

Does Today's Parental Intimacy Predict Tomorrow's Peer Interaction in Daily Lives of Korean Adolescents?: A Mediating Role of Daily Self-Evaluation

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Abstract

The primary purpose of this study was to examine to what extent adolescents' daily self-evaluation mediates the effect of experiencing intimacy in parent-adolescent interactions on positive peer interactions the next day, even after controlling for gender and grade level. We employed a daily diary method for seven days in a sample of 452 Korean adolescents, collecting checklist data at the end of each day. Data were analyzed by using hierarchical linear modeling. According to moderated multilevel mediation analyses, the variance of self-evaluation explained 83% of the variance in the lagged effect of parental intimacy on the next day peer interaction even after the upper-level effects of gender and grade level were accounted for. Forth graders were more likely than 7th graders to have a more positive view of themselves when they experienced parental intimacy the previous day. Girls were less likely to experience positive peer interactions when they perceived less intimacy with their parents the day before. Results suggested that it would be most effective for peer relationship programs to teach parents and adolescents how to experience intimacy in their daily interactions, particularly in ways that help adolescents to think more positively about themselves. It would be helpful for parents to learn about various ways to compliment and encourage the adolescent child in everyday conversations. Lastly, findings in grade level differences also suggest that these programs might be especially effective for 4th graders more than 7th graders.

Keywords

Parental intimacy, peer interaction, daily self-evaluation, multilevel, mediation

Introduction

Family and peer comprise two primary interpersonal contexts where adolescents can experience intimacy in their everyday lives. As parent-child relationships are known to lay the foundation for nurturing the capability to be socially competent in other relationships (An & Lee, 2009; Brown, Mounts, Lamborn, & Steinberg, 1993; Chang, 2010; Furman, Simon, Shaffer, & Bouchey, 2002; Moon, 2014; Way & Chen, 2000), the powerful influence that parent-child interactions have on friendships could not be emphasized enough. Intimacy experienced in the context of parent-child relationships serves as a secure base that enables children to form positive relationships with peers (Bowlby, 1958; Furman *et al.*, 2002).

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While previous research generated ample evidence for such family-peer linkages, less is known about an intervening mechanism through which parent-adolescent interactions may operate to influence peer interactions (Brown *et al.*, 1993). Drawing on the past research highlighting the significant role of interactions with parents in adolescent view of self (Allen, Hauser, Bell, & O'Connor, 1994; An & Lee, 2009; Bulanda & Majumdar, 2008; Dekovic & Meeus, 1997; Gecas & Schwalbe, 1986; Jeong, 2010; Jung, 2010; Laible, Carlo, & Roesch, 2004; Lee & Hoe, 2014; McCormick & Kennedy, 1994; Moon, 2014; Wilkinson, 2004), we expected that adolescents who experience intimacy in their interactions with parents would view themselves more positively and this positive conception of self would, in turn, be related to positive experiences in peer relationships.

Thus, the purpose of the current study was to examine the mediating role of self-evaluation in the lagged link between parental intimacy and peer interaction. To examine this process more closely at the daily level, the present study employed a daily diary method (Bolger, Davis, & Rafaeli, 2003; Laurenceau & Bolger, 2005) everyday over a period of seven days in a sample of 452 Korean adolescents. We conducted moderated multilevel mediation analyses (Kenny, Korchmaros, & Bolger, 2003), using hierarchical linear modeling (HLM) techniques (Raudenbusch & Bryk, 2002). Specifically, we predicted that experiencing intimacy from parents would lead to experiencing more positive peer interactions the following day. Daily self-evaluation was expected to mediate this lagged-day association. Further, effects of gender and grade level were accounted for in each link given that they were expected to moderate each link proposed in the lower-level mediation model.

Theoretical Background

The focus of the current study on the family-peer linkage is grounded in Bronfenbrenner's ecological theory of human development (1986) and the spillover model (Almeida, Wethington, & Chandler, 1999; Lehman & Repetti, 2007; Margolin, Christensen, & John, 1996; Repetti, 1996; Repetti & Wood, 1997). As the ecological theory posits that socialization systems (e.g., family and peer) are interrelated and influence each other, it recognizes understanding the nature of these

linkages and their underlying mechanisms as an important task in developmental research. While grounded in Bronfenbrenner's ecological theory, the spillover model posits that emotion triggered by an interpersonal event in one setting spills over to affect a later interaction in the other setting within a relatively shorter time frame (Almeida *et al.*, 1999; Lehman & Repetti, 2007; Margolin *et al.*, 1996; Repetti, 1996; Repetti & Wood, 1997). This short-term orientation of the spillover model is particularly useful for studying short-term linkages between family and peer proposed in this study. For instance, according to this model, if a child has an intimate interaction with parents on a given day, he or she is more likely to experience positive interaction with peers the next day.

One drawback in the previous spillover research, however, is that it has examined spillover of negative experiences primarily, such as stress and conflict. The current study sought to shed light on the spillover of positive experience by examining the lagged link between experiencing parental intimacy and positive peer interaction. Further, as posited by the ecological theory, we attempted to identify an explanatory mechanism of the link.

Family–Peer Linkage: Parental Intimacy and Peer Interaction

A consistent theme across previous studies in the link between family and peer settings is that when family is a safe haven that provides a sense of warmth and support, adolescents get along with friends better compared to their peers who do not experience the same level of intimacy (An & Lee, 2009; Furman *et al.*, 2002; Moon, 2014; Way & Chen, 2000). The quality of parent-child relationship significantly predicted the quality of friendship among American (Way & Chen, 2000) as well as Korean adolescents (An & Lee, 2009). Furman *et al.* (2002) found that support in relationships with parents was associated with the level of support in peer relationships among adolescents. Similarly, positive parenting behaviors predicted healthy peer attachment among Korean adolescents (Moon, 2014). Based on this body of research, we expected that Korean adolescents would experience more positive interaction with peers if they had intimate interaction with parents the day before.

An Explanatory Mechanism of the Family–Peer Linkage: Self-Evaluation

Scholars have expressed a growing need for identifying an explanatory mechanism for family-peer linkages (Parke & O'Neil, 1999). In the current study, we begin this explorative mapping process by considering adolescent self-evaluation as one possible way in which the short term spillover of positive experience could take place.

Family is a primary context that nurtures a positive sense of self in children (Kagitcibasi, 1996; Zirkel, 1971). Numerous studies demonstrate that parent-child interactions play a powerful role in adolescents' evaluation of themselves (Allen, Hauser, Bell, & O'Connor, 1994; An & Lee, 2009; Bulanda & Majumdar, 2008; Dekovic & Meeus, 1997; Gecas & Schwalbe, 1986; Jeong, 2010; Jung, 2010; Lee & Hoe, 2014; Moon, 2014; Wilkinson, 2004). There is evidence from cross-sectional studies that the quality of parent-child relationship and parental attachment predict self-esteem among adolescents (An & Lee, 2009; Bulanda & Majumdar, 2008; Dekovic & Meeus, 1997; Gecas & Schwalbe, 1986; Jeong, 2010; Lee & Hoe, 2014; Wilkinson, 2004). It appears applicable for Korean adolescents as well (An & Lee, 2009; Jeong, 2010; Lee & Hoe, 2014). Support for the role of parents in adolescents' self-evaluation is also found in longitudinal studies. Parents' display of warmth and support in interaction with adolescents predicted adolescents' self-esteem both concurrently and longitudinally over two years (Allen *et al.*, 1994). In Jung's (2010) study, parental intimacy longitudinally predicted Korean adolescents' self-esteem across five years during adolescence. Thus, we speculated in this study that everyday interactions with parents would be related to the way they view themselves as a person.

An individual's feelings of self-worth affect the capacity to establish close relationships with others (An & Lee, 2009; Berndt, 1982; Bohrnstedt & Felson, 1983; Dekovic & Meeus, 1997; Fullerton & Ursano, 1994). Positive self-evaluation is not only the outcome of interactions with parents and others, but also provides a lens through which a person perceives and responds to others in interpersonal interactions. Research shows that adolescents with higher self-esteem are more likely to be involved in close relationships while adolescents with lower self-esteem experience

more difficulties in peer relationships (An & Lee, 2009; Berndt, 1982; Bohrnstedt & Felson, 1983; Dekovic & Meeus, 1997; Fullerton & Ursano, 1994). An adolescent who positively regards him/herself may be more able than an adolescent with a negative view of self to form close friendships. In other words, positive self-evaluation may facilitate positive interactions with peers.

Taken together, the existing research is suggestive of the mediating role that self-evaluation may play in the link between parent-adolescent and peer interactions. The present study builds on and expands the existing research by looking at this process more closely at the daily level. Everyday life is full of experiences that can affect the way we feel about ourselves. Intimate interaction with parents is one such experience that can shape how adolescents feel about themselves daily. Although there is some evidence suggesting that self-esteem remains stable (Savin-Williams & Demo, 1984), the support for the dynamic nature of self-evaluation can also be found in previous research. Works by Blumer (1986) and Gecas (1972) explain how people evaluate themselves changes significantly by social situations and experiences. A daily diary study by Greenier, McNamara, Waschull, Berry, Herlocker, & Abend (1999) also showed that individuals reported varying levels of self-evaluation scores from day to day in response to positive and negative daily events across 14 days.

Gender and Grade Level Differences

Girls tend to emphasize intimacy in friendships and report more positive peer relationships compared to boys (An & Lee, 2009; Colarossi & Eccles, 2000; Fuligni & Eccles, 1993). Consistent to this view, past studies show that a relational climate in parent-child relationships may have stronger influence on peer relationships among girls. For instance, An & Lee's (2009) study with Korean adolescents showed that positive parenting behaviors predicted the quality of peer relations more strongly for girls. In addition, according to a daily diary study conducted with adolescents (Chung, Flook, & Fuligni, 2011), experiencing conflict with parents predicted greater levels of peer conflict only for girls. However, there is some evidence that suggests the opposite. For instance, Colarossi & Eccles(2000) found that the level of parental support in parent-child relationships had no impact on peer relationships for adolescent girls whereas an indirect effect was observed among

boys. Given the differential effects of parent-child relationships on adolescents' peer relationships by gender, the present study controlled for its effect by entering gender as a level 2 variable at the individual level in multilevel analyses. By doing so, we also examined whether the proposed links in the lower level mediation model varied by gender across individuals in the upper level.

Previous research generally shows that the extent to which parents play a role in self-esteem is greater for younger adolescents compared to older ones (Jung, 2010; Nickerson & Nagle, 2004). Nickerson & Nagle (2004) found that the level of attachment with parents predicted adolescent satisfaction with self for 6th graders but not for 8th graders. Given that 8th graders turned to peers more often than 6th graders for the experience of intimacy, Nickerson & Nagle speculated that the quality of interpersonal relationships with peers may be more important for feeling good about self among 8th graders compared to younger early adolescents. Thus, parental impact may be less powerful for middle school students compared to elementary students in the present study. Similarly, in Jung's (2010) study with Korean adolescents, the effect of parental intimacy on the changes in adolescents' self-esteem declined across five years as they got older. In light of the differential effects based on age, we accounted for the effect of grade level as well in our mediation analyses.

Daily Approach

The daily approach used in this study has a number of advantages over the traditional cross-sectional and longitudinal designs. First, daily assessment is effective for solving measurement biases associated with retrospective recall by allowing individuals to report experiences closer to the time of occurrences (Bolger, Davis, & Rafaeli, 2003; Stone, Shiffman, & DeVries, 1999; Wheeler & Reis, 1991). In the current study, adolescents responded to daily diary items about their day at the end of each day for seven days.

Second, the daily design is especially useful for collecting data about the dynamics of individual perceptions and relationships that appear fixed and stable in traditional cross-sectional designs. For instance, although a global index of how someone feels about him/herself as a person (e.g., self-esteem, self-worth) may appear stable, his or her daily self-evaluation may fluctuate within person

across days (Greenier *et al.*, 1999). Greenier *et al.* (1999) showed that various positive and negative daily events explained the within-person variation in daily self-evaluation across 14 days. In addition, the perceived level of intimacy in day-to-day interactions with one's parents is likely to vary across days even though he/she may overall have a close and positive relationship. Thus, daily measurements would allow us to examine within-person variations (rather than between-person) across days and what explains such variation (Laurenceau & Bolger, 2005). However, past studies have tended to focus on global measures of self-evaluation and peer and parent-child relationships at one point in time using a standard cross-sectional design (An & Lee, 2009; Bulanda & Majumdar, 2008; Colarossi & Eccles, 2000; Dekovic & Meeus, 1997; Gecas & Schwalbe, 1986; Jeong, 2010; Lee & Hoe, 2014; Nickerson & Nagle, 2004; Wilkinson, 2004), overlooking the dynamic nature of these variables. By establishing within-person variation in this study between parent-adolescent interaction and peer interaction over seven days, the daily approach permitted us to rule out temporally stable characteristics (e.g., individual's reporting tendency, gender, overall qualities of relationships with peers and parents) as alternative explanations for between-person correlations.

Third, the micro but intensive longitudinal aspect of the daily design allows a more confident specification of the temporal direction in the relationship between two variables by measuring each variable within a short interval (e.g., 24 hours) across multiple time points (e.g., few days to weeks). Standard longitudinal designs, on the other hand, have the longer time span between measurements (e.g., one or two years), which makes it difficult to control for intervening variables. In the present study, we attempted to enhance our confidence in the temporal order by controlling for prior day reports in all analyses.

Current Study

The daily diary method is particularly useful for the present study in the sense that it allows for a micro-longitudinal design to capture a lagged effect of intimacy experienced in parent-adolescent interactions on the quality of peer interactions by measuring changes within person across seven days. For instance, it enabled us to examine whether experiencing parental intimacy

significantly predicts peer interactions the next day, even after controlling for the prior day level of peer interaction. By doing so, we were able to look more closely into the temporal order of influence in a way that previous cross-sectional studies could not. Individual characteristics, such as gender and grade level, were also accounted for in the upper level across lower-level links between daily variables. In summary, the primary purpose of the current study was to examine to what extent adolescents' daily self-evaluation mediates the effect of experiencing intimacy in parent-adolescent interactions on positive peer interactions the next day, even after controlling for gender and grade level. The following research questions were generated to examine the mediating role of self-evaluation in the daily effect of parental intimacy on peer interactions the next day:

1. Does parental intimacy predict the next day peer interaction with gender and grade level controlled?
 - 1-1. If so, does this link vary by gender and grade level?
2. Does parental intimacy predict the next day self-evaluation with gender and grade level controlled?
 - 2-1. If so, does this link vary by gender and grade level?
3. Does daily self-evaluation mediate the effect of parental intimacy on peer interaction the following day with gender and grade level controlled?
 - 3-1. If so, does this link vary by gender and grade level?

Method

Data Collection and Participants

We used the Wave 1 daily diary data from the Seoul Education & Health Welfare Panel (SEHWP). SEHWP is a longitudinal study that we are currently conducting in partnership with Seoul Metropolitan Office of Education for three years (2014~2016). A purposive quota sampling was used to select 14 elementary and 12 middle schools in Seoul. Students in 4th and 7th grades and their parents were invited to participate in the study. The study had two parts: survey and daily diary. A total of 820 students and their parents completed the survey first in May and June of 2014. The survey consisted of questions about demographic information, health status and symptoms, family life, school life, and behavioral and psychological problems. For the current study, we used the

survey data only for demographic information. Upon completion of the survey, only the students were invited to participate in the daily diary. Data collection of daily diary took place online in September of 2014 for seven days. The study procedure and materials (e.g., research proposal, consent forms, questionnaires and daily diary checklist) were approved by the Institutional Review Board of the university where the corresponding author is affiliated.

A daily diary checklist consisted of items asking about experiences with family and friends and emotional and physical states each day. Participants received an online link each evening via email and mobile phone where they could log in and complete a daily diary checklist at the end of each day. It takes approximately 5 to 10 minutes to complete a checklist. A total of 812 students who had completed the survey also agreed to participate in the daily diary. Of these students, 581 students (71.5%) actually completed a checklist at least for one day and 452 students (55.6%) for more than three days. Data from these 452 students were used for multilevel analysis in this study. They completed 5.88 checklists on average and 222 of them completed all seven checklists. Participants were quite evenly divided in terms of gender and grade level, where 232 (51.3%) were male and 220 (48.7%) were female, and 233 (51.5%) were in 4th grade and 219 (48.5%) in 7th grade. An average monthly household income had the following distribution: 5,000,000 Won or more ($n=122$), between 3,000,000 Won and 4,999,999 Won ($n=187$), and below 3,000,000 Won ($n=141$).

Daily Diary Checklist Variables and Measures

Daily Peer Interaction. Students indicated each day whether the following had occurred (coded as "1") or not (coded as "0"): (1) I got along well with friends, (2) I had fun with friends, and (3) Friends liked me. All scores were summed to create an index of daily peer interaction calculated separately for each day for each participant ($M=2.81$, $SD=.55$, $n=2,229$, Range = 0-3). A higher score indicated a more positive peer interaction. The daily-level reliability computed by HLM was .81 in this study.

Daily Parental Intimacy

Students reported each day whether they felt loved by a father, a mother, or other caregiver, and whether they had a good time

with a father, a mother, or other caregiver. All items each day were summed as an indicator of daily parental intimacy for each participant ($M=1.54$, $SD=.75$, $n=2,656$, Range = 0-2). The daily-level reliability computed by HLM was .88 in this study.

Daily Evaluation of Self

Participants rated themselves how good they were each day as a son or daughter, as a friend, as a student, and as a person, separately for each on a scale from 0 “Not at all” to 4 “Extremely.” An index of daily self-evaluation was computed for each day for each participant by summing up the scores for each item ($M=3.05$, $SD=.87$, $n=2,656$, Range=0-4). The daily-level reliability computed by HLM was .92 in this study.

Data Analysis Plan

Daily-level data were analyzed using hierarchical linear modeling (HLM) to account for the nested structure of the data, in which daily reports are nested within individuals (Raudenbush & Bryk, 2002). First, a lagged day association between parental intimacy and the next day adolescents’ peer interaction was tested. The following Level 1 equation shows the basic model for the lagged day parental intimacy to peer interaction association.

$$Peer\ interaction_{ij} = b_{0j} + b_{1j}(parental\ intimacy_{t-1}) + b_{2j}(peer\ interaction_{t-1}) + b_{3j}(weekend) + e_{ij} \quad (1)$$

Peer interaction on a given day (i) for a particular student (j) was modeled by each individual’s intercept (b_{0j}) and parental intimacy from the previous day (b_{1j}). Prior day peer interaction (b_{2j}) was included to parse out the effects of peer interaction from the previous day and to capture the unique effect of the prior day parental intimacy. In order to reduce possible confounds resulting from effects of weekend versus weekday, the weekend (coded 0 for weekday and 1 for weekend) was entered as a control variable in all equations (b_{3j}). The error term in the equation represents unexplained variance (e_{ij}).

To observe potential differences according to individual-level characteristics, gender and grade level were examined as moderators of this lagged day association. The following Level 2 equations were mapped on to Equation 1 to account for the individual-level effects of gender and grade level and to see

whether one-day lagged parental intimacy to peer interaction association varied by gender and grade level.

$$(Intercept) b_{0j} = c_{00} + c_{01}(gender) + c_{02}(grade\ level) + u_{0j} \quad (2)$$

$$(Slope) b_{1j} = c_{10} + c_{11}(gender) + c_{12}(grade\ level) + u_{1j} \quad (3)$$

Gender was dummy-coded with females designated as the reference group for comparison with male students. Grade level was also dummy-coded with 4th grade as the baseline group. Error terms contributing to unexplained variance are represented by u_{0j} and u_{1j} .

Next, parental intimacy was examined as a predictor of adolescents’ self-evaluation the next day. The basic model (Equation 1) was slightly modified so that self-evaluation was predicted by prior day parental intimacy, while controlling for self-evaluation the prior day.

$$Self-Evaluation_{ij} = b_{0j} + b_{1j}(parental\ intimacy_{t-1}) + b_{2j}(self-evaluation_{t-1}) + b_{3j}(weekend) + e_{ij} \quad (4)$$

Similarly as shown above, Level 2 Equations 2 and 3 were also mapped onto Equation 1.

Lastly, we examined the extent to which one-day lagged parental intimacy to peer interaction association was mediated by daily self-evaluation as follows using guidelines suggested by Kenny, Korchmaros, and Bolger (2003):

$$Peer\ interaction_{ij} = b_{0j} + b_{1j}(parental\ intimacy_{t-1}) + b_{2j}(self-evaluation) + b_{3j}(peer\ interaction_{t-1}) + b_{4j}(weekend) + e_{ij} \quad (5)$$

Level 2 Equations 2 and 3 were also mapped onto Equation 5 to account for the individual-level effects of gender and grade level and to examine whether Level 1 effects of parental intimacy and self-evaluation varied by gender and grade level.

Results

Does Parental Intimacy Predict the Next Day Peer Interaction?

Results of moderated multilevel modeling are presented in Table 1. Experiencing parental intimacy significantly predicted more positive peer interaction the next day even after controlling

Table 1. Multilevel Modeling

Level 1 and Level 2 Variables	Peer Interaction b (SE)	Level 1 and Level 2 Variables	Self-Evaluation b (SE)	Level 1 and Level 2 Variables	Peer Interaction b (SE)
Intercept (b_0)	2.16(.20)***	Intercept (b_0)	1.92(.12)***	Intercept (b_0)	2.32(.16)***
Gender (c_{01})	.04(.08)	Gender (c_{01})	.12(.09)	Gender (c_{01})	.02(.06)
Grade Level (c_{02})	-.19(.07)*	Grade Level (c_{02})	-.44(.09)***	Grade Level (c_{02})	-.12(.16)
Parental Intimacy (t_{-1}) (b_1)	.09(.02)***	Parental Intimacy (t_{-1}) (b_1)	.10(.03)**	Parental Intimacy (t_{-1}) (b_1)	.02(.03)
Gender (c_{11})	-.03(.02)*	Gender (c_{11})	.02(.02)	Gender (c_{11})	.00(.03)
Grade Level (c_{12})	.01(.02)	Grade Level (c_{12})	-.07(.02)**	Grade Level (c_{12})	.04(.03)
Peer Interaction (t_{-1}) (b_2)	.24(.06)***	Self-Evaluation (t_{-1}) (b_2)	.42(.03)***	Self-Evaluation (b_2)	.12(.03)***
				Gender (c_{21})	.02(.04)
				Grade Level (c_{22})	.01(.04)
				Peer Interaction (t_{-1}) (b_3)	.08(.06)
Weekend (b_3)	.00(.03)	Weekend (b_3)	.00(.02)	Weekend (b_4)	.00(.02)
Variance Component of Parental Intimacy (t_{-1})	.01***	Variance Component of Parental Intimacy (t_{-1})	.03**	Variance Component of Parental Intimacy (t_{-1})	.00
				Variance Component of Self-Evaluation	.05***
Variance Component of Intercept	.21***	Variance Component of Intercept	.23***	Variance Component of Intercept	1.11***

* $p < .05$, ** $p < .01$, *** $p < .001$ (Note: Subscripts: ($t-1$)=one day prior, Gender coded: 0=female, 1=male, Grade level coded: 0=4th grade, 1=7th grade, Weekend coded: 0=weekday, 1=weekend.)

for gender and grade level ($b = .09$, $SE = .02$, $p < .001$). This lagged effect of parental intimacy was stronger for adolescent girls than boys ($b = -.03$, $SE = .02$, $p < .05$). In other words, parental intimacy experienced yesterday explained changes in the quality of peer interactions between yesterday and today more significantly for girls.

Does Parental Intimacy Predict the Next Day Self-Evaluation?

Experiencing parental intimacy significantly explained the variance in the next day self-evaluation within person across gender and grade level ($b = .10$, $SE = .03$, $p < .01$). This effect of parental intimacy was stronger for 4th grade students compared to 7th graders ($b = -.07$, $SE = .02$, $p < .01$). In other words, parental intimacy experienced yesterday explained changes in the way 4th graders evaluated themselves between yesterday and today compared to 7th graders.

Does Daily Self-Evaluation Mediate the Effect of Parental Intimacy on Peer Interaction the Following Day?

As shown in Table 1, self-evaluation predicted the same day

peer interaction, even after controlling for the prior day peer interaction at the daily level and for gender and grade level at the individual level ($b = .12$, $SE = .03$, $p < .001$). This effect did not vary by gender or grade level. The effect of parental intimacy on peer interaction was no longer significant when the effect of self-evaluation was accounted for in this model ($b = .02$, $SE = .03$, $p > .05$), suggesting a full mediation effect of self-evaluation.

According to Kenny *et al.* (2003), when estimating the amount of mediation in a lower-level random-effects model the total effect is estimated by using the following formula: $c = c' + ab + \sigma_{ab}$.¹ Applying this formula, the total effect in this study was .12 ($c = .02 + .01 + .09 = .12$). Thus, the variance of intervening self-evaluation explained 83% $((.12 - .02) / .12 = .83)$ of the variation in the effect of parental intimacy on the next day peer interaction even after the upper-level effects of gender and grade level were accounted for.

¹In this formula, c' represents the direct effect of parental intimacy on peer interaction, a the effect of parental intimacy on self-evaluation, b the effect of self-evaluation on peer interaction with the effect of parental intimacy accounted for, ab the indirect effect of parental intimacy, and σ_{ab} represents the covariance of a with b .

Discussion

The purpose of the present study was to shed light in the temporal process where parental intimacy is linked to the next day peer interaction through self-evaluation among 452 Korean adolescents across the period of seven days. To accomplish this goal, we employed a daily diary method (Bolger *et al.*, 2003; Laurenceau & Bolger, 2005) to measure study variables once a day for seven days. A prior day outcome variable was controlled for in each model to capture the unique effect of the predictor variable and to increase confidence in the direction of influence between same day variables (e.g., self-evaluation and peer interaction in Equation 5). Based on the past research suggesting gender and grade level differences in the effect of parental intimacy and self-evaluation (An & Lee, 2009; Chung *et al.*, 2009; Jung, 2010; Nickerson & Nagle, 2004), we controlled for gender and grade level in the upper level equations. It enabled us to examine the moderated multilevel mediation effect of daily self-evaluation with gender and grade level accounted for and to examine whether proposed daily links varied by these individual characteristics.

Main findings and contributions of the present study are as follows. First, moderated multilevel mediational analyses confirmed our prediction that experiencing parental intimacy would lead to experiencing more positive peer interactions the following day due to a positive increase in self-evaluation as a result of experiencing parental intimacy the day before. Specifically, the variance of self-evaluation explained 83% of the variance in the lagged effect of parental intimacy on the next day peer interaction even after the upper-level effects of gender and grade level were controlled for. This finding highlights the significant role of parental intimacy in fostering positive sense of self in adolescents' daily lives. It also suggests that promoting a positive sense of self among adolescents, particularly in the context of parental intimacy at home, could be one solution for creating positive peer group experience. Although parent behaviors in the context of parent-adolescent relationships are known to influence peer relationships during adolescence (An & Lee, 2009; Brown *et al.*, 1993; Furman *et al.*, 2002; Moon, 2014; Way & Chen, 2000), the explanatory mechanism through which this well-established link operates has remained unclear. In this light, the present study deepens the

current understanding of family-peer linkages by examining this process across multiple days and identifying the role of daily self-evaluation as a powerful explanatory mechanism.

Further, this finding expands the existing research on spillover during adolescence, which has primarily focused on the spillover of negative experiences, such as conflict and stress, across contexts (e.g., school, family, peer) (Chung *et al.*, 2009; Chung *et al.*, 2011; Margolin *et al.*, 1996). The previous research thus highlighted the importance of minimizing or reducing negative experiences in each context for preventing negative spillover. The present study attempted to examine if positive experiences at home on a given day would transfer over to the peer domain the following day. We believe that our results provided evidence for such a positive family-to-peer spillover on a daily basis. As such, our results suggest that promoting positive daily experience at home, which might be taken for granted due to its mundane nature, has potential for fostering a positive peer culture.

Second, peer interactions among Korean adolescent girls in this study were more significantly influenced than boys by the level of intimacy they experienced with their parents the day before. In other words, Korean adolescent girls were less likely to experience positive peer interactions when they perceived less intimacy with their parents the day before. This finding is consistent with previous studies (An & Lee, 2009; Chung *et al.*, 2009). It also suggests that experiencing intimacy with parents in their daily lives may be a mundane yet powerful experience, especially for girls, which could serve as a stronger anchor as they navigate the peer world everyday. A next step in research might be to explore these gender differences further by identifying daily family factors that are associated with peer experiences among Korean adolescent boys in their daily lives.

Third, results showed that 4th graders were more likely than 7th graders to have a more positive view of themselves when they experienced parental intimacy the previous day. This finding is in support of the previous research that showed the declining impact of parents on self-worth in teen years (Jung, 2010; Nickerson & Nagle, 2004). We speculate that 4th graders may perceive themselves primarily in the context of parental intimacy as parents continue to be more influential people in their social world. However, by adolescents enter middle school and as their social

world expands and gets more complex it is possible that how they evaluate themselves on a daily basis may be dependent on multiple factors, including the input from friends as well as parents.

Results of this study have several implications for interventions designed to improve peer relationships among Korean teens. As parent-child relationships form the basis for other relationships later (An & Lee, 2009; Brown *et al.*, 1993; Furman *et al.*, 2002; Moon, 2014; Way & Chen, 2000), an essential component of any peer relationship program must be parent-child relationships. Thus, adolescents experiencing difficulties in peer relations would benefit from a program that focuses on enhancing intimacy in parent-adolescent interactions. In addition, our results suggest that it would be most effective to teach them how to experience intimacy in their daily interactions, particularly in ways that help adolescents to think more positively about themselves. It would be helpful for parents to learn about various ways to compliment and encourage the adolescent child in everyday conversations. Lastly, findings in grade level differences also suggest that these programs might be especially effective for 4th graders more than 7th graders.

We also believe that our results are informative for Korean youth policy as well. The Fifth Youth Policy Basic Plan (FYPBP 2013-2017) announced by the Ministry of Gender Equality and Family emphasized the importance of fostering a youth friendly environment and strengthening of multiple youth competencies (Kim, 2012). Specifically, FYPBP 2013-2017 identified creating a healthy family environment and promoting a positive peer culture as two primary goals of the youth policy. Results of the present study suggest that promoting a positive sense of self among adolescents may be an effective mechanism for fostering a positive peer culture, particularly in the context of parental intimacy. In this light, we believe that policy efforts to foster a positive peer culture would be most fruitful when concurrently accompanied by programs designed to promote parent-child intimacy and positive sense of self among adolescents. Thus, we recommend an integrated and concerted policy project rather than different policy institutions running two or three distinct projects separately.

Findings reported in this article must be interpreted with limitations of the study in mind. First, we used only two items (i.e., feeling loved and having a good time) to measure perceived intimacy with parents. Although affect and enjoyment

are considered two key elements of intimacy in parent-child relationships (Foley & Duck, 2006; Oliphant & Kuczynski, 2011), there may be multiple other behaviors that parents display in their daily interactions, which illicit feelings of intimacy in adolescents. Second, the causality in the same-day link between self-evaluation and peer interactions may be bidirectional given the nonexperimental nature of the present study. Our finding suggests that adolescents who feel good about themselves also get along well with their peers. It is also possible however that adolescents may feel better about themselves at the end of the day because they had positive peer interactions during the day. To minimize the possibility of such a reverse relationship, we controlled for prior day peer interaction and we believe it has improved our confidence in the direction of the effect found in the link. A future study is needed to examine a lagged association between these two variables in order to clarify the causality.

In conclusion, our results highlight the importance of day-to-day levels of parental intimacy and self-evaluation for peer interactions among Korean adolescents. Positive self-evaluation appears to be a key prerequisite needed on a daily basis for adolescents to enjoy positive peer relationships. In addition, parental intimacy, albeit ordinary and mundane, is indeed a powerful experience in adolescents' daily lives, particularly for positive peer interactions among girls and for positive self-evaluation among 4th graders.

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