

# Contributions of Family Processes to the Development of Delay of Gratification in Preschool-aged Children

**Contributions of Family Processes to the Development of Delay of Gratification in Preschool-aged Children**  
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**Background**  
 Delay of Gratification (DG) is the ability to inhibit immediate gratification in order to attain greater, longer-term rewards (Mischel, 1958; Mischel, Shoda, & Rodriguez, 1988).  
 DG is a developmental trait that is affected by various factors, including the development of DG in a child's parents during their own childhood, or caregivers play a role in the child's DG. During the early years, parents and caregivers play a role in the child's DG, and children gradually learn to regulate their impulses and

**Method**  
**Participants**  
 A subset of the nationally representative sample from the Singapore Longitudinal Family Development Study (SLFDS) conducted in 2012-13.  
 A total of 2,236 children (37% girls) aged 4.5 (Range: 3.02-5.02).  
 57% Chinese, 13.8% Malay, 11.8% Indian, and 17.6% other nationalities.  
 Primary caregivers (PCs): 58.8% mothers, 3.8% fathers, and 1.4% other adults.  
**Procedure**  
 Data was collected during a home visit by expert interviewers. Child interviewers conducted the child assessment with the child, and PC interviewers conducted a set of assessments with the PC.  
**Measures**  
 With permission and parents' informed consent, children

**Results**  
 DG is a function of age and gender, with improvement as a function of age.  
 DG was positively correlated with child's cognitive ability and IQ scores.  
**Key Findings:**  
 Primary caregivers' education level predicted a young child's DG.  
 Family income did not predict DG.  
**Parental Attitudes:**  
 DG was predicted by lower family economic stress, but not by parenting stress.  
 DG was predicted by primary caregiver's verbal cognition ability and self-control.  
 Parental beliefs may explain the influence of primary caregiver's education level.  
**Parenting Behaviors:**  
 DG was associated with positive parental control (e.g., limit setting), negative parental control (e.g., harsh punishment and over-protectiveness), and low indulgent parenting.  
 Limit setting may carry the effect of primary caregiver's self-control on the child's DG.  
**Family Child-Adults and Home Environment:**  
 DG was associated with the child's closeness to father, but it was not associated with the child's closeness to mother or family conflict.  
 DG was positively related to a more regulated home environment.

	Age	Gender	PC Education	Family Income	Parenting Stress	Parental Control	Family Conflict	Child IQ
DG	0.12	0.05	0.08	0.02	-0.03	0.04	0.01	0.15

**Discussion**  
 Overall, the self-regulatory dimension of temperament, as well as family income, child's cognitive abilities and IQ scores, which facilitate their DG.  
 Although family income did not predict a young child's DG, economic stress (lower the family income) may be related to the child's DG.  
 DG, as a family process, may be influenced by the family's socio-economic status (e.g., IQ).

**Take-Home Message**  
 "Control" is usually imposed externally by parents or caregivers, then internalized by children.  
 Parents play an essential role in supporting preschoolers' self-regulation skills by modeling, guiding, and enforcing rules that facilitates preschoolers' internalized rules.  
 Parents and caregivers can set rules, models, to show young children how to self-regulate their impulses.  
 Parents' expressions of their emotions and reactions can guide children to regulate their behaviors.  
 The positive control (limit setting) may set limit setting and control rules, which have limited power over the children's self-regulation of their behaviors.

VIDEO SESSION | CHAT SESSION | NARRATION | ABSTRACT | CONTACT AUTHOR | PRINT

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PRESENTED AT:



**SRCD**  
 Society for Research in Child Development

**2021 Virtual BIENNIAL MEETING**

**APRIL 7-9, 2021**

# BACKGROUND

Delay of Gratification (DoG) is the ability to inhibit immediate gratification in order to attain greater future rewards (Mischel, 1974; Mischel, Shoda, & Rodriguez, 1989).

With temperament (such as effortful control) as a basis, the development of DoG is a socialization process during which parents or caregivers play crucial roles (Eisenberg et al., 2005; Kochanska, Murray, & Harlan, 2000).

During the very early years, control is usually imposed externally to young children, and children gradually learn how to control their impulses and show more socially acceptable behaviors, and finally internally regulate their behaviors (Eisenberg et al., 2005; Kopp, 1982).

## **DoG is influenced by parenting behaviors:**

- **Positive control:** When parents use more guiding, teaching and encouragement to control their child, children are more likely to have higher levels of self-regulation (Karrenman et al., 2006).
- **Negative control:** The use of more power-assertive controlling strategies is associated with a lower level of self-regulation in children (Crockenberg & Litman, 1990; Kochanska & Aksan, 1995; Kochanska & Knaack, 2003; Silverman & Ragusa, 1990).
- **Responsiveness/warmth:** It was less significantly related to self-regulation in children, although it may be an important dimension for the development of self-concept or well-being (Amato & Fowler, 2002; Brophy & Dunn, 2002).

Parents play an essential role in nurturing preschoolers' self-regulation skills by modeling, guiding, and enforcing rules then facilitating a preschooler to internalize the rules:

- This suggests that parental cognitive verbal ability and self-control may act as important factors that contribute to young children's development of DoG during the socialization process.

However, very few studies have included parental attributes, three broad types of parenting behaviors, and other family processes such as family conflict, parent-child closeness, and physical home environment in the same model, to investigate the contributions of family processes to preschool-aged children's DoG, when the child's temperament is accounted for.

# METHOD

## Participants

- A subset of the nationally-representative sample from the Singapore Longitudinal EARly Development Study (SG LEADS) conducted in 2018-19.
- A total of 2,206 children (47% girls) aged 4-6 (Mage= 5.02, SD= 0.82).
- 67.9% Chinese, 16.0% Malays, 11.6% Indian, and 4.4% other ethnicities.
- Primary caregivers (PCGs): 94.8% mothers, 3.8% fathers, and 1.4% other adults.

## Procedure

Data was collected during a home visit by a pair of interviewers. Child interviewer conducted the child assessment with the child, and PCG interviewer conducted a set of questionnaires with the PCG.

## Measures

- **DoG:** Prencipe and Zelazo's (2005) standardized choice paradigm was modified to measure DoG. Nine test trial types were created by crossing three types of reward (balloons, erasers, and stickers) and three types of choice (1 now vs. 2 later, 1 now vs. 4 later, 1 now vs. 6 later). Choosing "now" scored 0, and choosing "later" scored 1, in each trial. Scores of 9 test trials were summed to indicate DoG.
- **Effortful Control:** PCG rated the child's behaviors on 6 items selected from the CBQ-VSF (Putnam & Rothbart, 2006). Example: "when drawing or colouring in a book, (child) shows strong concentration." (1=never to 7=always)
- **Socioeconomic status (SES):** indicated by primary caregiver's education level and family annual income in the past year.
- **Economic stress:** measured by one single item "at the end of the month, do you (and your family) usually end up with some money left over, just enough to make ends meet, or not enough money to make ends meet?". (1=Some money leftover; 3=not enough to make ends meet)
- **Parenting stress:** measured by four items, such as "feeling trapped as a parent" and "feeling tired raising a family" (1=not at all true; 5=completely true).
- **Parental verbal cognitive ability:** assessed by 8 items selected from the Passage Comprehension sub-test in the Woodcock-Johnson Test of Academic Achievement.
- **Parental self-control:** measured by 7 negatively-keyed items (e.g., "Sometimes I can't stop myself from doing something, even if I know it is wrong), and 3 positively-keyed items (e.g., "I refuse things that are bad for me"). (1=Not at all like me; 5=Very much like me)
- **Parental Warmth:** Six items such as physical affection, verbal affection/responses, and spending time with the child, were used to measure parental warmth in the past month (1=not in the past month; 5=everyday).
- **Harsh Punishment:** was measured by the frequency of using five methods such as spanking, grounding, taking away privileges, or scolding, to control the child in the past month (1=not in the past month; 5=everyday).
- **Limit Setting:** Six items on children's bedtime, snacks, friends, after-school activities, and homework, as well as discussing the rules with children (1=never, 5=very often)
- **Closeness to parents:** One item captured how close the child felt to the mother and father (1=not at all close, 4=extremely).
- **Family conflict:** Five items measured the ways in which family members resolve conflicts, such as "fight as lot", "throw things", "hit each other", or "calmly discuss problems" (1=strongly disagree; 5=strongly agree)
- **Physical home environment:** Interviewer rated the home environment based on the observation during the interview, on 3 items such as whether the home is dark/perceptually monotonous, cluttered, and clean (1=not at all, 5=very).

**Statistic Analysis:** Hierarchical regression analysis.

# RESULTS

## DoG is a function of age and gender, with temperament as a basis:

- DoG developed rapidly with age in early childhood, and it favored girls.
- DoG was positively associated with effortful control, which may account for the gender difference in Delay of Gratification.

## SES:

- Primary caregiver's education level predicted a young child's DoG;
- Family income did not predict DoG.

## Stress and Parental attributes:

- DoG was predicted by lower family economic stress, but not by parenting stress;
- DoG was predicted by primary caregiver's verbal cognitive ability and self-control;
- These factors may explain the influence of primary caregiver's education level.

## Parenting behaviors:

- DoG was associated with positive parental control (e.g., limit setting);
- Negative parental control (e.g., harsh punishment) and responsiveness/warmth were not significant predictors;
- Limit setting may carry the effect of primary caregiver's self-control on the child's DoG.

## Family relationships and home environment:

- DoG was associated with the child's closeness to father, but it was not associated with the child's closeness to mother, or family conflict.
- DoG was positively related to a clean organized home environment.

	Model 1			Model 2			Model 3			Model 4			Model 5			Model 6			
	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$	
<b>Demographics</b>																			
Age	1.02	.09	.24***	1.01	.09	.24***	.99	.09	.23***	.98	.09	.23***	.98	.09	.23***	.98	.09	.23***	
Gender (Girl)	.30	.15	.04*	.21	.15	.03	.24	.15	.03	.29	.15	.04+	.29	.15	.04+	.29	.15	.04+	
<b>Temperament</b>																			
Effortful Control				.43	.10	.10***	.37	.10	.08***	.36	.10	.08***	.36	.10	.08***	.32	.10	.07**	
<b>SES</b>																			
PCG Education							.18	.04	.10***	.09	.05	.05+	.07	.05	.04	.06	.05	.04	
Log10Income							.17	.17	.02	-.15	.19	-.02	-.12	.17	-.02	-.20	.17	-.02	
<b>Primary Caregiver</b>																			
Economic Stress										-.47	.15	-.08**	-.44	.15	-.08**	-.38	.15	-.07*	
Parenting Stress										-.09	.08	.03	.07	.08	.02	.07	.08	.02	
PCG Verbal Cognition										.12	.04	.08**	.11	.04	.07**	.10	.04	.06*	
PCG Self-Control										.32	.15	.05*	.29	.15	.05+	.24	.16	.04	
<b>Parenting</b>																			
Parental Warmth													.06	.20	.007	-.10	.21	-.01	
Harsh Punishment													-.05	.15	-.008	-.03	.15	-.005	
Limit-Setting													.27	.11	.06*	.22	.11	.05*	
<b>Family</b>																			
Family Conflict																-.12	.19	-.01	
Closeness to mothers																.40	.29	.03	
Closeness to fathers																.32	.14	.05*	
Organized Home																.25	.11	.05*	
<i>F</i>	<i>F</i> (2, 1967) = 61.6***			<i>F</i> (3, 1966) = 47.8***			<i>F</i> (5, 1964) = 34.5***			<i>F</i> (9, 1960) = 22.9***			<i>F</i> (12, 1957) = 17.7***			<i>F</i> (16, 1953) = 14.3***			
<i>Adjusted R<sup>2</sup></i>	.659***			.609***			.513***			.414***			.303+			.207**			

\*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ , + $p < .10$ .

# DISCUSSION

**Effortful control, the self-regulatory dimension of temperament, acts as a basis.**

- Children high on effortful control have better ability to efficiently shift and focus attention, inhibit dominant responses and follow instruction, which facilitate them to delay gratification.

**Although family income did not predict a young child's DoG, economic stress (whether the family makes ends meet) was related to the child's DoG.**

- DoG, as a future-orientated self-control construct, may be influenced by the family's future-orientation to plan for the expenditure (e.g., to save up money rather than using up money earned in the month to enjoy the present).

**Primary caregiver's education level predicted the child's DoG, and the effect may be explained by primary caregiver's cognitive verbal ability and self-control.**

- With better cognitive verbal ability, primary caregivers are able to use appropriate instructions to guide, teach and encourage children to regulate their behaviors;
- Primary caregivers with a higher level of self-control to resist temptation and inhibit unfavorable behaviors, can act as good role models for their children to learn how to regulate behaviors.

**Positive parental control (i.e., limit setting) was associated with young children's DoG, but negative parental control (i.e., harsh punishment) and warmth did not act as significant predictors.**

- Parents generally tend to build a responsive and warm relationship with their children, whereas the levels of parental control usually vary.
- Positive parental control such as limit setting, guidance and instructional behavior, directiveness with low to moderate power assertion, is crucial to assist children in internally regulating their behaviors, and eventually to delay gratification.

**Father-child closeness was positively related to a young child's DoG; but mother-child closeness and family conflict did not show significant associations with DoG.**

- Paternal parenting contributed to self-regulation over and above maternal parenting (Karreman et al., 2008).
- Although resolving family conflicts in an impulsive way may create a detrimental environment for a child to inhibit dominant responses, if the conflicts usually happen when the child is absent, the influence on children's behavior may be less significant.

**An organized and clean home environment was associated with a child's greater ability to delay gratification.**

- Cleanliness, clutteredness and darkness of the house reflects family members' self-regulatory abilities, and the enforcement of rules to tidy up the home regularly. This process reinforces young children's self-regulation.

# TAKE-HOME MESSAGE

**"Control" is usually imposed externally by parents or caregivers, then internalized by children.**

**Parents play an essential role in nurturing preschoolers' self-regulation skills by modeling, guiding, and enforcing rules then facilitating a preschooler to internalize the rules.**

- Parents and caregivers can act as role models to show young children how to resist temptation and inhibit certain behaviors.
- Parental expressivity with richer vocabularies and reasoning can guide children to regulate their behaviors.

**Use positive Control instead of negative control:** Limit setting and enforced rules, with low to moderate power assertion can facilitate children to internally regulate their behaviors.

**Paternal involvement plays an essential role in shaping a child's behaviors.**

**Physical environment may implicitly influence children's self-regulation.**

# ABSTRACT

We explored how family socioeconomic status, parental verbal cognitive and self-regulatory abilities, parenting behaviors, family relationships and physical home environment contribute to preschool-aged children's Delay of Gratification. Study was conducted in a nationally representative sample of 2,206 children aged between 4 and 6 years (47% girls;  $M_{age}=5.02, SD=0.82$ ) in Singapore. Children completed the Delay of Gratification task. Their primary caregivers (94.8% mothers, 3.8% fathers, and 1.4% other adults) completed a set of questionnaires. Physical home environment was rated by the interviewer. Hierarchical regression analysis was performed. Firstly, Delay of Gratification was positively related to effortful control, the regulatory dimension of temperament. Secondly, Delay of Gratification was predicted from primary caregiver's education level, but not from family income. Next, primary caregiver's self-control, cognitive verbal ability, as well as low economic stress, but not parenting stress, predicted a young child's greater ability to delay gratification. Furthermore, positive parental control (i.e., limit-setting), rather than negative parental control (i.e., harsh punishment) and warmth, was associated with the child's Delay of Gratification. Lastly, father-child closeness and an organized home environment were positively related to Delay of Gratification, whereas mother-child closeness and family conflicts did not act as significant predictors in the final model. Findings have added to the literature on the dynamics underlying the development of self-regulation in early childhood.