

어머니의 특성에 따른 아동의 애착안정성 형성 발달경로

A Developmental Pathway of Child Attachment Security
through Maternal Characteristics

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ABSTRACT

This research addressed the issue of how mothers' representations of attachment are transmitted to children, focusing on post-infancy attachment and on maternal stress as a mediator between mother's attachment style and child attachment security. Fifty-three mother-child dyads participated in a lab visit when the children were 30 months (T1) and 49 months (T2) of age. The Attachment Style Questionnaire and the Parental Stress Inventory were used to measure mothers' characteristics; the Separation-Reunion procedure and classification at T1 and the Attachment Q-set at T2 were used to measure children's attachment security. The models were analyzed by Analysis of Moment Structure Equation. Results confirmed evidence that no direct pathway exists between maternal attachment style and child attachment security : at T1 child attachment security formation was related to maternal stress, but there was no such relationship at T2.

Key Words : 세대간 애착유형 순환(intergenerational attachment cycle), 어머니 애착유형 (mother attachment style), 양육 스트레스(maternal stress), 아동 애착안정성 (child attachment security).

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Introduction

The notion that child attachment security is formed during the second six months of life and becomes relatively stable afterwards has been widely accepted (e.g., Ainsworth, 1979; Ainsworth, Bell, & Stayton, 1971, 1974). In addition, attachment researchers have focused on elucidating the antecedents and consequences of secure and insecure attachment relationships in infancy. Recent studies have attempted to focus on a broader concern for how attachment differentiates, transforms, and reintegrates with subsequent developmental tasks of the post-infant child (Crittenden, 1992). It has been noted that early secure attachment is important, since it relates to persistent problems in the future life of the child, such as scholastic achievement failure, low social and emotional competencies, internal and external behavior problems, and unemployment (Cicchetti, 1990; Erikson, Sroufe, & Egeland, 1985; Lyons-Ruth, Easterbrooks, & Cibelli, 1997; Lyons-Ruth, Alpern, & Repacholi, 1991; Main, Kaplan, & Cassidy, 1985; Moss, Rousseau, Parent, St-Laurent, & Saintonge, 1998; Shaw & Vondra, 1993; Sroufe, 1983).

In order to understand the contributions of attachment relationships to individual adaptation across the life span, different factors such as the perspective of the changing competencies, needs, and environments of growing children must be taken into consideration. However, little is known about the predictors of early preschool attachment security; furthermore, little is known about the relationships between mothers' characteristics and

their influence on post-infancy attachment.

Maternal attachment style

Recent attempts to understand adult attachment relationships from an attachment perspective have been strongly influenced by the work of Bowlby (Bowlby, 1969, 1973, and 1980). In most studies, the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1984) was used to identify adult attachment style. The interview is designed to tap memories of childhood relationships with parents and to identify the influence of those early relationships on adult personality. However, administration and scoring of the AAI require in-depth training (an accessibility limiting factor, especially for clinicians); besides, it is not economical to study a large group or large number of observational data. Recognizing the need for a simple and economical alternative assessment to the AAI, especially for the study of large groups, the Attachment Style Questionnaire (ASQ; Feeney, Noller, & Hanrahan, 1994) was developed as a self-report questionnaire. In comparison with the AAI, the ASQ is newly introduced; hence, it is less validated by researchers. In this study, we sought to provide further evidence for the construct validity of the ASQ.

Consistent with the basic tenets of attachment theory, Hazan and Shaver (1987) and Feeney et al. (1994) argued that the three major attachment styles described in the infant literature (secure, avoidant, and anxious-ambivalent) are manifested

in adult attachment style. They described secure subjects as those who are comfortable with intimacy and able to trust and depend on other people; while avoidant experience discomfort with closeness and find difficult to depend on others; finally, anxious-ambivalent people are those seeking extreme levels of closeness and are apprehensive being abandoned or not loved sufficiently. Hazan and Shaver (1987) suggested that their concept of attachment styles is consistent with attachment theory, since adult attachment styles have been thought to develop from infant's experiences of regulating distress with caregivers. The characteristic pattern of response to distress is known as a factor that reveals information about adult's attachment styles. Mikulincer, Florian, and Weller (1993) and Kobak and Sceery (1988) have described differences in the behaviors of three levels of attachment style to cope with stressful situations as follows. Secure individuals handle negative feelings in a relatively constructive manner by accepting their distress and turning to others for support and comfort. Avoidant-ambivalent individuals show restricted acknowledgment of negative feelings and displays of anger and distress, which is known as a strategy to reduce conflict with rejecting or insensitive caregivers. Finally, anxious individuals show relatively constant awareness of negative feelings and exaggerate their fear and anger.

Glachan and Ney (1995) suggested that mothers' comfort with close relationships, being able to seek help from others, being able to re-direct feelings to others and being able to withdraw from distressing situations are indicators of

maternal distress. Especially, Phelps, Belsky and Crnic (1998) revealed an interesting result that securely attached mothers exhibit resilient parenting even under high stress situations. Similarly, Das Eiden, Teti and Corns (1995) found that under conditions of high stress (i.e., low self-esteem, low marital adjustment), children who have insecurely attached mothers behave more negatively than the children who have securely attached mother. These results suggest that maternal attachment style should have important implications for both mother's and child's adjustment.

Maternal stress

It is widely accepted that infant-caregiver relationship plays an important role in the formation of child secure/insecure attachment (Wolff & van IJzendoorn, 1997). Many researchers have reported great influence of maternal psychosocial problems on the development of insecure attachment during the infancy period (Benn, 1986; Denham & Moser, 1994; Lyons-Ruth et al., 1997; Radke-Yarrow, Cummings, Kuczynski, & Chapman, 1985; van IJzendoorn, Goldberg, Kroonenberg, & Frenkel, 1992). It is also suggested that maternal stress has an adverse effect on child development by reducing parental responsiveness which in turn would create limitations with regard to opportunities for child development (Crnic & Greenberg, 1990; Hadadian & Merbler, 1996; Mouton & Tuma, 1988). For example, women who are exposed to high degrees of social isolation, negative marital relationship, and maternal

stress and depression are subject to parental dysfunctions such as maternal distance, coldness and lack of attention to the child which can be immediate causes for child insecure attachment (Patterson & Capaldi, 1991; Ritchie & Holden, 1998; Rosenblum, Mazet, & Benony, 1997).

With the exception of Green (1980), researchers have consistently reported a significant influence of maternal stress on the quality of child attachment (Benn, 1986; Hadadian & Merbler, 1996; Jarvis & Creasey, 1991; Moss et al., 1998; Pederson, Moran, Sitko, Campbell, Chesquire, & Acton, 1990; Teti, Nakagawa, Das, & Wirth, 1991). In view of these findings, Hadadian and Merbler (1996) speculated that mothers who had less stress and accepted themselves more responded better to their children. Consequently, maternal responses lead to child secure attachment. Thus, maternal stresses are likely to create a relational context that is not supportive of child attachment security.

Although mothers' influence on child attachment formation has been emphasized, the inter-generational attachment cycle between mother and child raises an important question. If mothers' attachment patterns are often repeated in their interactions with their children and it is difficult to be changed, is there any prevention that could have an effect on child's insecure attachment formation that may come from mother's insecure attachment? Therefore, a crucial issue in attachment theory deserving close scrutiny is how mother's representations of attachment are transmitted to children. In the study of van IJzendoorn

(1995), the results of the meta-analysis indicated that maternal sensitive responsiveness could not be the only mediator between parents' attachment representation and child attachment security because it explains only a part of the variance. However, it has not yet been studied which factors, under what conditions, disrupt the link between mother's attachment style and child attachment security. Most of all, we should try to account for the 'intervention', that is, we should study the mechanisms through which parental variables affect children's quality of attachment. Some studies indicated that maternal stress is related to both maternal attachment and parental functioning (e.g., Denham & Moser, 1994; Ritchie & Holden, 1998), and child insecure attachment (e.g., Egeland & Farber, 1984). However, the pathway involving the influence of maternal attachment style and maternal stress on the attachment security remains as yet to be examined. Exploring the pathway on child attachment security and study of its influential factors is of great importance for prevention of child insecure attachment formation. However, the pathway involving the influence of maternal attachment style and maternal stress on the attachment security remains as yet to be examined. The purpose of this study is to clarify the pathways of maternal attachment style and maternal stress on child attachment security. In addition, an attempt was made to specify whether these predictors are consistent with 30 and 49 months old children to fully understand child attachment development.

Method

Participants

Participants included 53 French-speaking mother-child dyads (27 girls, 26 boys) who were part of a longitudinal project focused on the development of socio-emotional competencies and the contributions of family relationships. These participants visited our lab when the children were aged 30 months (Time 1) and 49 months (Time 2). They represent an urban French-Canadian population of two-parent families with upper-middle SES characteristics : Thirty-four percent of the children were living in union or remarried-parent families, whereas no child was living in a single-parent family. With respect to income level, most participants were coming from middle and upper class families : 11% of families earned under \$30,000 (CAN), 26% earned between \$30,000 and \$50,000, and 63% of the families had an annual income of \$50,000 and above. Fifteen percent of the mothers had 12 years or less of schooling; the rest had some college, university, or higher level of education. Thirty-six percent of the children were firstborn, 45% second-born, and 19% third or later. All the children in the sample had at least one brother or sister.

Procedure

Subjects were recruited through advertising in local newspapers, community centers, and other

facilities delivering services to young children and their families (e.g. public libraries, pools, medical offices, daycare centers). A lab visit was scheduled with the mothers when their child was 30 months. Two weeks prior to the lab visit, mothers were asked to fill out questionnaires at home (including a socio-demographic questionnaire and The Parental Stress Inventory - Bigras, LaFreniere, & Abidin, 1996). At the time of the lab visit, mothers were asked to come along with their 30-month-old child and bring back the completed questionnaires. The lab visit was divided into two similar sequences of evaluation. Both began with an interactive mother-child task (a story completion task and a discussion of past events), that was followed by a three-minute separation and a five-minute reunion. A light snack was offered to the participants between these two sequences. The procedure used for separations and reunions was similar to Stevenson-Hinde and Shouldice (1995) and followed recommendations from Cassidy and Marvin (1992) with regard especially to the stranger behavior. While the child took part in different activities with a female experimenter, mothers filled out the Attachment Style Questionnaire (ASQ; Feeney, Noller, & Hanrahan, 1994). The second lab visit was scheduled with the mothers when their child was 49 months. The mothers were asked to fill out the Attachment Q-Set (AQS) questionnaire to measure their children's attachment security.

Task and instruments

Attachment Style Questionnaire

The Attachment Style Questionnaire (ASQ; Feeney, Noller, & Hanrahan, 1994) was administered to mothers during the lab visit when their children were 30 months old. The ASQ is closely based on Hazan and Shaver's (1987) descriptions of attachment styles (security, avoidance, and anxiety). The aim of the questionnaire was to provide a broad-based measure of adults' attachment styles. The questionnaire was developed with a large pool of items. It was designed to cover the basic themes of infant and adult attachment theory such as trust, dependence, need for approval, compulsive self-reliance, etc. Factor analysis of the ASQ produced a three-factor solution that captured the basic elements of adult attachment: Security, Avoidance, and Anxiety.

Security is characterized by a feeling of confidence in both self and others (e.g., "I feel confident about relating to others"). Avoidance is consistent with Hazan and Shaver's (1987) conceptualization of avoidant attachment (e.g., "I worry about people getting too close, or achieving things is more important than building relationships"). According to Bartholomew's model (Bartholomew & Horowitz, 1991), Anxiety, which is central to the original conceptualization of anxious/ambivalent attachment (Hazan & Shaver, 1987) and to Bartholomew's description of the preoccupied group, is characterized by an anxious reaching out to others in order to fulfill dependency needs (e.g., "I worry that I won't measure up to other people"). Items

were rated on a 6-point scale from 1 = "totally disagree" to 6 = "totally agree." Two types of reliability were computed: internal consistency as measured by Cronbach's alpha and test-retest reliability coefficients. Coefficient alphas for the three factors were .83 (Security), .83 (Avoidance), and .85 (Anxiety). These coefficients were calculated on the full sample of 470 subjects suggesting that the scales have high levels of internal consistency. Reliability coefficients for the three scales over a period of approximately 10 weeks were .74 for Security, .75 for Avoidance and .80 for Anxiety (Feeney, Noller, & Hanrahan, 1994). In our sample, Cronbach alpha coefficients were lower than in the original validation sample: .66 (Security), .53 (Avoidance), and .79 (Anxiety).

The Parental Stress Inventory

Mothers completed a questionnaire related to their level of stress when their children were 30 months. The Parental Stress Inventory (PSI; Abidin, 1992; Bigras et al., 1996) is a 101 item maternal self-report measure, which evaluates perceived stress experienced in the parental role. As Abidin (1986) demonstrated, the PSI possesses very adequate content, factorial, concurrent, discriminate, and construct validity and internal reliability, based on data from a sample of 534 parents. The PSI was designed to assess the Parent domain, and also has Child domain scales that were not used in our study. The Parent Domain is organized around seven dimensions: (1) depression (e.g., "When I think about the kind of parent I am, I often feel guilty or bad about

myself", 9 items) (2) feelings of competence (e.g., "I have had many more problems raising my child than I expected", 13 items), (3) attachment (e.g., "I expected to have closer and warmer feelings for my child than I do, and this bothers me, 7 items), (4) spousal relations (e.g., "Having a child has caused more problems than I expected in my relationship with my spouse", 7 items), (5) social isolation (e.g., "I feel alone and without friends", 6 items), (6) health (e.g., "Having a child has caused a change in the way I sleep", 5 items), and (7) sense of role restriction (e.g., "Most of my life is spent doing things for my child", 7 items). The PSI yields scores for each individual parent dimension and also yields an overall score for the Parent domain that is obtained by summing the scores of each separate scale. Each item is scored by the mothers on a 5-point scale (1 = strongly agree, 5 = strongly disagree). The higher the score, the more stress reported. Cronbach alpha coefficients within our sample were generally satisfying : .77 (Depression), .45 (Attachment), .76 (Role restriction), .77 (Competence feelings), .71 (Social isolation), .67 (Spousal relationship), and .53 (Health).

Child Attachment Security (Time 1) : Participants were invited to our lab when the children were 30 months old. The Cassidy and Marvin system (Cassidy & Marvin, 1992) was used to assess mother-child attachment behavior during two separations and reunions. This system incorporates criteria from the previously developed infancy system and the Main and Cassidy (1988) system for 6-year-olds. Focus is on children's behavior, especially during the reunions, and

attention is given to the strategies used to cope with this stressful situation within the range of normal child experience. This system categorized the reunion behavior of the child after separation from the caregiver according to six patterns :

Insecure-avoidant (A) : Attachment behavior is characterized by physical, affective, or conversational avoidance of intimacy with the parent; the child may ignore parental verbal or nonverbal initiatives or redirect conversation toward a neutral topic. In our sample, 9 participants (17%) were classified in this category.

Secure (B) : Parent-child interaction is relaxed and mutually enjoyable. The child initiates communication or contact with the parent and uses the parent as a base for exploration. Thirty-nine participants (74%) were classified as secure.

Insecure-dependent (C) : Two patterns of attachment behavior can lead to classification into this category. Parent-child interactions can be conflictual or the child acts immature or passive. In both cases, interactions seem to interfere rather than facilitate child exploration. In our sample, no participants corresponded to that description.

Insecure-controlling (Cn) : Interactions are indicative of role-reversal in the parent-child relationship : The child controls parent's behavior often in a caregiving or punitive manner. This category is hypothesized to be the developmental evolution of the insecure-disoriented (D) category observed in infancy. Two participants (4%) were classified as insecure-controlling.

Insecure-disoriented (D) : Some D children do not evolve into the controlling pattern and continue to show the infancy pattern of disori-

entation. Children are classified as D if they express fear, apprehension, or disorientation on reunion with their parent, whereas interactions remain generally consistent with A, B, or C pattern. Two participants (4%) were classified in this category.

Insecure other (I/O) : The child is unable to use the parent as a secure base for exploration but either does not show one of the above patterns of insecurity or displays a combination of these. In our sample, no participants corresponded to that description.

Two raters who were trained by R. Marvin classified the video-films of the Strange Situation. Interrater reliability between coders was excellent. For the purpose of the present study, all insecure patterns (A, C, D, Cn, and I/O) were grouped into a single category of insecure attachment. The Cassidy and Marvin procedure and coding scheme have been successfully applied in previous studies to examine attachment behaviors during the preschool and early school-age period. Their concurrent and predictive validity have been shown to be satisfying (Barnett, Kidwell, & Leung, 1998; Manassis, Bradley, Goldberg, Hood, & Swinson, 1994; Moss et al., 1996, 1998; Parent, Gosselin, C., & Moss, 2000; Stevenson-Hinde & Shouldice, 1995).

Time 2 : The Attachment Q-Set (AQS; Waters & Deane, 1985) was used to measure child attachment security at time 2 when the children were 49 months old. The AQS was described to mothers as an index of children's current behavior in the home, and mothers were given instructions regarding the procedure before sorting

began. All mothers sorted the 90 items under the on-site supervision of the graduate assistant. The graduate assistant was continually available as mothers sorted to answer any questions they may have had about the meaning of individual items and to assist mothers in item placement, if necessary (e.g., ensuring that "nonapplicable" items were placed in the middle of the sorting distribution [pile 5-"neither like nor unlike my child"]). Because AQS security scores are derived by correlating an individual child's sort with experts' criterion sort completed for the hypothetically "most secure" child, placing nonapplicable items in the middle of the AQS distribution (rather than in piles 1, 2, or 3, which are reserved for items that are "unlike" the child) prevents nonapplicable items from having a serious impact on the size of the correlation between the mother's sort and the criterion sort. Sorting time ranged from 45 min to 1 hr to complete. Each observer responded to a 3-point scale that indicated the observer's confidence in her sort : 3 (very confident), 2 (somewhat confident), and 1 (not confident). Each mother's sort was then correlated with a set of averaged criterion sorts obtained from a variety of attachment experts who were asked to complete the Q-set on the basis of their idea of secure base behavior. The mean interrater reliability across the experts was .93. The higher the correlation between the mother's sort and a set of criterion scores, the more secure the child is assumed to be with regard to quality of attachment. The distribution of correlations was transformed into a more normal distribution using Fisher's r to z

transformation procedure, following Waters and Deane's (1985) recommendations. For this sample,

scores on the attachment Q-set ranged from .16 to .97 ($M = .57$, $SD = .18$)

Results

Testing the Mediator Effect Model for Time 1 and Time 2

An attempt was made to clarify a mediator effect on child attachment security through maternal characteristics; that is, we tested whether MS (Maternal Stress) is a mediator between MAS (Maternal Attachment Style) and CAS (Child Attachment Security). Participants' mean scores and standard deviations for self-reported and observed on each of the measures, and intercorrelations among all of the measures are reported in Table 1.

Structural equation modeling was used to test the model of the relationships among security,

avoidance, and anxiety for MAS, and depression, attachment, restriction, competence, social isolation, marital relationship, and health for MS. In addition, a model was used to test the relationships between MAS, MS, and CAS. To examine the mediator effect, AMOS 4.0 software was used (Arbuckle & Wothke, 1999). Amos modeling procedure was specifically chosen because it allows us to approach full-information ML model estimation with missing data, and the likelihood can be computed for the observed portion of each case's data and then accumulated and maximized. In the nature of mediator factors, the independent variable must affect the mediator in the first equation, and independent variable must be shown

Table 1. Cross-Sectional Correlations among All Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Security	--											
2. Avoidance	-.42*	--										
3. Anxiety	-.40*	.47	--									
4. Depression	-1.8	.47	.25	--								
5. Attachment	-0.4	.25	.18	.38*	--							
6. Restriction	-1.7	.31	.44*	.57*	.37*	--						
7. Competence	-2.8*	.30	.24	.57*	.28*	.48*	--					
8. Social isolation	-3.0*	.39	.37*	.31*	-.09	.32*	.33*	--				
9. Marital relationship	-2.9*	.19	.21	.48*	.11	.51*	.33*	.32*	--			
10. Health	-3.0*	.20	.16	.21	-.02	.16	.25	.32*	.32*	--		
11. Attachment security(T1)	.31*	-.10	-.06	-.28*	-.26	-.25	-.36*	-.05	-.21	-.13	--	
12. Attachment security(T2)	-.08	-.03	.10	-.11	.02	.09	-.13	-.05	-.13	-.21	.03	--

* $p < .05$

to affect the dependent variable in the second equation, and also the mediator must affect the dependent variable in the third equation (Baron & Kenny, 1986). First, we tested the conditions with the data of T1 (30 months). The results of the current study revealed that the independent variable (MAS) significantly affects the mediator (MS) in the first equation in T1 (30 months; standardized regression coefficient = .68; $SE = .095$, $Z = 3.14$, $p < .01$); second, the mediator (MS) significantly affects the dependent variable (CAS) (standardized regression coefficient = -.61; $SE = .267$, $Z = -2.274$, $p < .05$). However, the third equation, MAS does not affect the dependent variable, CAS (the standardized regression coefficient = .32; $SE = .045$, $Z = 1.108$, $p > 0.1$). In the mediator model, mediation one (MS) established a strong relationship between the predictor (MAS) and the mediating variable (MS) and the mediating variable (MS) also showed strong relationship with endogenous variable (CAS). This model provided a good fit to the data; Chi-square = 36; $df = 40$; comparative fit index (CFI) = 1.00; Tucker-Lewis Index (TLI) = 1.004; root-mean-square error of approximation (RMSEA) = .00; and Akaike's information criterion (AIC) = 109.994. However, MS cannot be necessarily a mediator because it does not hold the second condition, which is essential for being a mediator.

Furthermore, we have obtained the similar result for the T2 (49 months) in the effect on child attachment security from maternal attachment style. The independent variable (MAS) significantly affects the mediator (MS) in the first

equation (standardized regression coefficient = .68; $SE = .096$, $Z = 3.118$, $p < .01$). However, the mediator (MS) was not significantly affects the dependent variable (CAS) (standardized regression coefficient = -.12; $SE = .089$, $Z = -1.129$, $p > 0.1$) and the third equation, MAS does not affect the dependent variable, CAS (the standardized regression coefficient = .26; $SE = .011$, $Z = .839$, $p > 0.1$). Again, this model provided a good fit to the data; Chi-square = 35.8; $df = 40$; Tucker-Lewis Index (TLI) = 1.004; comparative fit index (CFI) = 1.00; root-mean-square error of approximation (RMSEA) = .00; and Akaike's information criterion (AIC) = 109.826. However, MS cannot be necessarily a mediator in T2 because it does not hold the second condition and the third condition. Hence, the mediator model for T1 and T2 does not seem to provide a mediator effect.

Testing the Indirect Effect Model for Time 1 and Time 2

Next, we considered testing an indirect path model, removing an insignificant path from the model (MAS to CAS). The results of the structural equation model analyses on the child attachment security along with the standardized estimates for each path are presented in Figure 2. At T1, the standardized regression coefficient show that maternal attachment style was significantly related to maternal stress (standardized regression coefficient = .65; $SE = .093$, $Z = 3.074$, $p < .01$), and maternal stress was

significantly related to child attachment security (standardized regression coefficient = $-.38$; $SE = .147$, $Z = -2.538$, $p < .05$). All parameter estimates in the structure model were significant at the .05 and .01 level. Adequacy of model fit was determined by the chi-square test and other fit indexes less sensitive to sample size. The structural components of a path analytic model based on the child attachment security were tested for goodness of fit. The goodness of fit index (GFI) indicated a good fit for the model (T1). A summary of the fit indices for these analyses are : Chisquare = 37.43; $df = 41$; comparative fit index (CFI) = 1.00; Tucker-Lewis Index (TLI) = 1.003; root-mean-square error of approximation (RMSEA) = .00; and Akaike's information criterion (AIC) = 109.430.

Following the results of T1, maternal attachment style was related to maternal stress; in turn, maternal stresses, which come from mother's sociopsychology and physical stress situations were inversely associated with child attachment security. However, there was no significant direct path between maternal attachment style and child attachment style. Thus, as we expected, an increase in mothers' positive attachment style showed an indirect relationship to an increase in child attachment security at follow-up, through a decline in maternal stress. Although, statistically, the role of maternal stress as a mediator is rejected, clinically the possibility of considering maternal stress as a mediator still exist, because indirect effect of maternal attachment style on

child attachment security through maternal stress was indicated in the results of this study. The reliable relationships between maternal attachment style and maternal stress, and between maternal stress and child attachment security allowed that this model is an indirect effect on child attachment style, but not exclude the possibility of a mediator effect. In summary, the paths from maternal attachment style to maternal stress, in turn, to child attachment security were found to be significant, but no significant path led from maternal attachment style to child attachment security in T1.

At T2, the standardized regression coefficient show that maternal attachment style was significantly related to maternal stress (standardized regression coefficient = $.68$; $SE = .098$, $Z = 3.085$, $p < .05$); however, maternal stress was not significantly related to child attachment security (standardized regression coefficient = $-.12$; $SE = .032$, $Z = -0.39$, $p > 0.1$). The structural components of a path analytic model based on the child attachment security were tested for goodness of fit. A summary of the fit indices for these analyses are : Chi-square = 36.55; $df = 41$; Tucker-Lewis Index (TLI) = 1.004; root-mean-square error of approximation (RMSEA) = .00; and Akaike's information criterion (AIC) = 108.55. The paths from maternal attachment style to maternal stress was found to be significant, but no significant path led from maternal attachment style to child attachment security at T2.

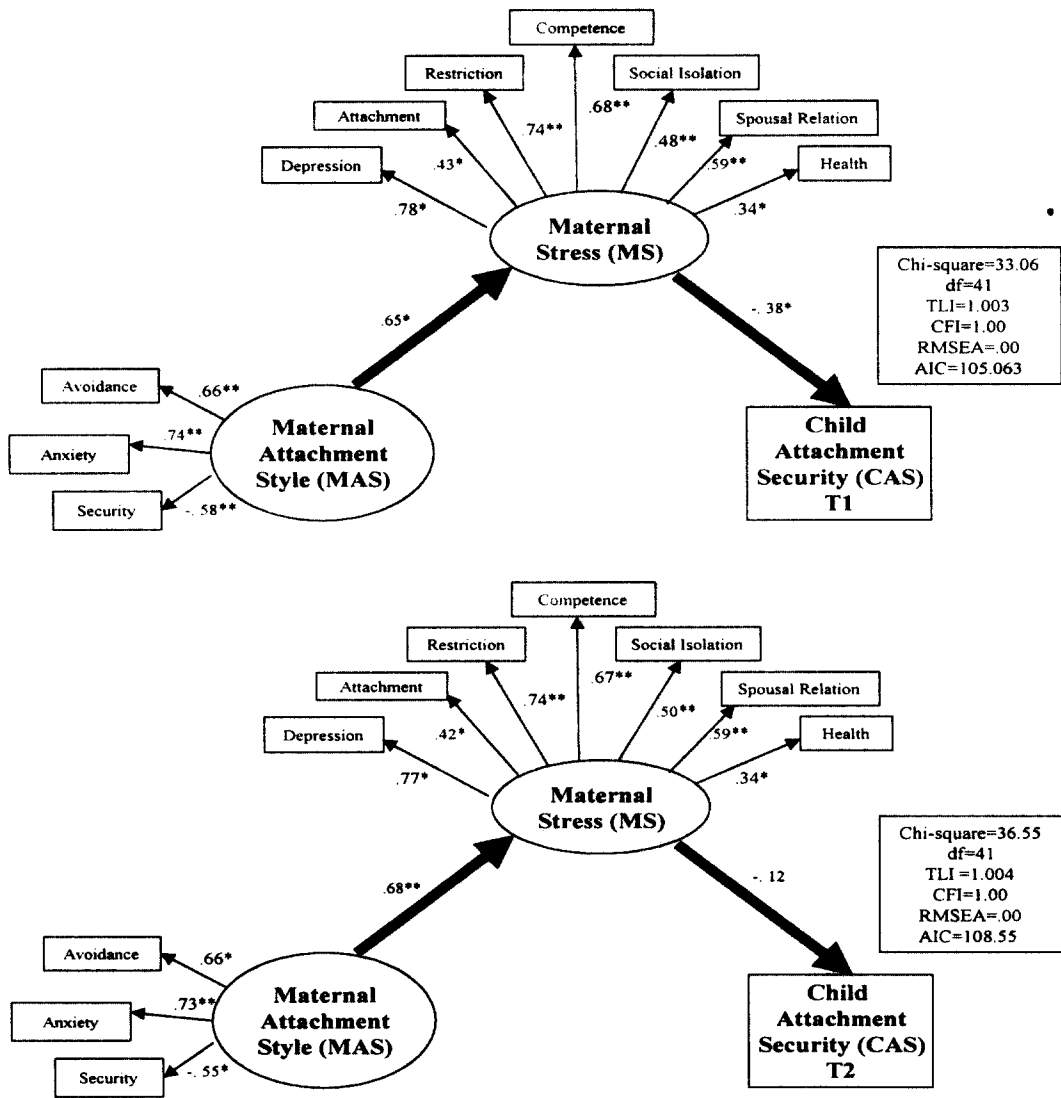


Figure 1. Results of analyzing a structural equation analysis model on the child attachment security in T1(30months) and T2 (49months).Standardized path coefficients (directional paths) appear on single-headed straight arrows. All of the path coefficients are significant beyond the * p<.05 level and ** p<.01 level.

Discussion

The results of this study confirmed and extended evidence that child attachment security

is related to maternal attachment style through maternal stress, affirming the attachment theory's

distinction between security and insecurity. A primary purpose of the present study was to examine the hypothesis, the intergenerational transmission of attachment security from mother to child. Following this, we examined the possibility that maternal stress is a mediator that would statistically explain the association between maternal attachment and the child attachment security. The results of this study did not show a direct link between mother and child attachment and failed to provide a full support for the mediational role of maternal stress. We found that no significant direct relationship exists between maternal attachment style and child attachment security in both T1 (30 months) and T2 (49 months). In contrast to previous studies, which have found a direct link between maternal attachment and child attachment suggesting inter-generational attachment formation cycle (Fonagy, Steele, & Steele, 1991; Main & Goldwyn, 1984; Main, Kaplan, & Cassidy, 1985; for a meta-analytic review, see van IJzendoorn, 1995), our results rather suggest the existence of an indirect link breaking the cross-generational transmission of attachment style between mother and child. Considering the results of T1, intergenerational transmission of attachment is only indirectly produced through mother's socioemotional and physical stress. Hence, the mother's adult attachment style is not a direct factor that can predict child attachment security; it only predicts part of child attachment security, while other factors may intervene with the child attachment security. For instance, some autonomous mothers who have secure adult attachment might have insecurely

attached children, and some insecure parents might have securely attached children (van IJzendoorn, 1995). The current study also indicates that exceptions to the traditional believe exist and it is important to generate hypotheses on interventions of intergenerational attachment cycle.

Now, we are in the position to discuss on "a preventive intervention variable", since we found that a direct pathway between mother and child attachment does not exist in both T1 and T2. We found the intervention factor involving their perceived parental stress in T1; that is, mothers who feel anxious with regard to their intimate relationships or prefer to avoid them altogether are more likely to experience their parenting role with a toddler as a stressful experience. This kind of attachment styles makes difficult for them to solicit or get satisfying support from their spouse, family, and friends. As a consequence, they feel less pleasure, more restriction and less emotional availability toward their child. This parenting stress sets fewer optimal conditions for their child development of a secure attachment.

Bowlby (1988) stated that the link between early attachment experiences and adult attachment relationships can be disrupted due to the effect of late experiences of relationships that one may have during their adult life. For instance, positive attachment experiences with a friend or therapist may reconstruct an originally insecure attachment representation. It can be assumed that when a mother, who had a difficult child experience, has supportive marital relationship or positive current circumstances, she might be a particularly good parent. Likewise, stress or negative current circum-

stances such as a negative marital relationship, social isolation, or poor health might have a particularly deleterious affect on parenting system, which can lead a child to develop an insecure attachment.

This proves that, from a social point of view, although the attachment theory emphasizes the personal characteristics associated with attachment styles, it also recognizes that relationship behaviors are usually influenced by situational variables. In addition, from a psychological point of view, previous research reported that some women who are subject to physical abuse demonstrate warmer attitude towards their children than normal women. This is apparently in an effort to alleviate their own insecurities by using a form of "compensatory warmth", and this behavior may enable their children to cope with the negative effects of marital violence (Ritchie & Holden, 1998). Although these mothers' situations and motivations of warm responsiveness to their children are different, compensatory maternal warmth or their changed attachment security from their original insecure attachment can bring positive outcomes for their children.

In summary, some researchers reported that child attachment is predictable from the mother's attachment style (e.g., Fonagy et al., 1991), while others suggested the possibilities that the inter-generational cycle of attachment may break down according to circumstances (e.g., Leifer & Smith, 1990; Phelps et al., 1998). That is, interaction between mother's attachment style and child attachment security should be considered from two different aspects : (a) the cross-generational

transmission of attachment style, which may lead the child to secure/insecure attachment and (b) the intra-personal and contextual factors associated with breaking the cross-generational cycle.

Phelps et al. (1998) showed a possibility of change of adult attachment style and examined whether "earned secures" (individual who had insecure attachment due to negative childhood but the person has developed secure attachment) are able to maintain their positive parenting practices despite special conditions such as high daily stress. Their results indicated that under high levels of stress, the earned secures demonstrated similar parent behavior to "continuous secures" (individuals who coherently reflect on positive childhoods) and more positively than "insecures" (individuals who have developed an incoherent perspective on negative childhoods); likewise, insecure subjects exhibit less positive parenting by showing negative behavior. However, under optimal conditions, insecure subjects are operating in a flexible and adaptive way. Under low stress, no group differences were obtained. Considering the findings of Phelps et al. (1998), the results of the current study confirm the possibility of a situation that rejects the cyclic attachment theory, meaning that maternal attachment style may be alternated when being transferred to the child, and be dependent on the levels of maternal stress. To strengthen this idea, one may consider that environmental stress can make it difficult for mothers to respond positively, affectively or behaviorally toward their infants (Denham & Moser, 1994).

These findings also imply the importance of

other relationships for mothers dealing with maternal stress. Although many researchers have concluded that maternal stress is significantly related to child insecure attachment, a causal relationship between maternal stress and child insecure attachment has not been identified. Furthermore, shared-method variance was often used (i.e., Jarvis & Creasey, 1991; both of the data, maternal stress and Q-set, were obtained from parents). In the current study, we considered the confounded variables that may have influenced on their results. The probability of bias due to shared-method variance does not exist in this study, since we did not use mother's opinion to measure child attachment security. Trained observers estimated the child attachment security in this study through mother and child interactions.

The implications of the findings of this study for family well-being are crucial, especially for mothers' perceived stress in their parenting role. The findings of this study can be useful for developing programs to help stressed women

grow more positive in their interactions with people and their children. Such programs should focus on both teaching parental strategies and alleviation of parenting stress. Furthermore, psychologists and educators can help mothers develop positive mother-child relationships that help their children cope with the insecure attachment. However, the bridge between mother and child attachment - maternal stress - appears to be insufficient to explain the strong association between mother and children's attachment. Further research is necessary to advance our understanding of the "transmission gap" which is affecting mother's attachment representations and children's attachment. It would be interesting to see if maternal sensitivity would still be identified as a mediator if the ASQ were used for measurement of maternal attachment. Since Pederson et al., (1998) reported maternal sensitivity as a mediator between autonomy and child attachment security, using AAI for the measurement of maternal attachment style, it could give an interesting finding on child attachment.

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요 약

영아기의 애착형성이 어머니의 특성에 따른 상호작용에 의해 안정애착 혹은 불안정 애착으로 발달된다는 이론이 널리 알려지면서 불안정 애착에 대한 예방과 치료중재의 필요성이 고취되어졌음에도 불구하고, 가장 결정적인 문제인 어머니의 어떤 특성들이 아동의 불안정애착 형성에 직접적인 영향을 미치는가에 대한 연구는 거의 전무한 실정이다. 이에 따라 본 연구는 어머니와 아동간의 세대간 애착순환을 재검증함과 동시에 어머니의 양육스트레스가 어머니-아동 불안정 애착전이를 예방 및 중재시킬 수 있는 매개변인이 되는지를 검증하고자 한다.

영아기 이후의 애착형성에 대한 이해를 확장시키기 위한 시도에서, 30개월에 달한 아동과 어머니 53쌍이 조사 관찰되어졌고, 이는 아동발달의 관점에서 이 아동들이 49개월에 달했을 때 다시 조사 관찰되어졌다. 아동양육과 관련된 어머니 특성들을 측정하기 위하여 the Attachment Style Questionnaire와 the Parental Stress Inventory를 사용하였고, 아동애착안정성을 측정하기 위하여 the Separation-Reunion Classifications (1차)와 the Attachment Q-set (2차)이 사용되어졌으며, 이를 분석하기 위해 Amos structural equation 통계분석법이 사용되었다. 이에 따른 본 연구결과는, 아동애착안정성은 어머니 애착유형과 유의미하게 관련되어 있다는 것을 증명하였고, 단 이러한 관계는 어머니 스트레스 형태를 통하여 전달 형성된다는 것을 입증하였다. 더욱이 본 연구는 어머니-아동 애착형성의 순환에 있어서 직접적인 경로가 없다는 것을 밝혀줌으로서, 세대간 불안정애착 유형 순환 붕괴의 가능성을 제시하였다.