2014) was 75.3% among the entire sample from 2008. In this research, 1,724 pairs of parents who participated in all panel surveys and mothers' and fathers' surveys and 1,724 children who participated in the children surveys were selected as the final participants of the present study.

3. Measurement

1) Parenting stress

Parenting stress in the panel survey on Korean children was measured using an assessment tool developed by Kim & Kang [21], which has been revised and corrected to fit the purpose of the panel survey on Korean children with a total of 11 questions (3 subordinate factors: daily stress due to parenting, pressure and destress about carrying out parental roles, and guilt about non-parental care). Each question was scored on a 5-point scale: strongly disagree (1), somewhat disagree (2), moderate (3), somewhat agree (4), and strongly agree (5). A higher score signifies higher parenting-related stress. The reliability coefficient of the research by Kim & Kang [21] was Cronbach's alpha .88, and in this study, it was Cronbach's alpha .85.

2) Parenting attitudes

Parenting attitudes in the panel survey on Korean children was measured using an assessment tool developed by Cho et al. [22] that has been revised and corrected to fit the purpose of the panel survey on Korean children with a total of 15 questions (2 subordinate factors: controlling parenting, compassionate parenting), and among these, 8 questions about controlling parenting were used. Each question was scored on a 5-point scale of strongly disagree (1), somewhat disagree (2), moderate (3), somewhat agree (4), and strongly agree (5). A higher score signifies a higher controlling parenting attitude. The reliability coefficient of the research by Cho et al. [22] was Cronbach's alpha .81, and in this study, it was Cronbach's alpha .84.

3) Problem behaviors

In the panel survey on Korean children, problem behaviors only consisted of behavior assessment scales from the child behavior checklist (CBCL) developed by Oh & Kim [23], which contains a total of 100 questions (8 subordinate factors: 7 syndrome scales, 1 other scale). The syndrome scales are classified into internalizing problem behavior, externalizing problem behavior, and overall problem behavior. Such internalizing and externalizing questions were used to appropriately fit the purpose of this research. Internalizing problems are overly restrained behaviors such as passive and discouraged behaviors, emotional instability, and somatic symptoms while externalizing problems signify attention problems, such as aggressive and uncontrollable behaviors (attention-deficit problems, aggressive behaviors). Each question was scored on a 3-point scale of does not apply at all (0), happens sometimes or tend to be that way (1), and happens often or a lot (2). A higher score signifies more serious problem behaviors. The reliability coefficient of the research by Oh & Kim [23] was Cronbach's alpha .77~.86, and in this study, it was Cronbach's alpha .79~82.

4. Ethical consideration

The panel study was conducted in accordance with the process of the Institutional Bioethics Committee of the Child Rearing Policy Institute. In this study, data were provided after deliberation, and the research was conducted after receiving deliberative process exemption (1040271-201707-HR-015) from the Institutional Review Board (IRB) institution of C University.

5. Data Analysis

The study data were received through the panel homepage on Korean children (http://panel.kicce.re.kr) operated by the Korea Institute of Child Care and Education. Sensitive data that may have exposed personal information were deleted before the data was provided. Data analysis was conducted using longitudinal weight recommended by the panel on Korean children, and the details are as follows. This study conducted an analysis of data, applying the longitudinal weighted value suggested by the Korean children and youth panel survey. In order to observe general characteristics of the participants, SPSS WIN 18.0 was used to conduct frequency analysis and descriptive statistics. After the validity of the scales were verified, reliabilities of the parenting stress, controlling parenting attitudes, and problem behavior scales were verified using Cronbach's α values. In order to use the Full Information Maximum Likelihood (FIML), which is a parameter estimation method that considers missing values of the analyzed data, skewness and kurtosis were found by verifying the normality of the data, and it was confirmed that they each met the requirement of being below 3 and below 10 [24]. A structural model was constructed using latent growth modeling (LGM) by using AMOS 17.0 to confirm the correlations between variables; to confirm multicollinearity of the variables; and to

detect the changing aspects in parenting stress, controlling parenting attitudes, and problem behaviors over time. Significance of intercepts and slopes of participants' changing aspects in parenting stress, controlling parenting attitudes, and problem behaviors over time were confirmed in an unconditional model, and the optimum model was selected by comparing the model fitness of the unconditional model and linear model. Model fitness confirmed Chi-square, Normed fit index (NFI ≥.90), Relative fit index (RFI), incremental fit index (IFI), Tucker Lewis Index (TLI), comparative fit index (CFI ≥.90), Root mean square error of approximation (RMSEA ≤.10), etc [24]. Moreover, in order to confirm the correlations of growth trajectories between the factors, effects of influence factors on intercepts and slopes of depression were confirmed through a significance test of path coefficients in the conditional model, and ultimately, bootstrapping was conducted to confirm the mediator effects of controlling parenting attitudes between parenting stress and problem behaviors.

RESULTS

1. General characteristics of the participants

Among the children, there were 887 males (51.5%) and 837 (48.5%) females, and the mean age of the fathers was 37.01 years and that of mothers was 34.80 years. The overall highest level of education was college graduation completed by 720 fathers (41.8%) and 645 mothers (37.5%). Majority of the fathers worked as white-collar worker (420 [24.4%]) and mothers were homemakers, including those who were unemployed (1054 [61.2%]). The overall length of marriage was 95.81 months.

2. Correlations and changes in each factor by time

In this study, calculating the means of each factor to evaluate the changing aspects of each factor by time revealed that parenting stress and problem behaviors of children gradually decrease with time. Additionally, checking the skewness and kurtosis to verify the normality of each factor revealed that absolute values of skewness did not exceed 3 for all factors and that the normality assumption was met since absolute values of kurtosis did not exceed 10. However, multivariate kurtosis showed a multivariate kurtosis index of 11.58, which did not satisfy the assumption of normal distribution. In this study, the maximum likelihood method was used for parameter estimation. This is one of the most widely used parameter estimation methods and assumes multivariate normal distribution of sample data. However, there is not enough data to meet these assumptions, and bootstrapping is free from these assumptions and is therefore useful for analyzing data outside of multivariate normality. In addition, according to Hoyle [25], the maximum likelihood method, which is relatively unaffected by violating the normal distribution assumption, is preferable to other parameter estimation methods. Therefore, this study uses the bootstrapping method to produce more stable results. All correlations between factors were found to be significant at a significance level of .05 (Table 1).

3. Latent growth model for each factor and goodness-of-fit test

As a result of the goodness-of-it test of no growth and linear models to verify if the changing aspects were statically significant for each factor and to identify the optimum model for the changing tendencies, parenting stress of the fathers (χ^2=3.57, df=3, NFI=.99, RFI=.99, IFI=.99, TLI=.99, CFI=.99, RMSEA=.01), parenting stress of the mothers (χ^2=2.51, df=3, NFI=.99, RFI=.98, IFI=.99, TLI=.99, CFI=.98, RMSEA=.01), controlling parenting attitude of the fathers (χ^2=5.78, df=3, NFI=.96, RFI=.96, IFI=.97, TLI=.97, CFI=.97, RMSEA=.04), controlling parenting attitude of the mothers (χ^2=6.78, df=3, NFI=.97, RFI=.97, IFI=.97, TLI=.97, CFI=.97, RMSEA=.04), internalizing problem behaviors of children (χ^2=4.40, df=3, NFI=.97, RFI=.97, IFI=.97, TLI=.97, CFI=.97, RMSEA=.05), and externalizing problem behaviors of children (χ^2=6.90, df=3, NFI=.96, RFI=.96, IFI=.95, TLI=.95, CFI=.96, RMSEA=.02) were all found to be appropriate for linear models.

4. Estimation of growth trajectories for each factor

Mean intercepts for each factor of the fathers were found to be 2.43 (p<.001) for parenting stress and 3.24 (p<.001) for controlling parenting attitudes. Variance intercepts were found to be 2.43 (p<.001) for parenting stress and 3.24 (p<.001) for controlling parenting attitudes, which dismiss the theory that mean intercept for each factor is 0; it was found to be statistically significant that the intercept for each factor differs from another. Mean slopes were found to be −0.06 (p<.001) for parenting stress and −0.18

Table 1. Correlations and Changes in Each Factor by Time (*N*=1,724)

Variables	M (SD)	Skewness (SE)	Kurtosis (SE)	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18
X1= Father's parenting stress 5th	2.43 (0.56)	0.04 (0.05)	0.22 (0.11)	1																	
X2= Father's parenting stress 6th	2.39 (0.57)	0.05 (0.05)	0.31 (0.11)	.49*	1																
X3= Father's parenting stress 7th	2.37 (0.55)	−0.03 (0.05)	0.29 (0.11)	.46*	.52*	1															
X4= Mother's parenting stress 5th	2.75 (0.62)	0.03 (0.05)	0.23 (0.11)	.41*	.31*	.24*	1														
X5= Mother's parenting stress 6th	2.65 (0.58)	0.06 (0.05)	0.52 (0.11)	.32*	.43*	.26*	.62*	1													
X6= Mother's parenting stress 7th	2.57 (0.57)	0.16 (0.05)	0.68 (0.11)	.28*	.33*	.38*	.55*	.60*	1												
X7= Father's controlling attitude 5th	3.42 (0.56)	−0.08 (0.05)	0.24 (0.11)	.11*	.28*	.39*	.34*	.29*	.29*	1											
X8= Father's controlling attitude 6th	3.30 (0.58)	−0.07 (0.05)	0.57 (0.11)	.14*	.22*	.37*	.36*	.36*	.32*	.21*	1										
X9= Father's controlling attitude 7th	3.25 (0.51)	−0.09 (0.05)	0.75 (0.11)	.19*	.40*	.51*	.35*	.29*	.34*	.26*	.20*	1									
X10= Mother's controlling attitude 5th	3.50 (0.44)	−0.28 (0.05)	0.66 (0.11)	.17*	.16*	.20*	.23*	.25*	.28*	.24*	.22*	.42*	1								
X11= Mother's controlling attitude 6th	3.45 (0.47)	−0.13 (0.05)	0.71 (0.11)	.15*	.29*	.28*	.29*	.20*	.20*	.20*	.23*	.45*	.58*	1							
X12= Mother's controlling attitude 7th	3.36 (0.44)	−0.31 (0.05)	1.72 (0.11)	.13*	.28*	.21*	.22*	.22*	.25*	.21*	.23*	.43*	.54*	.53*	1						
X13= Child's internalizing problem behavior 5th	0.23 (0.17)	1.10 (0.05)	1.65 (0.11)	.23*	.25*	.29*	.35*	.36*	.42*	.21*	.20*	.22*	.33*	.12*	.22*	1					
X14= Child's internalizing problem behavior 6th	0.20 (0.16)	1.53 (0.05)	2.87 (0.11)	.22*	.30*	.31*	.33*	.46*	.49*	.22*	.25*	.22*	.14*	.15*	.15*	.51*	1				
X15= Child's internalizing problem behavior 7th	0.18 (0.15)	1.15 (0.05)	2.36 (0.11)	.13*	.32*	.38*	.32*	.38*	.53*	.20*	.26*	.23*	.11*	.16*	.14*	.48*	.58*	1			
X16= Child's externalizing problem behavior 5th	0.32 (0.23)	0.79 (0.05)	0.37 (0.11)	.24*	.37*	.31*	.30*	.37*	.47*	.21*	.24*	.13*	.13*	.10*	.13*	.70*	.37*	.35*	1		
X17= Child's externalizing problem behavior 6th	0.26 (0.21)	1.11 (0.05)	1.27 (0.11)	.28*	.30*	.36*	.36*	.47*	.57*	.22*	.23*	.19*	.15*	.11*	.16*	.39*	.72*	.45*	.53*	1	
X18= Child's externalizing problem behavior 7th	0.23 (0.20)	1.34 (0.05)	2.36 (0.11)	.25*	.26*	.40*	.35*	.42*	.52*	.20*	.24*	.14*	.12*	.19*	.13*	.36*	.43*	.72*	.49*	.60*	1

M=Mean; SD=Standard deviation; SE=Standard error.
*p<.05.

(p<.001) for controlling parenting attitudes, which underscore that parenting stress and controlling attitudes decrease each year and the variance of slopes was found to be 0.05 (p<.001) for parenting stress and 0.05 (p<.001) for controlling parenting attitudes, indicating that slopes also have individual differences. Moreover, parenting stress and controlling attitudes were found to each have correlation coefficients for the intercept and slope of −.01 (p<.05) and −.03 (p<.05).

Mean intercepts for each factor of mothers were found to be 2.76 (p<.001) for parenting stress and 3.37 (p<.001) for controlling parenting attitudes, and variance intercepts were found to be 0.27 (p<.001) for parenting stress and 0.13 (p<.001) for controlling parenting attitudes, dismissing the theory that the mean intercept for each factor is 0. The individual differences between the intercepts of each factor were found to be statistically significant. Mean slopes have been found to decrease each year with

−0.19 (p<.001) for parenting stress and −0.13 (p<.001) for controlling parenting attitudes, while parenting stress and controlling parenting attitudes were found to decrease, and variance slopes were found to be 0.07 (p<.001) for parenting stress and 0.02 (p<.001) for controlling parenting attitudes, indicating that slopes also have individual differences. Moreover, parenting stress and controlling attitudes were found to each have correlation coefficients for the intercept and slope of −.07 (p<.05) and −.02 (p<.05).

Mean intercepts for each factor of the children were found to be 0.23 (p<.001) for internalizing problem behaviors and 0.32 (p<.001) for externalizing problem behaviors, dismissing the theory that mean intercept for each factor is 0; individual differences between the intercepts of each factor were found to be statistically significant. Mean slopes were found to be −0.05 (p<.001) for internalizing problem behaviors and −0.09 (p<.001) for externalizing problem behaviors, which underscore that internalizing and externalizing problem behaviors' decrease each year. Variance of slopes was found to be 0.01 (p<.001) for internalizing problem behaviors and 0.01 (p<.001) for controlling parenting attitudes, which indicates that slopes also have individual differences. Moreover, internalizing and externalizing problem behaviors of children were found to each have correlation coefficients for the intercept and slope of −.01 (p<.05) and −.02 (p<.05) (Table 2).

5. Analysis of latent growth models of parenting stress, controlling parenting attitudes, and problem behaviors of children

After controlling for the marriage satisfaction of couples, depression, and temperaments of the children, which were confirmed to be factors that affect parenting stress, goodness-of-fit of the model to confirm the longitudinal relationships between the factors was found to be χ^2=225.52, df=93, NFI=.96, RFI=.95, IFI=.96, TLI=.96, and CFI=.97. The results of Hypotheses 1~4 indicated that the initial value of parenting stress affects initial parenting attitudes during the development trajectory of parenting stress. However, only the father's parenting stress had a significant effect on the change in the mother's controlling parenting attitudes. In addition, the results of Hypotheses 5~12 indicated that the developmental trajectories of parental stress and that of controlled parenting attitude had a statistically significant effect on the development trajectory of children's internalizing and externalizing problem behaviors (Table 3). Bootstrapping to confirm the mediator effects of controlling parenting attitudes between parenting stress and problem behaviors of children revealed that

Table 2. Estimation of Growth Trajectories for Each Factor

Parameter	M (SE)	Variance (SE)
Father's parenting stress intercept	2.43 (0.01)**	0.15 (0.01)**
Father's parenting stress slope	−0.06 (0.01)**	0.05 (0.02)**
Father's parenting stress intercept-slope coefficient	−.01*	
Mother's parenting stress intercept	2.76 (0.02)**	0.27 (0.01)**
Mother's parenting stress slope	−0.19 (0.01)**	0.07 (0.01)**
Mother's parenting stress intercept-slope coefficient	−.07*	
Father's controlling attitude intercept	3.24 (0.01)**	0.16 (0.01)**
Father's controlling attitude slope	−0.18 (0.01)**	0.05 (0.02)**
Father's controlling attitude Intercept-slope coefficient	−.03*	
Mother's controlling attitude intercept	3.37 (0.01)**	0.13 (0.01)**
Mother's controlling attitude slope	−0.13 (0.01)**	0.02 (0.01)**
Mother's controlling attitude intercept-slope coefficient	−.02*	
Child's internalizing problem behavior intercept	0.23 (0.01)**	0.02 (0.01)**
Child's internalizing problem behavior slope	−0.05 (0.01)**	0.01 (0.01)**
Child's internalizing problem behavior intercept-slope coefficient	−.01*	
Child's externalizing problem behavior intercept	0.32 (<0.01)**	0.03 (0.01)**
Child's externalizing problem behavior slope	−0.09 (<0.01)**	0.01 (0.01)**
Child's externalizing problem behavior intercept-slope coefficient	−.02*	

M=Mean; SE=Standard error.
*p<.05, **p<.001.

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Table 3. The Results from a Latent Growth Model on Parenting Stress, Parental Control Attitudes, Children's Problems Behaviors

Independent variables		Dependent variables	β	B	SE	CR	*p*
H1: Father's parenting stress intercept	→	Father's controlling attitude intercept	.21	.16	0.21	5.66	<.001
H1: Father's parenting stress intercept	→	Father's controlling attitude slope	−.50	−.73	0.71	−1.02	.307
H1: Father's parenting stress slope	→	Father's controlling attitude slope	.39	.56	0.88	1.14	.254
H2: Mother's parenting stress intercept	→	Father's controlling attitude intercept	.32	.29	0.21	6.16	<.001
H2: Mother's parenting stress intercept	→	Father's controlling attitude slope	−.49	−.73	0.72	−1.01	.311
H2: Mother's parenting stress slope	→	Father's controlling attitude slope	.15	.45	0.94	1.22	.222
H3: Father's parenting stress intercept	→	Mother's controlling attitude intercept	.48	.39	0.22	6.30	<.001
H3: Father's parenting stress intercept	→	Mother's controlling attitude slope	−.42	.49	−0.19	−0.48	.634
H3: Father's parenting stress slope	→	Mother's controlling attitude slope	.77	.68	0.18	2.25	.024
H4: Mother's parenting stress intercept	→	Mother's controlling attitude intercept	.55	.48	0.22	6.57	<.001
H4: Mother's parenting stress intercept	→	Mother's controlling attitude slope	−.48	−.11	0.18	−0.57	.569
H4: Mother's parenting stress slope	→	Mother's controlling attitude slope	.46	.48	0.28	1.67	.094
H5: Father's parenting stress intercept	→	Child's internalizing problem behavior intercept	.27	.31	0.15	7.08	<.001
H5: Father's parenting stress intercept	→	Child's internalizing problem behavior slope	−.14	−.26	0.09	−2.72	.006
H5: Father's parenting stress slope	→	Child's internalizing problem behavior slope	.21	.42	0.32	3.70	<.001
H6: Mother's parenting stress intercept	→	Child's internalizing problem behavior intercept	.11	.26	0.15	8.44	<.001
H6: Mother's parenting stress intercept	→	Child's internalizing problem behavior slope	−.15	−.28	0.09	−3.05	.002
H6: Mother's parenting stress slope	→	Child's internalizing problem behavior slope	.22	.39	0.10	3.77	<.001
H7: Father's parenting stress intercept	→	Child's externalizing problem behavior intercept	.26	.40	0.20	7.01	<.001
H7: Father's parenting stress intercept	→	Child's externalizing problem behavior slope	−.15	−.36	0.11	−3.06	.002
H7: Father's parenting stress slope	→	Child's externalizing problem behavior slope	.39	.48	0.37	3.99	<.001
H8: Mother's parenting stress intercept	→	Child's externalizing problem behavior intercept	.31	.17	0.20	8.49	<.001
H8: Mother's parenting stress intercept	→	Child's externalizing problem behavior slope	−.16	−.39	0.11	−3.43	<.001
H8: Mother's parenting stress slope	→	Child's externalizing problem behavior slope	.23	.51	0.12	4.00	<.001
H9: Father's controlling attitude intercept	→	Child's internalizing problem behavior intercept	.53	.22	0.04	5.53	<.001
H9: Father's controlling attitude intercept	→	Child's internalizing problem behavior slope	−.30	−.06	0.01	−4.05	<.001
H9: Father's controlling attitude slope	→	Child's internalizing problem behavior slope	.44	.56	0.16	3.46	<.001
H10: Mother's controlling attitude intercept	→	Child's internalizing problem behavior intercept	.50	.21	0.05	4.30	<.001
H10: Mother's controlling attitude intercept	→	Child's internalizing problem behavior slope	−.36	−.07	0.01	−4.16	<.001
H10: Mother's controlling attitude slope	→	Child's internalizing problem behavior slope	.72	.60	0.18	3.23	<.001
H11: Father's controlling attitude intercept	→	Child's externalizing problem behavior intercept	.47	.27	0.05	5.03	<.001
H11: Father's controlling attitude intercept	→	Child's externalizing problem behavior slope	−.32	−.08	0.01	−4.15	<.001
H11: Father's controlling attitude slope	→	Child's externalizing problem behavior slope	.41	.68	0.20	3.36	<.001
H12: Mother's controlling attitude intercept	→	Child's externalizing problem behavior intercept	.54	.31	0.06	4.67	<.001
H12: Mother's controlling attitude intercept	→	Child's externalizing problem behavior slope	−.41	−.10	0.02	−4.42	<.001
H12: Mother's controlling attitude slope	→	Child's externalizing problem behavior slope	.65	.71	0.22	3.21	<.001

χ^2=225.52, df=93, p<.001, χ^2/df=2.425, NFI=.96, RFI=.95, IFI=.96, TLI=.96, CFI=.97, RMSEA=.05, H=Hypothesis; β=Standardized regression weights; B=Regression weights; SE=Standardized error; CR=Critical ratio.

only changes in the parenting stress of mothers and internalizing and externalizing problem behaviors of children did not have any mediator effects on parenting attitudes (Table 4).

DISCUSSION

In this study, the longitudinal growth trajectories of the problem behaviors of children were analyzed, along with the parenting stress and attitudes of parents of preschool children, using data from the fifth to seventh panels of the study of Korean children. The research results and the related managerial implications are as follows.

First, examination of the growth trajectories of each factor in this study revealed that parenting stress differed between individuals and decreased over time. These results are similar to those of a study of American mothers [17], in which a group of

Table 4. Standardized Direct, Indirect, and Total Effects of the Hypothesized Model

Independent variables		Dependent variables	Direct effect	*p*	Indirect effect	*p*	Total effect	*p*
Father's parenting stress intercept	→	Child's internalizing problem behavior intercept	.27	<.001	.18	<.001	.45	<.001
Father's parenting stress intercept	→	Child's internalizing problem behavior slope	−.14	.006	−.32	<.001	−.46	<.001
Father's parenting stress slope	→	Child's internalizing problem behavior slope	.21	<.001	.11	.030	.32	.022
Mother's parenting stress intercept	→	Child's internalizing problem behavior intercept	.11	<.001	.38	<.001	.49	<.001
Mother's parenting stress intercept	→	Child's internalizing problem behavior slope	−.15	.002	−.29	<.001	−.44	<.001
Mother's parenting stress slope	→	Child's internalizing problem behavior slope	.22	<.001	.21	.137	.22	.008
Father's parenting stress intercept	→	Child's externalizing problem behavior intercept	.26	<.001	.37	<.001	.62	<.001
Father's parenting stress intercept	→	Child's externalizing problem behavior slope	−.15	.002	−.26	<.001	−.41	<.001
Father's parenting stress slope	→	Child's externalizing problem behavior slope	.39	<.001	.19	.037	.58	.028
Mother's parenting stress intercept	→	Child's externalizing problem behavior intercept	.31	<.001	.25	<.001	.56	<.001
Mother's parenting stress intercept	→	Child's externalizing problem behavior slope	−.16	<.001	−.21	<.001	−.37	<.001
Mother's parenting stress slope	→	Child's externalizing problem behavior slope	.23	<.001	.15	.136	.23	.009

mothers with chronic parenting stress exhibited individual differences in stress. Another study [18] of American preschool children reported that parenting stress decreased as children became older. This suggests that parents tend to assess the difficulty of child-rearing as higher in the postnatal and early childhood period, when activity gradually increases, and parents are still acquiring their parenting methods. However, as children transition from the postnatal and early childhood period to the preschool period, parenting stress gradually decreases because the level of communication and role sense increase between parents and children. However, as parenting stress shows individual differences and progresses rapidly with time, particularly for parents with low intercepts of parenting stress, the regulation of early stress and individual approaches are considered significant. Controlling parenting attitudes differ between individuals and generally decrease over time, and the results of this research are similar to those of a previous study [26] of parenting attitudes. Although numerous factors can cause changes in parenting attitudes, parental stress is recognized as a significant influence, which suggests that individual differences occur due to decreases in parenting stress in relation to parenting attitudes. However, similar to parenting stress, controlling parenting attitudes exhibited individual differences. The slope progressed rapidly over time for parents with low intercepts of controlling parenting attitudes, and it is thus important to adopt an individual approach to parenting stress and attitudes after understanding the precise individual intercept values.

Children's problem behaviors indicated individual differences and tended to decrease with time. Similar results were found in a study conducted for Korean preschool children between the ages of three and five. The children's problem behaviors indicated individual differences [27], and problem behavior decreased with age [18]. Such results are assumed to be due to the parents assessing that children's problem behaviors decrease as they develop emotional control and delayed gratification with age, as does negotiation with adults, and their needs are expressed verbally as linguistic competence develops. However, this study demonstrates that accurately understanding the individual intercept values of children before developing interventions is necessary, because the slopes of internalizing and externalizing problem behaviors rapidly increased with time for children who initially had low degrees of internalizing and externalizing problem behaviors at the intercepts. Early interventions using appropriate diagnoses are necessary for children at risk of emotional problem behaviors, because if the behavior begins in the preschool period, it can severely worsen and manifest in different forms over time, increasing the children's probability of risking social maladjustment [3,8].

Second, by analyzing the multivariate latent growth model of parenting stress, controlling parenting attitudes, and children's problem behavior, parents' intercepts in parenting stress also affected their intercepts in controlling parenting attitudes, and the slope of the fathers' parenting stress was the only factor affecting the slopes of the mothers' controlling parenting attitudes. These results are similar to those of a cross-sectional study of Korean

mothers with infants, in which positive parenting attitudes were found to rapidly decrease with rapid increase in parenting stress [28]. Such results become factors in determining parenting stress and attitudes perceived by the parents, as parenting stress causes parents to be doubtful about their roles, and they exhibit increased tendencies of excessive behavior toward their children to resolve the situations facing them [10]. In this study, it was found that mothers' controlling attitudes were affected more by the fathers' parenting stress than by changes in their own parenting stress. This is similar to a cross-sectional study of Korean parents in which the fathers' parenting participation, values about children, and parenting knowledge influenced the mothers' parenting stress [29]. Research has shown that parenting stress affects the determinants of parenting attitudes, such as couples' parenting cooperation and stress-coping methods and how such factors rebound to affect parenting attitudes [6]. Therefore, it can be assumed that these results are due to the fathers' parenting stress affecting the determinants of the mothers' parenting attitudes. Therefore, although regulation of parents' individual intercepts is important in controlling parenting stress, regulating parenting stress with long-term rather than short-term plans by viewing parents as one entity, as opposed to individual units, can be an effective method of decreasing controlling parenting attitudes.

The internalizing and externalizing problem behaviors of children were also found to be significantly influenced by the intercept and slope values of parenting stress and controlling parenting attitudes. These results are similar to those of a study with American preschool children, in which children displayed more problems related to peers and emotions as their mothers had higher parenting stress [1], and to research with Korean adolescents, in which externalizing problem behavior was found to increase with an increase in the mothers' controlling parenting attitudes [30]. Another study found that excessive parenting stress affected parents' psychological and emotional states, such as depression, and these states led to inappropriate interactions between the parents and children [11]. This can be the case particularly for preschool children, for whom interaction with parents is important, as they are negatively affected in terms of adjustment and development by a parent's unstable psychological and emotional states. In addition, overly strict and authoritarian parenting attitudes can cause problem behaviors in children such as resistance, and such resistance leads to vicious cycles in their relationships with their parents, which can manifest as antisocial externalizing problem behaviors such as violence [13]. Therefore, appropriate education and intervention programs should be applied by taking parents as one unit, in addition to considering the children, to decrease their problem behaviors. Long-term approaches and interventions for parents and children are necessary, because the problem behaviors of children change according to changes in parenting stress and controlling parenting attitudes.

As the intercepts and slopes of the fathers' parenting stress were found to influence the problem behaviors of children as mediators of controlling parenting attitudes, activities and organized approaches related to fathers' parenting stress and slopes can help in addressing children's problem behaviors.

Suggestions for future research are as follows. First, thorough analyses are necessary regarding the direct and indirect effects of various variables that influence parenting stress and attitudes on parenting attitudes. Second, because the changes were verified over a period of three years, using the 5^{th}~7^{th} panels on Korean children, future in-depth research is suggested for analyses that more comprehensively examine the correlations and causalities of how parenting stress changes and parenting attitudes are affected according to the children's preschool and postnatal periods by exploring documents from more perspectives, since parenting stress and attitudes are predicted to be different between preschool and postnatal periods.

CONCLUSION

This study longitudinally interpreted the effects of parenting stress and controlling parenting behavior on the problem behaviors of preschool children using a latent growth model. This study's significance is that it longitudinally confirms the growth trajectories of parenting stress, controlling parenting attitudes, and problem behaviors of children using national data. To analyze parenting stress and parenting attitudes, changing aspects must be examined from a longitudinal perspective, rather than by interpreting the values at certain points in time. Therefore, it is important to precisely measure the changing aspects of parenting stress and parenting attitudes during the process of children be-

coming healthy adults and members of society, and it is necessary to establish community facilities and allocate professionals who can regularly check parents' emotional states after children's birth. Parenting stress is expected to decrease along with improvements in parenting attitudes if intervention programs are applied to help reduce the stress.

CONFLICTS OF INTEREST

The authors declared no conflict of interest.

REFERENCES

1. Anthony LG, Anthony BJ, Glanville DN, Naiman DQ, Waanders C, Shaffer S. The relationships between parenting stress, parenting behaviour and preschoolers' social competence and behaviour problems in the classroom. Infant and Child Development. 2005;14(2):133-154. https://doi.org/10.1002/icd.385
2. Achenbach TM, Edelbrock CS. The classification of child psychopathology: A review and analysis of empirical efforts. Psychological Bulletin. 1978;85(6):1275-1301. https://doi.org/10.1037/0033-2909.85.6.1275
3. Huaqing Qi C, Kaiser AP. Behavior problems of preschool children from low-income families. Topics in Early Childhood Special Education. 2003;23(4):188-216. https://doi.org/10.1177/02711214030230040201
4. Lee YJ, Park K. The relations between mothers' depression, parenting stress and children's behavior problems. Journal of Psychotherapy. 2005;5(2):39-57.
5. Kim KH, Ju DB. A comparative study on social expenditure by youth problem behavior type: Focusing on trends and tasks. Korean Journal of Comparative Education. 2006;16(3):119-140.
6. Abidin RR. The determinants of parenting behavior. Journal of Clinical Child Psychology. 1992;21(4):407-412. https://doi.org/10.1207/s15374424jccp2104_12
7. Yune HS, Kang JH, Oh KJ. Stability of internalizing and externalizing behavior problems in preschoolers: A one-year follow-up study. Korean Journal of Clinical Psychology. 2011;30(2):617-627.
8. Hofstra MB, Van der Ende J, Verhulst FC. Continuity and change of psychopathology from childhood into adulthood: A 14-year follow-up study. Journal of the American Academy of Child & Adolescent Psychiatry. 2000;39(7):850-858. https://doi.org/10.1097/00004583-200007000-00013
9. Vera J, Granero R, Ezpeleta L. Father's and mother's perceptions of parenting styles as mediators of the effects of parental psychopathology on antisocial behavior in outpatient children and adolescents. Child Psychiatry & Human Development. 2012;43(3):376-392. https://doi.org/10.1007/s10578-011-0272-z
10. Crnic KA, Gaze C, Hoffman C. Cumulative parenting stress across the preschool period: Relations to maternal parenting and child behaviour at age 5. Infant and Child Development. 2005;14(2):117-132. https://doi.org/10.1002/icd.384
11. Kim MS, Moon HJ. Relationship between parenting stress and parenting efficacy on parenting behaviors in mother with young children. Journal of the Korean Home Economics Association. 2005;43(8):25-35.
12. Lee H, Han JW. The effects of parents' self-esteem and parenting attitudes on child's social competence: Dyadic data analysis. Asia-pacific Journal of Multimedia Services Convergent with Art, Humanities, and Sociology. 2017;7(12):807-817. https://doi.org/10.14257/ajmahs.2017.12.21
13. Oh YK, Lee HS. The effects of individual psychology, family environment and social environment factors on adolescents' behavior problems. Korean Journal of Home Economics Education. 2010;22(4):51-64.
14. Luyckx K, Tildesley EA, Soenens B, Andrews JA, Hampson SE, Peterson M, et al. Parenting and trajectories of children's maladaptive behaviors: A 12-year prospective community study. Journal of Clinical Child & Adolescent Psychology. 2011;40(3):468-478. https://doi.org/10.1080/15374416.2011.563470
15. Fass MN, Khoury-Kassabri M, Koot HM. Associations between Arab mothers' self-efficacy and parenting attitudes and their children's externalizing and internalizing behaviors: Gender differences and the mediating role of corporal punishment. Child Indicators Research. 2017. https://doi.org/10.1007/s12187-017-9480-9
16. Pinquart M. Associations of parenting dimensions and styles with externalizing problems of children and adolescents: An updated meta-analysis. Developmental Psychology. 2017;53(5):873-932. https://doi.org/10.1037/dev0000295
17. Mulsow M, Caldera YM, Pursley M, Reifman A, Huston AC. Multilevel factors influencing maternal stress during the first three years. Journal of Marriage and Family. 2002;64(4):944-956. https://doi.org/10.1111/j.1741-3737.2002.00944.x
18. Williford AP, Calkins SD, Keane SP. Predicting change in parenting stress across early childhood: Child and maternal factors. Journal of Abnormal Child Psychology. 2007;35(2):251-263. https://doi.org/10.1007/s10802-006-9082-3
19. De Mol J, Buysse A. The phenomenology of children's influence on parents. Journal of Family Therapy. 2008;30(2):163-193. https://doi.org/10.1111/j.1467-6427.2008.00424.x
20. Lockhart G, MacKinnon DP, Ohlrich V. Mediation analysis in psychosomatic medicine research. Psychosomatic Medicine. 2011;73(1):29-43.

https://doi.org/10.1097/PSY.0b013e318200a54b
21. Kim KH, Kang HK. Development of the parenting stress scale. Family and Environment Research. 1997;35(5):141-150.
22. Cho BH, Lee JS, Lee HS, Kwon HK. Dimensions and assessment of Korean parenting style. Family and Environment Research. 1999;37(10):123-133.
23. Oh KJ, Kim YA. Korean version of the child behavior checklist for ages 1.5-5. Seoul: Human & Innovation; 2008. p. 1-100.
24. Kline RB. Principles and practice of structural equation modeling. 4th ed. New York: The Guilford Press; 2016. p. 7-24.
25. Hoyle RH. Model specification in structural equation modeling. In: Hoyle RH, editor. Handbook of Structural Equation Modeling. New York: Guilford Press; 2012. p. 126-144.
26. Kim SJ, Kim YH. Review about child rearing attitude of parents. Korean Parent-Child Health Journal. 2007;10(2):172-181.
27. Lee KS, Shin YJ, Chun YJ, Park JA. The characteristics of behavior problem among young children in Korea. The Korean Journal of Developmental Psychology. 2004;17(4):53-73.
28. Hwang SO, Hwang ZO. The causal relationships between parenting stress and the parenting attitudes of infant mothers. Korean Journal of Child Studies. 2015;36(4):163-176. https://doi.org/10.5723/KJCS.2015.36.4.163
29. Choi HS, Yeon EM, Kwon SJ, Hong YJ. 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. 2013;7(2):21-45.
30. Park JH, Lee DH. The relationship among mother's parenting behavior determinants, mother's parenting behaviors, and children's delinquency: The comparison between adolescents and delinquent adolescents. Korean Journal of Youth Studies. 2016;23(6):201-232. https://doi.org/10.21509/KJYS.2016.06.23.6.201