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The longitudinal effects of parental monitoring and self-control on depression in Korean adolescents: A multivariate latent growth approach

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ABSTRACT

The purpose of this study was to examine the longitudinal effects of parental monitoring and self-control on depression. To address this purpose, this study investigated the interrelationships among depression, perceived parental monitoring, and self-control—as well as their developmental changes from the eighth to the twelfth grades—by repeated assessment of 3449 Korean adolescents. The data from Korea Youth Panel Survey (KYPS) of the eighth graders who were followed for five years were analyzed using latent growth modeling. The univariate latent growth models showed that adolescents experience an increase in both parental monitoring and self-control but a decline in depression over the five years. In addition, the multivariate latent growth model suggested that the initial level of parental monitoring had significant effects, both directly and indirectly through self-control, on the initial level of depression. The linear changes in parental monitoring were associated with the linear changes in self-control; likewise, the linear changes in self-control were related to those in depression. These results imply that parental monitoring and self-control need to be emphasized as a strategy in order to prevent or alleviate adolescents' depression.

1. Introduction

Depressive symptoms among adolescents are a significant health problem worldwide. Recent research conducted in the U.S. estimates that 20–40% of American adolescents report experiencing depressive symptoms (Peterson, Compas, & Brooks-Gunn, 1992; Repetto, Zimmerman, & Caldwell, 2004). According to surveys on the prevalence of depressive symptoms in Korean adolescents, almost 40% of middle school and high school students have experienced probable depressive symptoms, and 21.2% have experienced definite depressive symptoms (Cho et al., 2001). Depression is one of the major predictors of suicide, and is highly related to other problems of maladjustment such as low self-esteem and self-efficacy (Kerr & Stattin, 2000), behavioral problems (Needham, 2007), and poor academic performance (Jacobson & Crockett, 2000). Adolescent depression is a serious problem and has been a major focus for adolescent mental health literature.

Depression has been believed to change during the course of development, and longitudinal studies have examined these changes empirically (Cho, 2009; Garber, Keiley, & Martin, 2002; Kim & Cicchetti, 2006). However, these developmental changes may vary across individuals, and the change pattern of depression can be better understood by identifying the factors that explain these interindividual differences. According to previous studies, parental and individual factors are the major ones that affect adolescent depression. In this study, we focused on parental monitoring and self-control, which are regarded as protective factors, as they have been found to have a positive impact on the psychological and social adjustment of adolescents. However, most studies that examined the relationships between adolescent depression and these factors were cross-sectional. In addition, predictors were treated as time-invariant variables, even if the studies were longitudinal. In this study, we would like to confirm the intraindividual changes in depression and the longitudinal relationships among depression, parental monitoring, and self-control in Korean adolescents using multivariate latent growth analyses. Specifically, we focus on the properties of all the variables that show changes over time. The specific research questions in this study can be summarized as follows: First, what are the developmental changes in Korean adolescent depression, parental monitoring, and self-control? Second, what are the relationships between these developmental changes in Korean adolescent depression, parental monitoring, and self-control?

2. Literature review

2.1. Development of adolescent depression, parental monitoring, and self-control

Previous studies have shown that depression in adolescents tends to change over time. These results seem to be consistent regardless of region or culture across Eastern and Western countries (Cho, 2009;

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Garber et al., 2002; Kim & Cicchetti, 2006). Developmental research indicates that the level of depression changes as follows: low during early childhood, increasing moderately during adolescence, and decreasing again during early adulthood (Wickrama, Conger, & Abraham, 2008). According to a longitudinal study with Korean adolescents, depressive symptoms appeared to decrease as age increased during late adolescence, from ages 15 to 18 (Cho, 2009). This pattern of changes is related to developmental changes. In other words, as children enter early adolescence, they experience increased stress due to the rapid and various changes, resulting in the increase of depressive symptoms. However, as children move to late adolescence and early adulthood, stress decreases, and the possibility of depression reduces (Ge, Lorenz, Conger, Elder, & Simons, 1994; Larson, Moneta, Richards, & Wilson, 2002). In addition, intraindividual changes over time (i.e., growth trajectories) of adolescent depression may vary between individuals depending on the initial level of symptoms and the rate at which adolescents experience changes. Previous research has confirmed that the interindividual differences of initial levels and rates of changes in depressive symptoms during adolescence (Ge et al., 1994).

The changes of depression is also supposed to be affected by parental monitoring, one of the protective factors that can alleviate depression, which includes how much parents know about their children, such as where their children are, whom their children are with, and what their children are doing (Steinberg, Darling, & Fletcher, 1995). While parental monitoring is also expected to change over time, only a few studies examine the changes, and the results are not in agreement. For instance, Laird, Pettit, Bates, and Dodge (2003) insist that parental monitoring decreases while others posit that it increases at first and, then, decreases from childhood to adolescence (Moilanen, Shaw, Criss, & Dishion, 2009). In Korea, although studies on the changes of parental monitoring have not been conducted yet, parental monitoring would increase during adolescence considering the characteristics of Asian cultures. In Asian cultures, including Korea, there are strong emphases on obedience, conformity, a sense of community, and a competitive drive that puts high value on educational achievement (Feldman, Rosenthal, Mont-Reynaud, Lau, & Leung, 1991; Yi, Wu, Chang, & Chang, 2009). Therefore, parental monitoring is expected to increase depending on a child's educational achievement, adaptation in high school, and parenting effectiveness.

Self-control, another protective factor of depression, is the ability to utilize the appropriate behavior for what a situation demands, and to refrain from temporary impulses or desire for immediate satisfaction (Tangney, Baumeister, & Boone, 2004). Scholars mentioned the development of self-control with two assumptions (Bandura, 1986; Mischel, 1986). First, the behavior of young children is mostly controlled by external presences, such as parents. Second, the external control is internalized in part over time by choosing standards or norms that emphasize the value of self-control and promote the obtainment of self-regulation skills. In addition, the ability to delay gratification, another form of self-control, increases over time (Mischel, 1986) because children learn how to control their thoughts and actions effectively as their ability of formal operation develops (Shaffer, 1996). Thus, self-control is expected to increase as children experience cognitive development and the internalization of values and norms during adolescence. According to Choi (2011), self-control increased linearly from ages 14 to 18 in Korean adolescents.

2.2. Linkages between adolescent depression, parental monitoring, and self-control

Studies indicate the linkages between developmental changes in adolescent depression, parental monitoring, and self-control. Previous research has shown that changes in depressive symptoms during adolescence and young adulthood differ between individuals (Ge et al., 1994). Major predictors of adolescent depression include parental (or familial) and individual factors. Among parental factors, parental monitoring has been highlighted as a parenting behavior that reduces vulnerability to depression. In other words, when parental monitoring is high, the degree of depression appears low; this has been examined through many cross-sectional and longitudinal studies (Frojd, Kaltiala-Heino, & Rimpela, 2007; Jacobson & Crockett, 2000; Sagrestano, Holmbeck, Paikoff, & Fendrich, 2003). Parental monitoring can be a means by which to convey interest and concern for a child's well-being, and thus help to reduce the likelihood and severity of depression in adolescents by providing support and guidance (Hamza, 2010).

Self-control has been reported to reduce depression. Research revealed that self-control is closely related to psychological and social adjustments, and its absence can cause problems at all stages of development (Tangney et al., 2004). Children with high self-control tend to have lower levels of emotional excitement (Fabes, Carlo, Kupanoff, & Laible, 1999), and adults with high self-control experience fewer emotional problems (Gramzow, Sedikides, Panter, & Insko, 2000). In contrast, low levels of self-control tend to be associated with aggression, delinquency, violence, and criminal behavior in adolescence (Avakame, 1998). Self-control is associated with various psychosocial developments and adjustments in adolescents, and many studies on the relationship between problem behaviors, delinquency, and self-control in adolescents have been conducted so far (Gottfredson & Hirschi, 1990; Ko, 2005). However, few studies examine the relationship between self-control and emotional problems like depression. Interestingly, recent studies showed that self-control could help reduce emotional problems such as depression. For instance, Moon (2008) found that self-control had a significant effect on Korean adolescent mental health. In addition, according to studies on Korean adolescents, the higher the level of their self-control, the lower the level of their depression (Bae & Lee, 2009; Choi & Lee, 2008).

Meanwhile, parental factors have been known to affect self-control. According to Gottfredson and Hirschi (1990), parents should monitor the behaviors of children, be aware of their deviant behaviors, and give them punishment for such behaviors in order to nurture self-control. In other words, parental monitoring can support improvement of self-control. These parental influences are expected to continue from childhood into adolescence (Higgins, 2002; Kenny & Rice, 1995). Hong and Oh (2010) found that self-control in adolescents improved as parental attachment and monitoring increased. Choi and Lee (2008) suggested that parental monitoring (i.e., behavioral control) was one of the parental factors that affected depression, while adolescents' self-control showed a mediating effect between parental monitoring and depression.

In sum, while parental monitoring seems to affect depression directly and indirectly through self-control, there is lack of research that examines the relationships between changes in these factors in Korean adolescents. Therefore, this study examined the relationships among these changes longitudinally, controlling gender differences in depression, parental monitoring, and self-control (Kerr & Stattin, 2000; Schraedley, Gotlib, & Hayward, 1999; Tittle, Ward, & Grasmick, 2003).

3. Methods

3.1. Sample

The sample used for this study was obtained from a larger dataset, the eighth grade student panel of Korea Youth Panel Survey (KYPS). KYPS is a national effort to help identify the actual conditions and patterns of change in the various attitudes and behaviors that appear in the course of development, and to help explain the causes of such patterns targeting adolescents (National Youth Policy Institute [NYPI], n.d.). The research first surveyed eighth-grade youths in 2003, and a follow-up survey was carried out over six years, from 2003 to 2008 (one year after graduating from high school). A total of 3449 eighth-grade students and their

guardians were selected as the final samples based on the first-year research results. Among the originally selected samples, 2833 youths participated in the sixth-year survey, resulting in a sample persistency rate of 82.1% (NYPI, n.d.). The current study used five measurement waves (from the second to the sixth wave) with one-year interval between each of the waves for all participants, because items measuring depression were included from the second wave. Among those surveyed, 50% were male and 50% were female, with each group containing 1594 people. In the second-year survey, 78.2% (n = 2492) of the subjects were 16 years old, while 21.6% (n = 689) were 15 years old. There were only seven 17-to-18 year olds.

3.2. Measures

3.2.1. Depression

Depression was measured by six items developed by KYPS and validated in Korean studies (Cho, 2009; Lee & Choi, 2008): "I am not interested in anything at all," "I worry a lot about almost everything," "Sometimes I feel very nervous without any reason," "Sometimes I feel very lonely without any reason," "Sometimes I feel very sad and gloomy without any reason," and "Sometimes I think I want to die without any reason." Each item was measured with a five-point Likert scale ranging from 'Not at all (1)' to 'Very much (5),' with a high score being a high level of depression. The average score of the items was used in the analysis. Each of the internal consistencies (Cronbach's alpha) at two to six waves was good (.824, .829, .832, .836, and .831).

3.2.2. Parental monitoring

Parental monitoring was measured by four items developed by KYPS and validated in Korean studies (Choi & Lee, 2008; Lee & Choi, 2008): "My parents know where I am when I go out in most cases," "My parents know whom I am with when I go out in most cases," "My parents know what I am doing when I go out in most cases," and "My parents know when I come back when I go out in most cases." Each item was measured with a five-point Likert scale ranging from 'Not at all (1)' to 'Very much (5),' with a high score being a high level of parental monitoring. The average score of the items was used in the analysis. Each of the internal consistencies (Cronbach's alpha) at two to six waves was good (.869, .885, .880, .894, and .898).

3.2.3. Self-control

Self-control was measured by six items developed by KYPS and validated in Korean studies (Choi, 2011; Choi & Lee, 2008): "Even if I have a test tomorrow, I do something interesting first," "I give it up soon, if the thing gets hard and complicated," "I tend to enjoy dangerous activities," "I enjoy making fun of someone," "I get mad if I am upset," and "I tend not to do homework very often." Each item was measured using a five-point Likert scale (ranging from 'Not at all (1)' to 'Very much (5)') that used reverse scores, with a high score indicating a high level of self-control. The average score of the items was used in the analysis. Each of the internal consistencies (Cronbach's alpha) at two to six waves was acceptable (.687, .691, .681, .688, and .618).

3.2.4. Gender

Gender was controlled in this study and measured using a dummy coded variable in which 0 reflected female and 1 reflected male.

3.3. Statistical procedure

In this study, latent growth modeling (LGM) was applied to examine the developmental changes in depression, perceived parental monitoring and self-control over time. In addition, linkages between these changes were examined using multivariate LGM. LGM is a strong and flexible method, which can model intraindividual changes over time using structural equation modeling (Chan, Ramey, Ramey, & Schmitt, 2000; Sőrbom, 1974). The task of LGM is to find the appropriate growth curve to accurately and parsimoniously describe the changes in individuals over time. Multivariate LGM is an effective way to estimate the developmental changes in variables simultaneously and examine the associations between the growth parameters of variables (Chan et al., 2000; Singer & Willett, 2003).

Latent growth analyses in this study were performed in two steps. In the first step, univariate latent growth models were estimated to describe the adequate form of the developmental changes in depression, parental monitoring, and self-control separately. For each variable, the most adequate form was determined by comparing the fit indices among three models, namely, one specifying no-growth form, another specifying a linear form, and the last specifying a quadratic form. One way to deal with nonlinear changes over time in LGM is to use the quadratic growth model. A quadratic growth model includes a quadratic factor, a third latent factor that represents the curvature, which can exist in developmental changes. For each interval, a quadratic model assumes that the developmental changes are different, while a linear model assumes that the changes are constant (Curran & Hussong, 2003). The first step was required to take the second step, because the specification of changes in univariate latent growth models had large effects on the validity of the parameters estimated in a multivariate latent growth model (Chan et al., 2000; Stoolmiller, 1994). In the second step of the study, the final univariate growth models estimated in the first step were combined into a single multivariate growth model in order to examine the associations between the growth parameters of each variable. Specifically, in multivariate LGM, developmental change (i.e., trajectory) equations for depression, parental monitoring, and self-control were simultaneously estimated, and associations were examined among all latent factors (i.e., intercept, slope, and quadratic factors).

In this study, AMOS 20.0 was used in the latent growth analyses, and missing values were estimated with the Full Information Maximum Likelihood (FIML) approach for model estimation. Descriptive analysis was conducted using SPSS 20.0 to identify the characteristics of the study variables and intercorrelations among them.

4. Results

4.1. Descriptive statistics and intercorrelations

Table 1 presents the univariate descriptive statistics and intercorrelations for all the study variables. Correlations between predictors (parental monitoring and self-control) were positive, but those between predictors and depression were negative. An examination of the period from the second to the sixth wave showed a general upward trend for parental monitoring and self-control, but a general downward trend for depression. As reported in Table 1, no measure of any study variables exceeded a univariate skewness and kurtosis of 1.0. Therefore, normal theory maximum likelihood was used in latent growth analyses (Curran, West, & Finch, 1996).

4.2. Univariate latent growth models

The shape of the developmental changes for each variable was determined by comparing the three models—or more specifically, the no-growth, linear growth, and quadratic growth models. We compared the fit indices, Tucker–Lewis Index (TLI) and Root Mean Square Error of Approximation (RMSEA), to determine which model more adequately described the changes over time. Fit indices less affected by sample size and that also reflect parsimoniousness of the model are considered good. Both TLI and RMSEA satisfy all these criteria and have been recommended as good indices (Hong, 2000). A higher TLI value indicates a better model fit. Hu and Bentler suggest a value of .95 for TLI cutoff criteria. If a TLI value is over .95, the model fits to the data well (Hu & Bentler, 1998, 1999). According to Browne and

Table 1
Means, standard deviations, and intercorrelations of study variables (n = 3449).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. dep1															
2. dep2	.439**														
3. dep3	.363**	.467**													
4. dep4	.356**	.437**	.492**												
5. dep5	.328**	.414**	.443**	.535**											
6. pm1	−.070**	−.056**	−.045*	−.081**	−.045*										
7. pm2	−.078**	−.071**	−.061**	−.059**	−.041*	.488**									
8. pm3	−.066**	−.057**	−.087**	−.099**	−.049**	.428**	.493**								
9. pm4	−.051**	−.042*	−.048*	−.114**	−.081**	.438**	.468**	.523**							
10. pm5	−.082**	−.056**	−.056**	−.076**	−.109**	.383**	.444**	.436**	.516**						
11. sc1	−.224**	−.160**	−.128**	−.136**	−.128**	.136**	.150**	.125**	.126**	.080**					
12. sc2	−.154**	−.235**	−.162**	−.168**	−.129**	.118**	.171**	.126**	.123**	.086**	.498**				
13. sc3	−.152**	−.159**	−.260**	−.171**	−.152**	.129**	.150**	.148**	.144**	.093**	.426**	.535**			
14. sc4	−.149**	−.136**	−.150**	−.230**	−.129**	.123**	.132**	.110**	.149**	.092**	.427**	.479**	.518**		
15. sc5	−.136**	−.150**	−.158**	−.178**	−.259**	.100**	.152**	.144**	.151**	.134**	.378**	.441**	.495**	.550**	
Mean	2.69	2.66	2.67	2.61	2.56	3.37	3.37	3.42	3.44	3.44	3.29	3.34	3.35	3.34	3.45
SD	.77	.76	.76	.77	.75	.83	.83	.81	.84	.85	.68	.66	.65	.66	.63
Skewness	−.03	−.01	.01	.00	.10	−.20	−.19	−.24	−.30	−.35	−.18	−.01	−.09	−.04	−.19
Kurtosis	−.06	−.11	−.23	−.17	−.21	−.01	−.10	.09	.10	.05	.51	.07	.19	.18	.23

Note. Variables abbreviated: dep1–dep5 = depression from the second to the sixth wave; pm1–pm5 = parental monitoring from the second to the sixth wave; sc1–sc5 = self-control from the second to the sixth wave.
* $p < .05$.
** $p < .01$.

Cudeck (1993), an RMSEA value less than .05 can be considered a good model fit.

As shown in Table 2, first, the quadratic model of depression provided the best fit to the data. Second, the linear and quadratic models of parental monitoring provided a better fit than the no-growth model, but the mean value of the quadratic factor was not statistically significant. Thus, the linear model of parental monitoring fit to the data best. Finally, for self-control, the linear model provided a better fit to the data than both the no-growth and quadratic models (see Table 2). According to the final models, depression had a significant negative quadratic mean coefficient, suggesting a decreasing curvature over time. Parental monitoring and self-control had a significant positive slope mean coefficient, suggesting a meaningful increase from initial levels over the five years (see Table 3).

4.3. Multivariate latent growth model

Next, we examined associations between developmental changes in depression, parental monitoring, and self-control using multivariate LGM. This multivariate latent growth model provided a good fit to the data, χ^2 (df) = 513.376 (97), TLI = .958, RMSEA = .035 (90% CI: .032, .038). The intercept of parental monitoring significantly predicted the intercept of self-control ($\beta = .297$, $p < .001$). In other words, at the second wave, greater parental monitoring was associated with a higher level of self-control. In addition, it was found that the intercept of self-control had a significant negative effect on the intercept of depression ($\beta = -.377$, $p < .001$). This result indicated that higher self-control was associated with a lower level of depression at the second wave. The intercept of parental monitoring had a significant negative effect on the intercept of depression ($\beta = -.090$, $p < .01$). In other words, higher parental monitoring was related to a lower level of depression. There was a significant association between an increase in parental monitoring and an increase in self-control ($\beta = .162$, $p < .01$). An increase in self-control was significantly related to a decrease in depression ($\beta = -.160$, $p < .05$). In other words, self-control showed a stronger improvement as the level of parental monitoring increased rapidly, and depression showed an accentuated decline as self-control showed faster growth (see Fig. 1). Males reported higher self-control ($\beta = .055$, $p < .05$) and lower depression ($\beta = -.215$, $p < .01$) at the second wave, while females showed greater increase in self-control over the five years ($\beta = -.193$, $p < .01$). The influences of gender on both the slope and quadratic factors for depression were not significant.

Table 2
Model fit indices in univariate latent growth analyses.

	Model	χ^2	df	p	TLI	RMSEA (90% CI)
Depression	No-growth model	260.674	13	.000	.924	.074 (.067, .082)
	Linear growth model	50.514	10	.000	.984	.034 (.025, .044)
	Quadratic model	11.184	6	.083	.997	.016 (.000, .030)
Parental monitoring	No-growth model	137.360	13	.000	.966	.053 (.045, .061)
	Linear growth model	49.462	10	.000	.986	.034 (.025, .044)
	Quadratic model	29.369	6	.000	.986	.034 (.022, .046)
Self-control	No-growth model	307.233	13	.000	.925	.081 (.073, .089)
	Linear growth model	91.015	10	.000	.973	.048 (.040, .058)
	Quadratic model	55.881	6	.000	.973	.049 (.038, .061)

Note. CI = confidence interval.

5. Discussion

The purpose of this study was to model the nature of 1) intraindividual changes over time in adolescent depression, parental monitoring, and self-control, and 2) interindividual differences in the changes in depression. The research was conducted in two steps: In the first step, univariate latent growth models were fitted respectively to depression, parental monitoring, and self-control. In the second step, three final univariate growth models were combined using previous studies, into a single multivariate latent growth model. Major results of this study are as follows.

Table 3
Results of univariate latent growth analyses.

Variable	Intercept		Slope		Quadratic slope	
	Mean	Variance	Mean	Variance	Mean	Variance
Depression	2.689***	.297***	−.001	.084***	−.008**	.004***
Parental monitoring	3.366***	.357***	.021***	.011***		
Self-control	3.296***	.245***	.032***	.009***		

** $p < .01$.
*** $p < .001$.

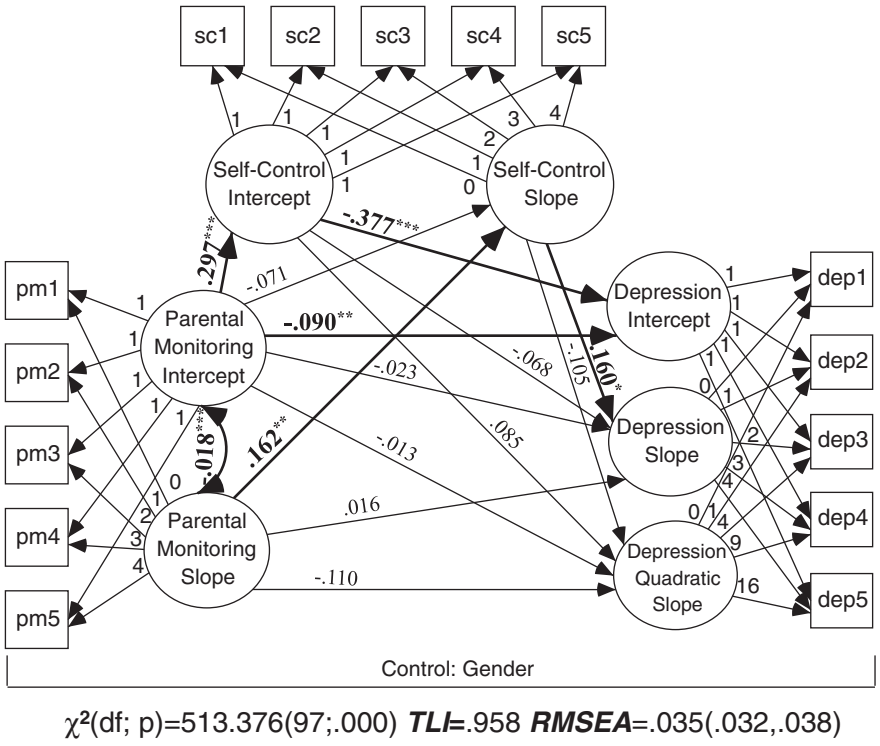

Fig. 1. Multivariate latent growth model. *Note*. Factor loadings were fixed to predefined values. All coefficients were standardized. For ease of presentation, error terms were not presented. The paths from gender to all the latent factors for self-control and depression were estimated as controls (see text for details). *p < .05. **p < .01. ***p < .001.

First, results from univariate latent growth analyses showed that depression decreased from the second to the sixth wave, whereas parental monitoring and self-control increased over time. However, the functional forms of the intraindividual changes differed. The changes over time in parental monitoring and self-control were best described with a linear form, while changes in depression were best described with a quadratic form, in which depression decreased with a curvature (i.e., acceleration over time). The results showing a decrease in depression and an increase in self-control during late adolescence were supported by previous studies (Cho, 2009; Choi, 2011). However, there was a significant difference between the results of this study and those of prior studies regarding parental monitoring: In this study, parental monitoring increased over time, while in previous research, parental monitoring decreased during adolescence (Laird et al., 2003; Moilanen et al., 2009). It is possible that this difference is due to a cultural difference: Asian families, including Koreans, emphasize obedience, conformity, and educational achievement (Feldman et al., 1991; Yi et al., 2009). Parental monitoring is considered especially important as children move from middle school to high school because admission to a university in Korea is critical. In this context, the results of this study are understandable, but further studies are warranted to understand the reasons for this difference between Asian and Western cultures.

Second, results from multivariate latent growth analyses showed that parental monitoring and self-control had effects on depression. More specifically, adolescents who perceived their parental monitoring to be higher initially felt a greater sense of self-control and were less depressed. The initial level of depression in adolescents was lower among those who felt a greater sense of self-control. Adolescents who perceived a rapid increase in parental monitoring felt a rapid increase in their self-control, and those with a rapid increase in self-control felt a faster decrease in depression over the five years studied. Previous studies supported the results that parental monitoring and self-control had negative effects on depression, and that parental monitoring had a positive effect on self-control (Bae & Lee, 2009; Choi & Lee, 2008; Frojd et al., 2007; Hong & Oh, 2010).

To summarize, the results of this study support the perspective that parental monitoring and self-control are beneficial to adolescents. The results suggest that perceived parental monitoring and self-control can make a desirable contribution: lower levels of depression. Therefore, protective factors such as parental monitoring and self-control need to be emphasized in prevention and intervention programs for adolescent depression. Parental monitoring and self-control have been emphasized in clinical interventions for behavioral problems (Dishion & McMahon, 1998; Ronen & Rosenbaum, 2010), while interventions for emotional problems like depression have mainly used cognitive approaches (Butler, Chapman, Forman, & Beck, 2006; Thyer & Wodarski, 1998). Based on this study's results, parental monitoring and self-control should be included in clinical practices for adolescent depression. For example, parental education and counseling programs can be used for teaching parents how to effectively monitor their children. In addition, self-control improvement strategies can be included in counseling for depressed adolescents. Parental counseling for effective parental monitoring may help reinforce adolescents' self-control, as well as prevent adolescent depression.

Although this study adopted a sound research methodology, it was not entirely free from limitations. First, parental monitoring was measured solely by the reports of adolescents. Hence, the respondents' answers might have reflected their subjective viewpoints rather than an accurate depiction of the real features of parental monitoring. Second, other protective factors that have effects on adolescent depression were not examined in this study. For example, parental support and self-competence were reported as protective factors (Bean, Barber, & Crane, 2006; Choi & Lee, 2008). The limitations warrant a cautious interpretation of the study's results.

In spite of the limitations, the study's key findings are noteworthy. First, this study suggests the relationships between depression, parental monitoring, and self-control are more evident, using longitudinal design. Thus far, most studies that have examined their relationships are cross-sectional. Second, whereas previous studies examined the

protective effects of parental monitoring and self-control on externalizing problems such as aggression, delinquency, and violence (Avakame, 1998; Laird et al., 2003), this study expanded on those prior studies by examining the protective effects of parental monitoring and self-control on depression. Finally, the results present important implications for the practitioners who provide direct assistance to adolescents, and parents affected by their adolescents' depression.

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