

# The Effects of Parent's Behavior toward Preschool Children on Delay of Gratification in Children

## A Pilot Study

幼児に対する親の行動が幼児の満足遅延行動に及ぼす効果

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### 要旨

本研究の第一の目的は年齢と性別が幼児期の中のパーソナルな遅延行動（パーソナルな状況の中で即座の満足を遅延する能力）とソーシャルな遅延行動（ソーシャルな状況の中で即座の満足を遅延する能力）に及ぼす効果を検討することであった。加えて、幼児の遅延行動（パーソナルな遅延行動とソーシャルな遅延行動）と彼らの子どもに対する親の行動の関係が検討された。特に、子どもとの約束を守る傾向、親によって示されるしつけの頻度、彼らの子どもに対する親の優しさの度合い、そして親によって示される遅延行動の頻度。幼児は年少のクラスと年長のクラスに分類され、本研究の参加者となった。パーソナルな満足遅延テストは3つの報酬対を含んだ。被験者はすぐに入手できる価値の低い報酬と次の日に得られるより価値ある報酬の間で選択するように教示された。ソーシャルな満足遅延テストは社会的な状況で即座の満足を遅延する能力を測定する8項目からなっていた。クラス担任の先生がテストに応答した。子どもに対する親の行動を測定するスケールが考案され、幼児の親に実施された。この研究は小さなサンプルを用いたパイロット研究であった。本研究の発見はパーソナルな遅延行動とソーシャルな遅延行動は幼児期の中に発達すること、子どもとの約束を守ること、そして子どもに優しく接しないことがそれぞれ年長児のソーシャルな遅延行動の発達に、そして女兒のソーシャルな遅延行動の発達に重要な役割を果たすことを示した。

**キーワード**：満足の遅延、ソーシャルな満足の遅延、パーソナルな満足の遅延、  
子どもに対する親の行動、幼児

The first purpose of the present study was to investigate the effects of age and gender on personal delayed behavior (i.e., the ability to delay immediate gratification in personal situations) and social delayed behavior (i.e., the ability to delay immediate gratification in social situations) during early childhood. In addition, this study aimed to investigate the relationship between preschool children's delayed behaviors (personal delayed and social delayed behaviors) and parents' behavior toward their preschool children. Specifically, the tendency to keep promises to children; the frequency of discipline displayed by parents; the degree of parental tenderness toward their children; and the frequency of delayed behavior displayed by parents. Preschool children were divided into an older and younger class and served as the participants for the present study. The personal delay of gratification test included three reward pairs. Subjects were instructed to choose between a less valuable reward which was immediately available and a more valuable reward which would be received the following day. The social delay of gratification test consisted of eight items that measured the ability to delay immediate gratification in a social situation. Teachers in charge of the class were asked to respond to the test. A scale that measured the parents' behavior towards their preschool children was devised and administered to the parents of the preschool children. This study was pilot study that used the small sample. The present study's finding may suggest that personal and social delayed behaviors develop during early childhood and that keeping promises to children and not conducting tenderly for a child played an important role in the development of social delayed behavior in the older group of preschool children and the development of social delayed behavior of girls, respectively.

Key words: delay of gratification, social delay of gratification, personal delay of gratification, parent's behavior towards child, preschool children.

It is impractical to immediately and directly translate one's desires, urges and impulses into action. Often, behaviors that would be the most immediately gratifying are prohibited by a higher authority or society at large. The developing child must simply learn to wait for rewards that may indeed be forthcoming, but often only after a delay. The ability to delay immediate gratification is integral to developing social abilities (Funder, Block & Block, 1983).

This ability is referred to as delay of gratification and has received a good deal of attention from researchers, including Mischel (1966, 1974) and his colleagues. Their studies have typically employed a paradigm in which subjects are confronted with

situations to make choices between immediately available but less valued rewards, as opposed to delayed but more valuable options. Mischel (1974) argued that the choice of delayed rewards is conceptualized as the ability to overcome the desire for immediate gratification.

In the delay of gratification paradigm proposed by Mischel (1966), failure to delay gratification resulted in the renunciation of obtaining the delayed reward and the individual suffered loss through the failure to delay gratification. We refer to this paradigm as the renunciation type paradigm and refer to delay of gratification measured in this paradigm as personal delay of gratification.

However, delay of gratification includes more than the renunciation type paradigm. In daily life, there are situations in which delay of gratification is a social norm. For example, there is a situation where a person must wait for their turn. In this situation, the failure to delay the gratification results in rule breaking. We refer to this paradigm as a transgression type paradigm and refer to delay of gratification measured in this paradigm as social delay of gratification.

Previous research has particularly focused on the developmental changes associated with the ability to delay personal gratification. Melikan (1959) presented Arab children, aged 5-10 years, with the choice between 2.5 cents that was immediately available or 5 cents to be awarded 2 days later and found that a major shift to a preponderance of delayed reward choices occurred at 6 years of age.

While Mischel and Metzner (1962), using delay intervals ranking from one day to four weeks and the choice between a small or large candy bar, located the major shift at 8.5 to 9 years of age. Nisan (1974) instructed children aged 6, 7, 8 and 9 years old to choose between an immediate reward and a delayed larger reward. Half of the children in each age group saw the rewards before choosing, while the other half did not. The results indicated that a major shift to a preponderance of delayed reward choices occurred at 7 years of age under that reward situation.

Taken together, these studies suggested that there is variation in the age at which a major shift of delayed reward choice occurs. However, the results from these studies consistently showed that preference for delayed reward is positively related to age.

These previous studies employed participants who ranged in age from kindergarten to elementary school. Considering Furhata's outlook that self-regulated behavior develops remarkably during early childhood, it is necessary to investigate the developmental changes associated with delay of gratification during early childhood.

The aforementioned studies also focused on personal delay of gratification. However, it is also important to investigate the developmental changes associated with the ability

to delay immediate gratification in social situations, i.e., social delay of gratification.

Kobayashi and Mitsutomi (2009) investigated the developmental changes associated with personal and social delay of gratification during early childhood. Additionally, they also examined gender differences in personal and social delay of gratification (Kobayashi & Mitsutomi, 2009).

Kindergarteners registered in an older class (aged 5-6 years old), middle class (aged 4-5 years old) and a younger class (aged 3-4 years old) participated in the present study. The personal delay of gratification test included three reward pairs. Subjects were instructed to choose between a less valuable reward which was immediately available and a more valuable reward which would be made available the following day. The social delay of gratification test consisted of eight items which measure the ability to delay immediate gratification in social situations. Teachers in charge of the class responded to those items.

The results indicated that developmental changes in the ability for personal delay of gratification were observed in girls and that older and younger groups had a higher ability to delay personal gratification compared to the middle age group of preschoolers. These findings suggested that the ability to delay personal gratification may be formed during the first stage of early childhood. However, this ability decreases from the first stage of development to the second stage and increases again from the second stage to the third stage.

In contrast, the developmental changes associated with social delay of gratification were not observed. Results demonstrated that girls had a higher ability for social delay of gratification for all age groups when compared to boys. The personal delay of gratification ability was also higher for girls than for boys in the younger and older groups.

The girls might be more strictly trained to self-regulate behavior than boys. Thus, the gender difference in personal and social delay of gratification might be observed. No relationship was observed between the ability for personal and social delay of gratification. This finding may suggest that the tests for personal and social delay of gratification may be measuring different aspects of the ability to delay gratification.

The first purpose of the present study was to replicate the findings from Kobayashi and Mitsutomi (2009). The second purpose was to investigate the relationship between preschool children's delay of gratification and parent's behavior towards their preschool children.

One parental behavior that was considered was the tendency to keep a promise to their children. Mischel and Grusec (1967) indicated that children were more likely to

choose a delayed reward more frequently when there was high expectancy that the delayed reward choice would lead to obtaining a reward. Mahrer (1956) also found that children chose a delayed reward more frequently when the experimenter kept their promise than when the experimenter broke their promise.

Therefore based on previous findings, it is predicted that preschool children who have parents who keep their promises would display the personal and social delayed behaviors more frequently than children who have parents who break their promises.

The second parental behavior considered was the degree of tenderness that parents displayed for their preschool children. A parent's tenderness brightens the child's future outlook and helps to develop and form future oriented behaviors such as, waiting behaviors (Klineberg, 1968).

Therefore, it was predicted that children of parents who display a higher degree of tenderness would display personal and social delay behaviors more frequently than children of parents who display a lower degree of tenderness for their children.

The third parental behavior was the degree of discipline used by the parent. Children might develop future oriented behaviors such as, waiting behavior through the discipline conducted during their socialization process.

Therefore, it was predicted that the children with parents who frequently used discipline would more likely demonstrate personal and social delayed behaviors when compared to children with parents who did not. The fourth parental behavior was the frequency of delay behavior displayed by the parents. Previous research on observational learning indicated that when children observed modeled behavior, they imitate it. That is, children who observed a role model who frequently chose to delay rewards also more frequently chose to delay rewards when compared to children who did not observe a role model who frequently chose delayed rewards (Bandura & Mischel, 1965, Staub, 1972).

Thus, it was predicted that children of parents who frequently display delayed behavior would perform personal and social delay behavior more frequently than children of parents who did not display delayed behavior. The second purpose of the present study was to measure parental behavior towards their preschool child. Specifically, the 1) tendency to keep promises, 2) degree of tenderness displayed by the parent for the child, 3) degree of discipline displayed by the parent, and 4) frequency of delay behavior displayed by the parent. We then investigated the relationship between parent's behavior and personal and social delayed behaviors displayed by their preschool children. The present study was the pilot study that used the small sample.

### Method

Subjects Preschool children registered in an older class (aged 5-6 years), a middle class (aged 4-5 years old), a younger class (aged 3-4 years old) and a toddler class (aged less than 3 years old) served as subjects.

The older class was combined with the middle class and was designated to be the older class. We also combined the younger class with the toddler class and referred to this group as the younger group. There were 33 children (13 boys , and 20 girls) in the younger group and 35 children (18 boys, 17 girls) in the older group.

### Procedure

Table 1 The parent's behavior inventory

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#### Promise

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1. You always keep the promise to the child.
  2. You treat the promise to the child lightly and it slips your memory.
  3. You apologize to child when you do not keep the promise.
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#### Tenderness

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4. You always listen when the child is talking.
  5. You spend holidays with the child as much as possible.
  6. You take labor and time, and make a lunch when the child needs a lunch.
  7. When the good things happen to your child, you enjoy those moments with child.
  8. You read a picture book with your child.
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#### Discipline

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9. You punish your child when the child behaves badly.
  10. You always encourage your child with praise when the child dose good things.
  11. Before you go to bed, you help your child get ready for the tomorrow.
  12. You teach a child to put things in order after child is done playing.
  13. You have child practice patience at the necessary time.
  14. You teach your child, “think become like this if you do, so you must not do. “.
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#### Parent's delayed behavior

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15. When the child wears the clothes by oneself, you can respect the child's independency and watch over the child even if the child takes time.
  16. You keep a signal.
  17. You wait for one's turn in the bus stop and the street care terminal.
  18. After you put the things in order, you do the things that you want to do.
  19. You are impatient.
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The parent's behavior scale was devised. This scale includes four subscales. The first subscale measures the tendency for a parent to keep promises to their child and consisted of three items. The second subscale measured the degree of parental tenderness toward their child and consisted of five items.

The third subscale measured the frequency of discipline displayed by the parent and consisted of six items. The fourth subscale measured the frequency of the parent's own delay behaviors and consisted of five items. The parents responded to the four subscales, using a five-point scale.

The experiment was conducted in a large room located in the preschool. The subjects were brought into the room in groups of three and six. Each group was accompanied by a female experimenter. The subject-experimenter pairs sat down on the floor, with a sufficient distance between one another so that the children could not hear each other.

The personal delay of gratification test was based on the delay of gratification test devised by Mischel (1966). A series of three different pairs of reward items (the rewards within each pair differed only in quantity) were set. Objects popular with preschool children were offered: an eraser, a sticker and a coloring book.

Each pair was presented separately on the floor. For each of the pairs, the subjects were asked to select either a less preferred reward that could be obtained immediately or a more preferred reward that would be available the following day.

For all reward pairs, there were three delayed rewards and one immediate reward. The pairs were randomly presented for all subjects. The number of delayed preferences for each subject was recorded and summed to create a total score of delay of gratification choices.

Eight items that described delay of gratification in social situations were used in the social delay of gratification scale. These were selected from the self-regulated scale devised by Kashiwagi (1992). This scale is shown in Table 2. The teacher in charge of the class rated the preschool children's ability to delay gratification in social situations,

using a five-point scale.

Table 2 Social delay of gratification test

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1. The child can wait when instructed to wait a minute..
  2. The child immediately robs the toy from a friend when he or she wants it.
  3. The child can wait for a turn in the play.
  4. The child can play on the swing or slide in turn or exchange with other child.
  5. The child can wait for the midafternoon snack to be distributed.
  6. The child can wait to speak to the teacher when other child is speaking.
  7. The child can wait for a turn when a large crowd of children are either speaking or discussing.
  8. The child can wait when instructed to do something later.
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### Results

In the personal delay of gratification test, we obtained and analyzed data from all subjects. Table 3 presents the mean personal delay scores for boys and girls for each age group. Using the personal delay scores as the dependent variable, a 2 (age)  $\times$  2 (gender) ANOVA was performed. The main effect for age ( $F = 3.12$ ,  $df = 1/64$ ,  $p = 0.08$ ) and the interaction effect between age and gender ( $F = 2.95$ ,  $df = 1/64$ ,  $p = 0.09$ ) approached significance.

Table 3 The mean personal delay scores for each group

Younger group		Older group	
Boys	Girls	Boys	Girls
1.15	0.65	1.16	1.59

First, the simple main effects for age were analyzed for boys and girls. The results indicated that the simple main effect for age was significant for girls ( $F = 6.08$ ,  $df = 1/64$ ,  $p < 0.05$ ) and that the older group had higher personal delay scores when compared to the younger group. Finally, the simple main effect for gender was analyzed for each age group. Results indicated that there were no significant main effects for gender within each age group.



Of the subjects who participated in the personal delay of gratification test, we could not obtain the data from four younger children (3 boys, 1 girl) and two older children (1 boy, 1 girl) for the social delay of gratification test. Therefore, 29 younger children (10 boys, 19 girls) and 33 older children (17 boys, 16 girls) were included in the following analyses.

Table 4 The mean social delay scores for each group

Younger group		Older group	
Boys	Girls	Boys	Girls
28.8	28.84	33.53	37.25

Table 4 presents mean social delay scores for boys and girls within each age group. Using the social delay scores as the dependent variable, a 2 (age)  $\times$  2 (gender) ANOVA was performed. The main effect of age was significant ( $F = 23.07$ ,  $df = 1/58$ ,  $p < 0.01$ ) and the older group had the higher social delay scores than the younger group.

When examining the relationship between personal and social delay scores, a significant correlation was not found when we included both age and gender in the analyses ( $r = 0.20$ ).

Correlation coefficients between personal delay scores and social delay scores were calculated for each age group. However, significant correlations were not observed for either age group (younger group:  $r = -0.00$ , older group:  $r = 0.18$ ).

Finally, the correlation coefficients between personal delay scores and social delay scores were calculated for boys and girls. Again, no significant correlations were found for either boys or girls (boys:  $r = 0.18$ , girls:  $r = 0.22$ ).

Factor analyses were performed on the parents' behavior scale items. A four-factor solution, using principal factor analysis with varimax rotation, yielded the most conceptually and empirically interpretable set of factors. Subscales derived from factor analysis and factor loading for the items are presented in Table 5. Items displaying a factor loading of less than .40 within any factor were excluded.

Table 5 Results of factor analysis

	I	II	III	IV
You always listen when the child is talking.	.60	-.09	.12	.07
You always keep promise to the child.	.74	-.13	-.12	.07
You treat the promise to the child lightly and it slips your memory.	-.46	.20	-.22	.02
You apologize to the child when you do not keep the promise.	.60	.31	.33	.05
You wait your turn at the buss stop and at the street care terminal.	.24	.47	.23	-.09
You always encourage your child with praise when the child does good things.	-.07	.42	-.11	.00
Before you go to bed, you help your child get ready for tommorow.	-.23	.40	.38	.37
You punish your child when the child behaves badly.	.18	.69	.07	.18
You teach your child to put things in order after he/she is done playing.	.08	.60	-.01	-.00
You read a picture book with your child.	-.03	-.12	.68	-.08
You spend holidays with the child as much as possible.	.06	.16	.49	-.32
You teach your child, “things become like this if you do, so you must not do. “	.28	.15	.41	.13
When the goods things happen to your child, you enjoy those moments with the child.	.27	.20	.12	.57
After you put things in order, you do the things that you want to do.	-.07	-.34	.27	-.47

Factors 1 was designated as making promises and Factor 2 was discipline. Factor 3 assessed tenderness and Factor 4 measured a child centered principal.

First, the relationships between personal delayed behavior in preschool children and parents' behavior towards children were analyzed. In analyzing this relationship, 12 younger children (5 boys, 7 girls) and 18 older children (12 boys, 6 girls) had complete data for the two tests.

We combined the data from the boys with data from the girls and calculated the correlation coefficients between personal delay scores and the four parental behavior scores within each age group. The results are shown in Tables 6 and 7. No significant relationships were found within either age group for all four parental behavior subscales (see Tables 6 and 7).

Table 6 The correlation coefficients between two delay scores and four parents' behavior scores (younger group)

	Personal delay scores	Social delay scores
Promise scores	-.19	-.34
Discipline scores	-.25	-.22
Affection scores	-.06	-.40
Child centered principal Scores	.08	.23

Table 7 The correlation coefficients between two delay scores and four parents' behavior scores (older group)

	Personal delay scores	Social delay scores
Promise scores	-.02	.43+
Discipline scores	.30	-.32
Affection scores	.19	-.00
Child centered principal Scores	.15	-.20

Furthermore, we combined the data from the younger group with data from the older group and calculated the correlation coefficients between personal delay scores and parental behavior scores within each gender group. The results are shown in Tables 8 and 9. As shown in Tables 8 and 9, no significant correlations were found in boys or girls for all four parental behavior subscales.

Table 8 The correlation coefficients between two delay scores and four parents' behavior scores (boy)

scores	(boy)	
	Personal delay scores	Social delay scores
Promise scores	-.02	.10
Discipline scores	.09	-.21
Affection scores	.19	.14
Child centered principal Scores	-.10	-.30

Table 9 The correlation coefficients between two delay scores and four parents' behavior scores (girl)

scores	(girl)	
	Personal delay scores	Social delay scores
Promise scores	-.32	-.19
Discipline scores	.05	-.27
Affection scores	-.06	-.49+
Child centered principal Scores	.28	-.13

We also created four groups across age and gender combined into one and calculated the correlation coefficients between personal delay scores and all four parental behavior scores. As shown in Table 10, a significant correlation coefficient was not obtained for parental behavior scores.

Table10 The correlation coefficients between two delay scores and four parents' behavior scores (total)

scores	(total)	
	Personal delay scores	Social delay scores
Promise scores	-.11	-.02
Discipline scores	.08	-.24
Affection scores	.08	-.18
Child centered principal Scores	.07	-.20

Finally, the relationship between social delayed behavior in preschool children and parents' behavior toward their children were analyzed. In analyzing this relationship, 12 younger children (5 boys, 7 girls) and 18 older children (12 boys, 6 girls) had complete data for the two tests and were included in the present analyses.

Additionally, we combined data from the boys with data from the girls and the correlation coefficients for social delay scores for the preschool children and parental behavior scores were calculated for each age group. These results are shown in Tables 6 and 7. As shown in Table 7, the positive correlation coefficient between social delay scores and scores from the promises subscale approached significance, but only within the older group. Correlation between social delay scores and promise scores for older boys and older girls group were similar to the total older group to some degree.

Furthermore, we combined the data from the older group with data from the younger group and calculated correlation coefficients between social delay scores and parents' behavior scores for each gender group. These results are presented in Tables 8 and 9. As shown in Table 9, the negative correlation coefficients between the social delay scores and tenderness scores approached significance for the girls group. Correlation between social delay scores and tenderness scores for the older girls and the younger girls were similar to the total girls group to some degree.

Additionally, we created four groups and combined groups across age and gender into one and calculated correlation coefficients for social delay scores with the four parental behavior scores. These results are shown in Table 10. As shown in Table 10, no significant correlations were found between social delay scores and the four parental behavior scores.

## Discussion

The development of personal delay of gratification during early childhood was observed for girls. Additionally, an older group of preschool children had higher personal delay scores when compared to a younger group. These results are related to developmental changes that occur in children as they learn and grow.

In contrast, Kobayashi and Mitsutomi (2009) found age affected personal delay of gratification for girls; also younger and older groups had higher personal delay scores than the middle group of preschoolers. Thus, the effect of age on personal delay of gratification according to Kobayashi and Mitsutomi (2009) was different from the present study's findings.

However, the subjects' ages were different in the Kobayashi and Mitsutomi (2009) study. The older group used in the present study was equivalent to a combination of the

older group and middle age group used by Kobayashi and Mitsutomi (2009). The younger group used in the present study was equivalent to a combination of a younger group used in the Kobayashi and Mitsutomi (2009) study and toddler group.

Therefore, we may not be able to generally compare the results from the present study with that of Kobayashi and Mitsutomi (2009). Thus, it is necessary to investigate the effects of age on delay of gratification ability during early childhood in greater detail, and include and assess preschool children at various ages.

Also, gender differences were observed in Kobayashi and Mitsutomi (2009) where girls scored higher than boys on personal delay of gratification. However, gender differences in personal delay of gratification were not observed in the present study. Further research is needed to better understand these inconsistent results.

The effects of age on social delay of gratification during early childhood were observed and social delay scores were higher for the older group than the younger group. However, the effects of age on social delay of gratification during early childhood were not observed in the Kobayashi and Mitsutomi (2009) study. As described above, subjects' ages were different in Kobayashi and Mitsutomi (2009). Therefore, a direct comparison between the present study's findings and that of Kobayashi and Mitsutomi (2009) may not be possible. Thus, it may be necessary to include preschool children at various ages and investigate the effect of age on social delay of gratification during early childhood in greater detail.

Gender differences in social delay of gratification were observed in the Kobayashi and Mitsutomi (2009) study where girls scored higher on social delay scores than boys. This suggested that the girls might be more strictly trained to self-regulate one's behavior more strictly than boys. However, there were no gender differences in social delay of gratification in the present study. Further research is needed to better understand these inconsistent results.

In the present study, personal delay scores did not correlate with social delay scores. These results were consistent with that of Kobayashi and Mitsutomi (2009). Personal delay of gratification test and social delay of gratification test may be measuring different aspects of delay of gratification. That is, personal delay of gratification test might measure personal goal oriented behavior; whereas social delay of gratification test measures the ability to delay immediate gratification in social situations.

The second purpose of the present study was to investigate the relationship between parental behavior towards their preschool children and personal and social delayed behaviors displayed by children.

It was predicted that children who had parents that kept their promises would

more frequently display personal and social delayed behavior than children who have parents who break their promises. Looking at the result, positive correlation coefficients between the promise subscale scores and social delay scores were observed for the only older group. Thus, the hypothesis was partially supported.

This result might be interpreted as follows. The younger group of children may not have yet developed the capacity to inhibit their impulsive behavior. Therefore, children might not display social delayed behavior.

However, the older group of preschool children might develop the capacity to inhibit their impulsive behavior. Then, they might trust with the others and display social delayed behavior when parents keep their promises with their children. However, the older group of preschool children that can inhibit their impulsive behavior might not trust with the others and not display the social delayed behavior when the parent does not keep their promise with their child. Thus, keeping the promise with the child might play an important role in their development of the social delayed behavior of the older group.

It was also predicted that children with parents who conduct more tenderly for their child would also display personal and social delayed behaviors more frequently. The negative correlation coefficient between parent's attitude that conduct tenderly for their child and social delay of child were also observed but only for girls. Thus, the hypothesis was not supported.

These findings may be interpreted as follows: Girls may develop stronger ego strength when their parents did not conduct tenderly for their child. Thus, not conducting tenderly for their child may play an important role in the development of social delayed behavior, especially in the case of girls.

In the case of boys, the relationship between not conducting tenderly for the child and social delay behavior of preschool children was not observed. Further research is needed better to understand this result.

It was predicated that children who have parents who displayed a high degree of discipline would also more frequently display personal and social delayed behaviors. However, this hypothesis was not supported. Further research is needed to better understand the result of the present study.

It was predicated that children who have parents who display delayed behaviors more frequently would also display personal and social delayed behaviors more frequently. Looking at the results concerning the factor analysis of the parental behavior scale, a concrete factor structure for parents' delayed behaviors was not extracted. Thus, additional research is needed to investigate the validity of this

hypothesis.

In the present study, the correlation coefficients between the four parental behavioral scores and personal delay scores were not observed. This result might be interpreted as follows. Personal delayed behaviors may be one that is not frequently observed during daily life. Conversely, parents' behavioral scale measures the interaction between parents and children which occur frequently in daily life. Therefore, the relationship might not be observed between the parents' behavioral scale which measures the interaction between parents and children which may frequently occur during daily life settings or personal delayed behaviors measured within experimental situations that may not occur in daily life.

In conclusion, it might be suggested that personal and social delayed behaviors develop during early childhood and that social agent had better keeping promises to children and not conducting tenderly with child in promoting the development of socially delayed behaviors for the older group of preschool children and the development of socially delayed behavior in girls, respectively.

The present study was the pilot study that used the small sample. Further research is needed to conduct the research that used the large sample.

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