

**THE EFFECT OF PARENTING STYLES OF MOTHERS ON DELAY OF
GRATIFICATION, AND ITS RELATIONSHIP WITH THE COGNITIVE
ABILITIES IN PRESCHOOL CHILDREN**

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Thesis submitted

In partial fulfilment of the requirement for the degree of

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PATIALA

JUNE, 2018

CERTIFICATE

This is to certify that the thesis entitled “**The effect of parenting styles of mothers on delay of gratification, and its relationship with the cognitive abilities in preschool children**” being submitted in partial fulfilment of requirements for the award of degree of **Master of Arts in Psychology**, in the **School of Humanities and Social Sciences, Thapar Institute of Engineering and Technology, Patiala** is a bonafide work carried out under the supervision of **Dr. Santha Kumari**, Professor & Head, School of Humanities and Social Sciences, Thapar Institute of Engineering and Technology, Patiala and that no part of this project has been submitted for the award of any other degree.



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CANDIDATE'S DECLARATION

I hereby declare that the work presented in this thesis entitled in partial fulfilment of the requirement for the award of Degree of **Master of Arts in Psychology**, submitted in the **School of Humanities and Social Sciences, Thapar Institute of Engineering and Technology**, Patiala is an authentic record of my own work carried out under the supervision and guidance of **Dr. Santha Kumari**, Professor & Head, School of Humanities and Social Sciences, Thapar Institute of Engineering and Technology, Patiala and refers other researchers' work which are duly listed in the reference section.

The matter embodied in this thesis has not formed the basis for the award of any other degree of this or any other institute.

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ABSTRACT

The present study attempted to study the impact of parenting styles on delay of gratification and cognitive abilities, and also the relationship between delay of gratification and cognitive abilities of a child. The sample comprised of 33 male preschoolers of age range 3-4years old and also their respective mothers of the age 25-30years old. The mothers were asked to respond to a self-assessment parenting questionnaire, while the children participated in experiments assessing delay of gratification and cognitive abilities. For the result analysis, descriptive statistics to describe the results; correlation and regression were used. The results obtained in the study were not very significant and there are many reasons attributing to it; but the major reason researcher could find was the small sample size (N=33). However, an inclination towards significance could be seen in the impact of authoritarian and permissive parenting styles on delay of gratification. As hypothesised, the findings were not that evident but a pattern could be observed that these parenting styles have a negative effect on delay of gratification in children; inconclusive results were found for authoritative parenting style. Secondly, it was hypothesised that there is no impact of parenting styles on child's cognitive abilities; the hypotheses were accepted for authoritarian and permissive styles but there was a deviation in the case of authoritative style where they seem to have a positive relationship. The present research also studies the relationship between gratification delay and cognitive abilities in children. It was proposed that toddlers with higher gratification skills have higher cognitive abilities. The hypothesis was accepted as a positive relationship was observed in the study. Further implications, limitations and future research direction have been discussed in the study.

Keywords: Delay of Gratification, Parenting Styles, Cognitive Abilities.

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CHAPTER 1

INTRODUCTION

Parenting styles have evolved through times and research. Scholars have studied effects of different parenting styles with respect to different variables such as working memory, spatial ability, etc. Some of these studies have tried to generate awareness about specific styles of parenting as the means to develop certain abilities in children.

Similarly, cognitive functions and different intellectual abilities start developing in a mother's womb. We know that a lot of care and attention goes into building a child into an adult. Thus apart from all the other necessary elements required to groom the personality of the child, parenting is the most important tangible element that is vital for a child's ideal bringing up.

This study aims to study how parenting styles have an impact on delay of gratification and cognitive abilities of children and also to study how delay of gratification influences cognitive abilities in toddlers.

Mischel defined Delay of Gratification in a study in 1996 as the ability to resist an immediately available small reward for a reward that may seem distant but hold a significant value for the person. For example, the famous "Marshmallow" experiment. This experiment was conducted on children to assess their gratification delay. It comprised of a child's exposure to the marshmallow. The child was then instructed that the examiner has to go out of the room and that he could get two marshmallows if he waits for the examiner to come back; or else he could simply ring the bell to call the examiner and have the one marshmallow present in front of him. The wait for the examiner to come back and reward the child with two marshmallows is what determines delay of gratification. This experiment marked the history in the delay of gratification studies.

Mischel and Metcalfe (1999) observed in their study that impulsivity and delay of gratification also have a connection. The individuals with higher impulsivity levels or "hot"

responses meant that they are likely to have lesser degree of gratification delay, whereas ones with lower impulsivity levels or “cold” responses meant that they are likely to have a higher degree of gratification delay. The “hot” response is a process where decisions are taken too quickly, impulsively and emotionally without giving too much of an external thought. The “hot” responses are aggravated by stress, whereas the “cool” method works on slow, calculated thought and contemplation. The cool requires reflection and disciplined decision making along with a calculated plan for the achievement of a goal.

There have been many contributing factors to delay of gratification, including parenting styles adopted by parents in the rearing of their child. Mauro and Harris (2000) reported that usually some particular parenting styles and practices are responsible in shaping a child’s competence. Parenting is the continuous promotion of the physical, social, intellectual, and emotional development of children from their infancy to adulthood. Parenting has been defined by Kendziora & O’Leary (1993) as “anything the parent does or fails to do that may affect the child”. It is a psychological construct that represents various general strategies that parents use in bringing up their children.

According to Maccoby & Martin (1983), parenting style is made of many codependant elements two of which are: “responsiveness” and “demandingness”. Parental responsiveness which in simpler terms can be referred to as parent’s warmth and support towards the child is interpreted by Baumrind (1991) as the “extent to which parents intentionally foster individuality, self-assertion and self-regulation. by being supportive, attuned, and acquiescent to children's special needs and demands.” Parental demandingness, however, implies supervision, disciplinary efforts and voluntary confrontation with the child who defies, as well as expectations and demand that force the children to become incorporated into the family whole (Baumrind, 1991).

Diana Baumrind (1967) distinguished three major styles, outlined below:

Authoritarian parenting style, also known as 'strict' parenting, is featured by high levels of expectation of compliance to the stated parental rules and instructions, alongside allowing little conversations between the parent and the child. Such parents may certainly show love, but mostly it is not unconditional. Their show of love depends on whether the child behaves in certain ways that seem appropriate to the parents, and abide by the parental rules. They find punishment as a resort instead of a problem solving approach, whenever they feel that their children might not have complied with their demands or have disobeyed them in any manner (p.890).

Permissive parenting style, called informally as lenient, or indulgent, is characterized as having limited expectations from the child in terms of his behavior. "in case of Permissive parenting, parents are certainly very involved with their children but place few demands or controls on them" (1967, p.889)

Authoritative parenting style, also known as 'balanced' parenting, is featured by a child-centric approach where parents have high expectations of maturity from the child.. These kinds of parents understand their children's fears and feelings and teach them how to regulate them. They encourage their children to be independent but still put some controls and limits on their actions. They involve their children in the rules-making process so that their children learn discipline and are able to appreciate the rationale for rules. Their focus is to give positive feedback rather than giving punishment. Such parents show unconditional love whether or not the child performs or behaves in an expected manner (p.891)

Mischel et al., in 1989 conceptualized delayed gratification as a complex self-regulatory process enclosing many cognitive components. Specifically, Mischel and his fellow researchers (2011) proposed some cognitive processes relating to delay of gratification that need more clarity and investigation. These included cognitive functions like working

memory which keep relevant information active such as the demands of an ongoing task and the knowledge of a larger yet delayed reward.

Before the 1990s, plenty of literature that has been published, studied the effects of parenting styles and behaviors on young children's academic achievement, IQ, other cognitive abilities. These studies in particular, established the various benefits practicing authoritative parenting on children alongside asserting on the negative outcomes demonstrated by permissive and authoritarian parenting.

A study conducted in collaboration with many universities across countries, including three from the US: Florida State University, University of Nebraska and Western Illinois University, found evidence to support that parenting posed "a marginal and inconsistent influence" on the IQ and other cognitive abilities of a child. The weak associations were found in both the national sample and the adopted sub-sample.

Researcher Kevin Beaver (2013) stated that past research concluding that parenting styles and related behaviors influenced significantly a child's intelligence and cognition may be lacking important evidence, as the studies likely did not factor in genetic transmission.

The results of yet another study conducted by Tiller (2003), however, showed a mix of expected and unexpected results, and some powerful and significant relationships between the various styles of parenting adopted by parents and cognitive abilities in their children. However, the findings remain somewhat inconclusive, and therefore need further clarification into how the differences in parenting styles affect the development of cognitive abilities in young children.

CHAPTER 2

REVIEW OF LITERATURE

2.1 Delay of gratification

Initially Mischel considered that delay of gratification might be a set of skills that could be improved through various strategies developed specifically to teach how to delay gratification. He stressed that the successful ability of a child to delay gratification is based on meta-cognitive intuitiveness, cognitive competency, and practiced discipline. However, all of these qualities can be developed with proper and regular training. From the 1960s till the 1970's, similar experiments were conducted by Mischel, on the lines of his earlier conducted Marshmallow experiments, this time at the Stanford University taking American preschoolers as participants. He used different kinds of rewards like candies, pretzels, peanuts and even financial rewards.

The classic task of delay of gratification, which is known informally as the 'marshmallow task' was by Mischel, Ebbesen, and Zeiss in 1972. In this task, participating children were given a choice between eating one treat of their liking immediately, or being patient for 15 minutes and receiving a second treat.

Tasks for assessing delay of gratification involve a person laying aside obtaining instant gratification by refusing to give in to immediate smaller rewards for much larger but delayed rewards. Mischel, 1974 describe having the ability to effectively delay gratification as an individual's preference for larger and additionally delayed rewards over instantly obtainable smaller rewards.

Alternative theories around the concept of delay of gratification include the works of Snow et al. in 1996. Snow (1996) and Metcalfe and Mischel (1999) hypothesized that gratification delay is directly associated with a child's unforced/willingly practiced discipline and various

strategies and techniques that can assist a child's ability to practice delay of gratification. However, Metcalfe, Mischel and Bembenuty in 1999 found substantial proof that the level of gratification delay is restricted to its domain.

Silva and Gross (2004) conducted an experiment that was similar to the previously done studies of Wulfert et al. (2002) and Kirby et al. (2002). All of these used the exact same population i.e. university students. The Silva and Gross study also had financial rewards like in the previous studies. But it also included another reward of extra-credit work which was more academically relevant to the students. The two studies yielded similar results.

Students participating in the previous study who usually got better grades discounted the instant monetary rewards more than their college-mates who usually got lower grades. In the second study, it was observed that the higher-scoring students discounted the delayed reward of extra-credit work less than the lower-scoring students who could actually have gained from its use.

Rewards have often been used to measure the proliferation of delay discounting in the assessing the delay of gratification. Kirby et al. (2005) stated that if the rate of the discount was greater, the student put lesser value on the future reward. But if the discount given was low or negligible, the student would have no will to receive it immediately. In that case, the student had no interest in however long the delay might be.

According to Kirby, Winston, and Santiesteban (2005), delay discounting decreases the perceived value of any delayed reward when the amount of time to get the reward is increased. Hence the time and value in this case are inversely proportional. Changing rewards can have a changed effect on the results of such studies.

Duckworth et al., 2013 stated that effortful self-control was the key to enhance the ability to delay gratification. The whole process delay of gratification revolves around two systems: a "hot" and a "cool" one. The hot system refers to the use of an emotional response and cool

system makes use of the cognitive response. The “hot” system is about either approaching or avoiding different kinds of stimuli for one’s survival, whereas, the “cool” system generates self control, the ability to delay gratification and ahead thinking of strategic and rational behavior slowly.

Delay of gratification levels depend on the capability of the “cool” system as to how efficiently it is able to cool down the “hot” emotional system to avoid instant decision making in terms of receiving rewards and delaying them.

2.2 Parenting styles and its relation to delay of gratification

Baumrind (1971) gave three parenting styles i.e. authoritarian, authoritative and permissive, are one of the most accepted theoretical analyses on parenting. These parenting styles have been widely referred to in parenting studies of the West (Patrick, Nicklas, Hughes, & Morales, 2005; Chao, 2000).

Maccoby and Martin, 1983 stated that parenting style outlines two very important elements of parenting: “responsiveness” and “demandingness”. Child-rearing approaches taken by mothers have been found as significant in developing children's capability to delay gratification according to studies conducted by Olson et al. (1990) and Vaughn et al. (1984).

A number of studies have examined the possible factors that contribute to the development of the ability to delay gratification. Some of these factors stated are choice by Hom and Fabes (1984), Horn and Knight (1996) are parental knowledge, parental discipline style by Mauro and Harris (2000); and self- discovery technique used to delay gratification.

Reitman and Gross (1997), Mauro and Harris (2000) have reported evidence that over-controlling mothers and permissive mothers are less able to efficiently develop self-regulation in their children as compared to authoritative mothers.

Mauro and Harris (2000) reported that general parenting styles have a part in shaping children's competence. Parenting has also been defined as “anything the parent does or fails

to do that may affect the child” (Kendziora and O’Leary, 1993). Parenting behaviors are the specific, goal-directed actions which impact directly on the child (e.g., discipline, reasoning). During the preschool period, children start individuating and asserting their independence. His study focusing on the influence of teaching strategies used by mothers and their attitudes towards child-rearing on preschoolers’ development of delay of gratification, demonstrated that the children who had troubles in inhibiting to touch a brightly wrapped gift once their mothers left, had been raised through permissive parenting style.

As per studies conducted by Zimmerman (2001) and Butler (2002), self-regulation is fundamental to managing their own behavior and learning in individuals. It was also stated by Bronson (2001), that developing capacity for gratification delay represents a significant achievement of childhood which further affects social, behavioral and academic competence. Furthermore, individuals who are unable to delay gratification, require it instantly or immediately and therefore they might suffer from low impulse control.

Many researchers have studied the authoritarian, authoritative, and permissive parenting styles of Chinese parents who mediate children’s behaviors to delay gratification. Zhou et al. (2005) and Eisenberg et al. (2009) conducted studies involving Chinese parents reported that the authoritative parenting style had positive outcomes on children’s success, such as self-reliance, better self-discipline, academic success, social acceptance and higher levels of self-regulation . On the other hand, the authoritarian and permissive parenting styles of the same population have been related with children’s lesser ability to delay gratification, arrogant behaviors and other adjustment problems.

2.3 Parenting styles and its relation to cognitive abilities

Baumrind (1978) mentioned three kinds of parenting styles: authoritarian, permissive, and authoritative, have often been used in studies examining parenting styles in association with cognitive variables, like academic achievement, aggression, self-confidence, substance abuse etc. Researchers have integrated these three parenting styles on a regular basis and in many situations.

However there is a fourth kind of parenting style that Maccoby and Martin (1983), named 'Indifferent- Uninvolved'. They described these parents as detached from their children emotionally. Indifferent-uninvolved, also called neglectful parents tend to maintain a distance from their children, responding to their demands only when they want no more of them.. Very less information exists about this style of parenting, and research on such parents is lacking. The reason for lack of research on them is that they are typically unresponsive or uninvolved in the lives of their children and, hence, refuse to participate in such studies.

Dornbusch et al (1987) conducted studies on adolescents and reported that the higher grades were negatively correlated with the permissive and authoritarian parenting style. Meanwhile, authoritative parenting style seemed to have a positive correlation with the grades attained. Environmentalists think that cognition (intelligence) is learned and acquired through the environment.

"Deprived experiments" are created to determine whether intelligence and other cognitive behaviours are innate or acquired. The aim of such experiments is to eliminate any external sources in order for the genes to develop on their own without any interference.

From a very early stage, subjects were brought up in an impoverished environment (Gray, 1992) which deprived them of the mere possibility of learning, practicing and observing the behaviour being experimented upon (Gray, 1992). It was naturally assumed that if a particular behaviour still developed it had to be innate, and if it did not then it must have to

be 'developed' through learning experiences and teaching strategies implemented and provided by the external factors i.e. parents, siblings etc.

Existing studies which investigate how different parenting styles impact the cognitive development of young children are very limited and studies having used the standardized tools for the measurement of cognitive abilities were not found Chen, Dong and Zhou (1997). Radziszewska, Richardson, Dent, and Flay (1996) observed somewhat similar results in their study of 15-year-olds. Leung, Lau, and Lam (1998) found in their study of adolescents that academic achievement was negatively related to authoritarianism. Boveja (1998), in his research of adolescent minority students found that adolescents who took their parents to be authoritative engaged in more effective learning and studying strategies.

The Minnesota Study of Twins who are raised apart by Bouchard et al (2001), was based on the verbal, perceptual and image rotation model of the structure of mental abilities of the twins. The results of these studies strongly support the notion that intelligence is innate and cognitive abilities are affected by genes.

A study conducted by Amy Tiller (2003) investigated the relationship between parenting styles and cognitive ability in children of young-elementary schools. In the results, it was found that socioeconomic-demographic characteristics are better predictors of cognitive development in children than the parenting styles.

Another approach researchers adopted to finding out whether cognition is affected externally or is innate is the Twins-Reared Apart study. This involved twins that were brought-up apart who share a large proportion of genes but differ in their environments (Wallace, et al., 2010). It holds up the argument that the genetics significantly affect all mental abilities of any individual.

2.4 Delay of gratification and its relation to cognitive abilities

Mischel and colleagues explored this topic extensively to find that delay of gratification increased with age, intelligence, and with subjectivity to shorter intervals of delay.

In a study conducted by Shamosh (2008), 103 healthy adults were presented with a variety of situations, all asking them to trade a larger financial reward to be given sometime in the future for a much smaller one to be given right away. The participants underwent intelligence and short-term memory tests. Later, while they were performing short term memory tasks, participants' brains were subjected to a functional MRI or fMRI scan. The highest scoring candidates across the various intelligence tests, who also showed the most restraint in delayed gratification tests, reported the most activity, according to fMRI reports, in the anterior pre-frontal cortex of the brain. This was the only brain region to show this relation. Better memory has also been tied to intelligence.

Beran and Hopkins (2018), chimpanzees that showed the highest levels of cognition were found to be the most capable in the delayed gratification test. This was the earliest such study examining the relationship between intelligence scores and delayed gratification abilities in chimpanzees.

CHAPTER 3

3.1 Research gap

All the currently available literature focuses on the relationship of only two of these variables together in children: either parenting styles and delay of gratification or delay of gratification and cognitive abilities or parenting styles and cognitive abilities. There is very limited literature present with children as sample. The present study aims at studying all these three variables together on every child individually. This helps to assess effect of different parenting styles on level of delay of gratification which in turn helps to determine the effect of delay of gratification on cognitive abilities in children.

3.2 Motivation for the study

In this fast-moving world, the ability to resist gratification is essential for the enhancement of mental and physical well-being in individuals. We observe that children nowadays, are high in impulsivity and have less self-discipline. There are many contributing factors to this, one being parenting style adopted by parents in the rearing of their child. With the development of delay of gratification, cognitive abilities are also enhanced. So in a way it can be inferred that parenting styles have an impact on the cognitive abilities in children. This study focuses on assessing the relationship of parenting styles, delay of gratification and cognitive abilities in children. This study would give an insight to the cause of delay of gratification in children; hence, those areas can be worked upon at the base level itself and development in the region of cognition can be expected.

3.3 Objectives

1. To study the impact of Parenting Styles on Delay of Gratification in preschool children.
2. To study the relationship between Delay of Gratification and Cognitive Abilities in children.
3. To study the relationship between Parenting Styles and Cognitive Abilities in preschool children.

3.4 Hypotheses

To meet the above objectives, following hypotheses have been formulated based on the earlier studies conducted.

Studies conducted by Zhou et al. (2005) and Eisenberg et al. (2009) on Chinese parents revealed that there is a significant impact of different parenting styles on the level of delay of gratification in children. They observed that the authoritative parents' children had better successful outcomes in fields such as self-regulation, social acceptance, self-reliance etc. It was also reported that the authoritarian and permissive parents had a negative effect on their children's levels of delay of gratification and are also likely to suffer from adjustment problems. Similar findings were reported by Mauro and Harris (2000) and Reitman and Gross (1997) that permissive or authoritarian mothers were less effective in developing self-regulation habit in their children.

Based on the above premises, following hypotheses have been formulated.

H₁: Children with authoritative parenting style show higher levels of delay of gratification.

H₂: Children with authoritarian parenting style show low levels of delay of gratification.

H₃: Children with permissive parenting style show low levels of delay of gratification.

The literature which exists suggests that the parenting styles affect the emotional intelligence of a child and not the general intelligence. The study conducted by Tiller et al. (2003) reports

that the intelligence is something which is inherited from birth and cannot be affected by the parenting styles adopted by the caregivers. Cognitive abilities which are measured in relation with the parenting styles are the academic grades or achievement where authoritarian parenting style has an upper hand (Dornbusch et. al, 1998). Moreover, studies in early childhood are very rare and the reported findings are also inferred from the research on adolescents. Boveja in 1998 found that children to authoritative parents adopted more effective learning strategies. The present study intends to measure cognitive abilities in the form of shortest and total time taken in the cognitive ability task for children and based on the above research, following hypotheses have been proposed.

H₄: Authoritative parenting style does not influence cognitive abilities in children.

H₅: Authoritarian parenting style does not influence cognitive abilities in children.

H₆: Permissive parenting style does not influence cognitive abilities in children.

Research by Shamosh and Gray (2008) clearly explains the relationship between cognitive abilities and delay of gratification. It was found that a structure called ‘Anterior prefrontal cortex’ was the link between these two different variables. The highest scoring individuals in different types of intelligence testing who also showed maximum delay of gratification were seen to have the most activity in this area of the brain, according to the fMRI reports. Also, the prefrontal cortex has to be active to avoid impulsive thoughts and when active, facilitates the reasoning aspect of an individual.

Based on this research, following hypothesis has been generated.

H₇: Children with higher levels of delay of gratification perform better at cognitive ability task as compared to their lower counter parts.

CHAPTER 4

METHOD

4.1 Sample

Thirty-three male preschool children of age range of 3-4 years old participated in this study. The toddlers were the students in Bachpan Preparatory School, Rajpura, Punjab. The mothers of these children, 25-30 years old also participated in the study. The study aimed to study the parenting styles as well so, mothers of the respective children were also contacted with due consent of participation.

Sampling Technique

‘Purposive Sampling’ was done. This type of sampling technique was adopted because of the availability of both the mother and the child of a specific age range was difficult to participate in the study. Therefore, we had only a few willing participants and had to go forward with the ones we had and hence, a very small number.

4.2 Design

This is a between-subjects study and has been designed taking ‘parenting styles’ as the independent variable and ‘delay of gratification’ and ‘cognitive abilities’ as dependent variables.

4.3 Statistical analysis

Descriptive Statistics:

Mean and Standard Deviations were computed to describe the results.

Inferential Statistics:

Correlation analysis was done to find out the strength of relationship between parenting styles, delay of gratification and cognitive abilities.

Regression analysis was done to predict the impact of parenting styles on delay of gratification in children, parenting styles on cognitive abilities and delay of gratification on cognitive abilities.

4.4 Tools

Delay of Gratification Task - The delayed gratification test (Appendix A) used in this study was adapted from Hongwanishkul et al. (2005). The participants were exposed to three to four edible items. The waiting time period is 3 minutes. The child if waits is given the most desirable item else the least one. Time is noted in seconds for as to measure the gratification delay. More the time, higher is the delay of gratification shown.

Seguin Form Board Test – The form board test comprises of 10 blocks (Appendix B) and is used to assess the cognitive abilities of children of the age group 3-15yrs old (Seguin, Goddard, Sylvester, 1916). The child is assessed on the basis of the time taken in seconds to complete the test.

Parenting Styles and Dimensions Questionnaire – The 30 item questionnaire (Appendix C) assesses the parenting style used by the mother for the rearing of their child. The questionnaire is a self-report tool which was completed by mothers and designed to assess different parenting styles given by Baumrind: Authoritative, Authoritarian and Permissive (Robinson, Mandelco, Olsen & Hart, 2005). This instrument is scored on a 5-point Likert-type scale, where 5 indicates “always exhibits” the behavior with her child and 1 demonstrates “never exhibits” the stated behavior.

The Authoritative style subscale constituted of 13 items, authoritarian of 13 items and permissive of 4 items. Scores were on a continued spectrum, therefore the higher the score, the more the parent identifies with a particular style (Robinson et al., 1995).

Stopwatch was used to record the time taken in the delay of gratification task and cognitive abilities task was used. Observation sheets to record the data for both the experiments were self-designed. CCTV cameras were made use of to observe the behavior of children when exposed to delay of gratification experiment. Edible items to offer for Delay of Gratification task were incorporated

4.5 Procedure

33 male preschoolers participated in this study. Consent (Appendix A) was taken in written beforehand from the primary care-givers (mothers) of the children participating in the study. The mother was asked to fill out a questionnaire (Appendix D) of 30 items assessing the parenting style adopted by her. The responses are marked from 1 to 5 where 1 indicates “never exhibits” and 5 indicates “always exhibits”. The children were also given different reinforcements for different experiments, for eg. crayons and candies.

Next, a delay of gratification task (Appendix B) is performed with the toddlers where they are presented with three to four items of their choice. The child is asked to pick out one item according to his desirability. Then, he is instructed that he can get that favourite treat on the table if he waits for the examiner to return. If he doesn't wish to wait, he may ring the bell and would be given the least desirable item. However, if the child is found to have eaten the items in the absence of examiner, he is not allowed to take any of the treats. The waiting time was 3 minutes. The delay time of the participants was recorded(in seconds) It is the amount of time that the participant waited before consuming the treat. Participants who did not consume the treat by the end of 3 min were recorded with a delay time of 180s and rewarded with his desirable food item, else the least one.

Children performed Seguin Form Board test (Appendix C) was used with the children. In this the child was instructed to place all the 10 blocks in the respective locations on the board as fast as he could. The study used shortest and total time both, because intelligence is decided

upon the factor which would benefit the child most. The Shortest Time and Total Time (sum of three trials) were noted.

CHAPTER 5

RESULTS

For the data analysis, mean and standard deviation was computed for all the variables; independent variable being Parenting Styles and Dependent Variables being Delay of Gratification and Cognitive Abilities are given in Table 1.

Table 1: Descriptive Statistics of Cognitive Abilities, Parenting Styles and Delay of Gratification.

Variables	Mean	Standard Deviation
Shortest Time	54.36	15.55
Total Time	196.15	67.40
C. Age	3.91	0.38
DG	126.64	68.51
Authoritative	4.21	0.48
Authoritarian	2.27	0.52
Permissive	1.94	0.86

From the above table, it can be observed that the means for the Shortest and Total time taken in the Cognitive Ability task are 54.36 and 196.15 respectively. The standard deviations for the Shortest and the Total time taken in the Cognitive Ability task are 15.554 and 67.403 respectively. The mean and standard deviation for Chronological Age is 3.91 and 0.384 respectively. Mean and standard deviation for Delay of Gratification are 126.64 and 68.509.

For the Authoritative, Authoritarian and Permissive Parenting Style, means are 4.21, 2.27, 1.94; and standard deviations are 0.485, 0.517 and 0.864 respectively.

The correlation was computed for the males (N=33) to see the relationship between Cognitive Abilities, Delay of Gratification levels and Parenting Styles is given in Table 2.

Table 2: Correlation Analysis between Cognitive Abilities, Delay of Gratification and Parenting Styles.

	Shortest	Total	DG	Authoritative	Authoritarian	Permissive
Shortest	1					
Total	.90**	1				
DG	-.15	-.32	1			
Authoritative	-.46**	-.43*	.01	1		
Authoritarian	.05	-.02	-.25	-.23	1	
Permissive	.07	-.08	-.32	-.34	.34	1
<hr/>						
N=33	* p<.05	**p<.01				

From Table 2, it was observed that there is a negative correlation between authoritative parenting style and the shortest time taken in the cognitive ability task ($r = -0.46$), $p < .01$. A negative correlation was obtained between authoritative parenting style and the total time taken in the cognitive ability task ($r = -0.43$), $p < .01$. Delay of gratification was also found to be negatively correlated with the total time taken in the cognitive ability task ($r = -0.32$),

$p > .01$ but in the direction of significance. There was also a negative correlation between delay of gratification and permissive parenting style ($r = -0.32$), $p > 0.01$ level but tending towards significance. It was also found that there was a negative correlation between delay of gratification and authoritarian parenting style ($r = -0.25$) but again not significant at 0.01 level.

Table 3: Regression Analysis of Delay of Gratification and Cognitive Abilities in Authoritative Parenting Style.

Model	Dependent Variable	B	Std. Error	Beta	t	Sig.	Adjusted R Square
Authoritative	DG	.832	30.60	.01	.03	.98	-.03
	Shortest	-17.77	6.17	-.46	-2.88	.01	0.19
	Total	-71.55	27.21	-.43	-2.63	.01	.16

In the above table, Adjusted R Square for authoritative parenting styles in total time taken in the cognitive ability task is 0.16; therefore 16% of variation in total time taken in the cognitive abilities task in children can be attributed to authoritative parenting styles. The Beta value in the above table is -71.55 which indicates that one unit increase in the authoritative parenting style will lead to 71.55 unit decrease in the total time taken in the cognitive abilities task in children. For delay of gratification ($t = 0.03$) and shortest time ($t = 2.88$) taken in the cognitive ability task, impact of authoritative parenting style cannot be predicted.

The regression analysis was done to predict the effect of Authoritarian Parenting Style on Delay of Gratification and Cognitive Abilities in children is given in the Table 4.

Table 4: Regression Analysis of Delay of Gratification and Cognitive Abilities in Authoritarian Parenting Style.

Model	Dependent Variable	B	Std. Error	Beta	t	Sig.	Adjusted R Square
Authoritarian	DG	-28.32	20.70	-.25	-1.37	.18	.03
	Shortest	1.20	4.83	.05	.25	.81	-.03
	Total	-2.14	20.96	-.02	-.10	.92	-.03

In the above table, significance of impact of authoritarian parenting style is low and thus authoritarian parenting does not have an impact on delay of gratification ($t= 1.37$) and cognitive abilities ($t=0.25, 0.10$) in children.

The regression analysis was done to predict the effect of Authoritarian Parenting Style on Delay of Gratification and Cognitive Abilities in children is given in the Table 5.

Table 5: Regression Analysis of Delay of Gratification and Cognitive Abilities in Permissive Parenting Style.

Model	Dependent Variable	B	Std. Error	Beta	t	Sig.	Adjusted R Square
Permissive	DG	-27.10	14.61	-.32	-1.86	.07	.07
	Shortest	1.29	3.49	.07	.37	.71	-.03
	Total	-7.08	15.09	-.08	-.47	.64	-.03

In the above table, Adjusted R Square for Authoritarian Parenting Style in Delay of Gratification is 0.07 which is nearing significance; therefore 7% of variation in levels of Delay of Gratification can be attributed to Authoritarian Parenting Style. The Beta value in the above table is -27.10 which indicates that one unit increase in the independent variable (Authoritarian Parenting Style) will lead to 27.10 unit decrease in the level of Delay of Gratification. Permissive Parenting Style is not a good predictor of Cognitive Abilities (t=0.37, 0.47) as the impact is not significant.

The Regression analysis was done to predict the effect of Delay of Gratification on Cognitive Abilities in children is given in Table 6.

Table 6: Regression Analysis for Delay of Gratification in the Cognitive Ability Task.

Model	Dependent Variable	B	Std. Error	Beta	t	Sig.	Adjusted R Square
DG	Shortest	-.03	.04	-.15	-.84	.41	-.01
	Total	-.32	.17	-.32	-1.91	.07	.08

In the above table, Adjusted R Square for Delay of Gratification is 0.08; therefore 8% of variation in Total time taken in the Cognitive Abilities task in children can be attributed to Delay of Gratification.

The Beta value in the above table is -0.32 which indicates that one unit increase in the Delay of Gratification will lead to 0.32 unit decrease in the Total time taken in the Cognitive Abilities task in children. Impact of Delay of Gratification cannot be seen on the Shortest time ($t=0.84$) taken in the Cognitive Abilities task.

The Regression analysis was done to predict the effect of Chronological Age on Delay of Gratification in children is given in Table 7.

Table No. 7: Regression Analysis of Chronological Age in Delay of Gratification.

Model	Dependent Variable	B	Std. Error	Beta	t	Sig.	Adjusted R Square
C. Age	DG	57.31	30.31	.32	1.89	.07	.07

C.Age: Chronological Age

In the above table, Adjusted R Square for Chronological Age is 0.07; therefore 7% of variation in Delay of Gratification in children can be attributed to Chronological Age. The Beta value in the above table is 57.31 which indicates that one unit increase in the Chronological Age will lead to 57.31 unit increase in the Delay of Gratification in children.

CHAPTER 6

DISCUSSION

6.1 Delay of gratification

This study primarily aimed to examine the effect of parenting styles on delay of gratification and also aimed to study the relationship between delay of gratification and cognitive abilities in toddlers.

According to the existing literature, it was hypothesized that toddlers with authoritarian parenting style would show low level of delay of gratification. These findings suggest that authoritarian parenting style has an impact on the delay of gratification in toddlers and therefore, the hypothesis is accepted. The results (Table 4) between these two variables i.e. authoritarian parenting style and delay of gratification also show an inclination towards significance. As the sample size taken was very small which could be one of the reasons why this research did not produce significant results. In a small sample, we could find a weak negative correlation but the impact of authoritarian parenting style could not be predicted on delay of gratification; it is expected that with the increase in sample size, significant impact can be observed. The findings of this study were somewhat similar to the research conducted by Mauro and Harris (2000) and Reitman and Gross (1997) where they provided evidences stating that the permissive mothers are less effective in developing self-regulation or delay of gratification in children. Chinese studies by Zhou et al. (2005) and Eisenberg et al. (2009) also support our research findings that the authoritarian parenting styles are associated with lower levels of delay of gratification.

Second hypothesis that the authoritative parenting style leads to higher levels of gratification delay in toddlers was not confirmed. The previous studies by Zhou et al. in 2005 and Eisenberg et al. (2009) done in this regard illustrate that Chinese parents who have an authoritative style of parenting have children who have better social acceptance, self-reliance, better discipline and higher levels of delay of gratification. The findings of the present study were not consistent with the existing literature. The result (Table 3) was not very evident and one of the major reasons for such inconclusiveness could be the very restricted sample taken for the research. It is difficult to analyse the true nature of the study in such small sample. However, if the current trends are kept in perspective, it can be suggested that with the increase in sample size, interesting relationships and impact can be observed.

The third hypothesis was formed that children with permissive parenting style have low levels of delay of gratification was confirmed. Studies conducted by Mauro and Harris (2000) and Reitman and Gross (1997) show that children of permissive parents are less able to develop this ability to delay gratification. Similar findings were reported by Zhou et al. (2005) and Eisenberg et al. (2009) where it was seen that permissive parents had children who had lower levels of delay of gratification and also faced adjustment problems.

6.2 Cognitive abilities

Fourth hypothesis was formed that the authoritative parenting style has no impact on the cognitive abilities of the children. The results (Table 3) obtained do not prove the hypothesis as the total time taken in the cognitive ability task was less by the toddlers with the Authoritative Parenting Style, thereby rejecting the hypothesis. The existing literature on this have indicated inconsistent results i.e. parenting styles do not have any influence on the cognitive abilities of the children (Tiller, et. al, 2003). Yet it is still an issue under controversy where some researches indicate that both nature and the environment have a role to play in an individual's cognitive development. A nurturing environment sure plays a positive role in enhancing a child's cognitive development. In the twin studies where nature vs. nurture's effects are studied upon, it has been observed that although genes play a very important role, still the environment in which they are being raised in can increase or decrease their cognitive abilities.

Fifth hypothesis that there is no impact of authoritarian parenting style on cognitive abilities of children was confirmed. The present research findings (Table 4) were in line with the existing literature. The literature as stated earlier is limited in this field and the existing studies like those by Tiller et al. (2003) suggest that the cognitive abilities are something which an individual inherits from birth itself and cannot be affected by other factors such as parenting styles adopted by the primary caregivers.

Sixth hypothesis stated that there is no impact of permissive parenting style on cognitive abilities of children. As already noted earlier that the parenting styles have no impact on the cognitive abilities of an individual and the earlier researches by Tiller et al. (2003) also

support the same. Our present research findings (Table 5) also concur with the previous studies thus accepting the hypothesis.

Seventh hypothesis stated that toddlers with high level of delay of gratification have higher cognitive abilities was confirmed. The results (Table 6) show that the total time taken in the cognitive ability task was less in the toddlers with higher gratification delay thus. Psychologists Shamosh and Gray (2008) also found results supporting our hypothesis and results. In their research, they came across the reasons why and how cognition and delay of gratification are related. The highest scoring candidates across various intelligence tests, who also showed the maximum restraint in delay of gratification tests, according to fMRI reports showed the most activity in the anterior prefrontal cortex of the brain. This brain region was observed to be the link between these two different variables. To avoid impulsive thoughts, the prefrontal cortex has to be active, thus facilitating the reasoning aspect of an individual.

Another outcome of this study is that as the age increased, delay of gratification also increased. The results (Table 7) indicate that as the age increased of the toddlers, the delay of gratification also increased.

CHAPTER 7

IMPLICATIONS, LIMITATIONS AND FUTURE DIRECTION

7.1 Implications

Delay of gratification has been found to be an indicator of an individual's level of psychological functioning. Changing life styles, urbanisation and advanced technology have brought high impulsivity, short term gains, and instant gratification.

The present study has implication for parents, teachers and caregivers. Awareness programs can be held for parents to make them understand the relationship between parenting styles, delay of gratification and how delay of gratification has an effect on the cognitive abilities of their children.

7.2 Limitations

The major limitation of the present study is that it has been conducted on a very small sample size.

Secondly, the parenting style assessment was only done for the mothers. Fathers also play a role in the rearing of a child and play an important role in his holistic development.

Thirdly, the research used purposive sampling as the sampling technique. Because the availability of the preschool children and their mothers was important, the researcher could only involve specific participants. Had it been a random sampling technique, the findings of the study would have been significant.

There are many components when we talk about cognitive abilities. The one used in this study was the general intelligence measured by Seguin Form Board which broadly measures

visual-spatial ability in children with respect to time taken (shortest and total) in seconds to complete the test. This tool computes intelligence in the form of mental age. For a small age group of 3-4 years old, measure of intelligence or cognitive abilities becomes tricky and therefore the real impact of parenting styles on cognitive abilities could not be obtained.

7.3 Future direction for research

For further research, both the primary care-givers i.e. fathers and mothers in most of the cases can be engaged in analysing the parenting styles being used and how they impact children's cognition and delay of gratification for we know that mothers have an enormous impact on children but fathers do have a considerable role to play in their development. And with the trends following, most of the mothers are also working and that also explains a lot about the changing roles in parenting of the child. Thus, by incorporating both mothers and fathers in the study will bring about a more descriptive analysis of what actually influences both cognition and gratification delay. In addition to this, researchers could make use of the 'random sampling' technique and includes participants from different schools and locations. That would give a clearer picture of the effect and also how parenting styles, self-regulation and cognition vary with change in geographical locations. One could analyse the trends in Punjab or for a wider research, all over India for there is no record of any past studies conducted in India exploring these variables. The present research was only conducted on preschool boys and in future, researchers could involve both boys and girls and investigate the role of gender in parenting styles used, its impact on delay of gratification and its relationship with the cognitive abilities.

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APPENDIX A

CONSENT FORM

I am the student of MA Psychology of School of Humanities & Social Sciences of Thapar University, doing a research project on Parenting styles of people in relation to delay of gratification in children. I need your co-operation for the conduct of this study by way of filling up this questionnaire and also kindly allow your child to be a part of this study.

I assure you that the information given by you would be used only for academic purposes and will be kept strictly confidential. If you wish to have the feedback about your performance, please provide your email address below.

Thanking you for your cooperation and time.

I, _____ hereby agree for me and my child to participate in the above mentioned research.

Signature of the Participant

Name _____

Date of Birth _____

Contact No. _____

Email id _____

APPENDIX B

DELAY OF GRATIFICATION



APPENDIX C

COGNITIVE ABILITY TEST



APPENDIX D

PARENTING STYLE QUESTIONNAIRE

Please rate how often you engage in the different parenting practices, listed below. Scores range from “Never” to “Always” on a 5-point scale. At the end of each section, add up the scores and divide it by the number of questions in that section. The calculated score is your total score for that category. The highest score indicates your preferred parenting style.

Authoritative Parenting Style

1. I am responsive to my child’s feelings and needs:

Never 1 2 3 4 5 6 Always

2. I take my child’s wishes into consideration before I ask him/her to do something:

Never 1 2 3 4 5 6 Always

3. I explain to my child how I feel about his/her good/bad behaviour:

Never 1 2 3 4 5 6 Always

4. I encourage my child to talk about his/her feelings and problems:

Never 1 2 3 4 5 6 Always

5. I encourage my child to freely “speak his/her mind”, even if he/she disagrees with me:

Never 1 2 3 4 5 6 Always

6. I explain the reasons behind my expectations:

Never 1 2 3 4 5 6 Always

7. I provide comfort and understanding when my child is upset:

Never 1 2 3 4 5 6 Always

8. I compliment my child:

Never 1 2 3 4 5 6 Always

9. I consider my child's preferences when I make plans for the family (e.g., weekends away and holidays):

Never 1 2 3 4 5 6 Always

10. I respect my child's opinion and encourage him/her to express them:

Never 1 2 3 4 5 6 Always

11. I treat my child as an equal member of the family:

Never 1 2 3 4 5 6 Always

12. I provide my child reasons for the expectations I have for him/her:

Never 1 2 3 4 5 6 Always

13. I have warm and intimate times together with my child:

Never 1 2 3 4 5 6 Always

Scoring: Total score / 13 =

Authoritarian Parenting Style

1. When my child asks me why he/she has to do something I tell him/her it is because I said so, I am your parent, or because that is what I want:

Never 1 2 3 4 5 6 Always

2. I punish my child by taking privileges away from him/her (e.g., TV, games, visiting friends):

Never 1 2 3 4 5 6 Always

3. I yell when I disapprove of my child's behaviour:

Never 1 2 3 4 5 6 Always

4. I explode in anger towards my child:

Never 1 2 3 4 5 6 Always

5. I spank my child when I don't like what he/she does or says:

Never 1 2 3 4 5 6 Always

6. I use criticism to make my child improve his/her behaviour:

Never 1 2 3 4 5 6 Always

7. I use threats as a form of punishment with little or no justification:

Never 1 2 3 4 5 6 Always

8. I punish my child by withholding emotional expressions (e.g., kisses and cuddles):

Never 1 2 3 4 5 6 Always

9. I openly criticise my child when his/her behaviour does not meet my expectations:

Never 1 2 3 4 5 6 Always

10. I find myself struggling to try to change how my child thinks or feels about things:

Never 1 2 3 4 5 6 Always

11. I feel the need to point out my child's past behavioural problems to make sure he/she will not do them again:

Never 1 2 3 4 5 6 Always

12. I remind my child that I am his/her parent:

Never 1 2 3 4 5 6 Always

13. I remind my child of all the things I am doing and I have done for him/her:

Never 1 2 3 4 5 6 Always

Scoring: Total score / 13 =

Permissive Parenting Style

1. I find it difficult to discipline my child:

Never 1 2 3 4 5 6 Always

2. I give into my child when he/she causes a commotion about something:

Never 1 2 3 4 5 6 Always

3. I spoil my child:

Never 1 2 3 4 5 6 Always

4. I ignore my child's bad behaviour:

Never 1 2 3 4 5 6 Always

Scoring: Total score / 4 =

Parenting Styles: On the lines below you can record the rank order of your preferred parenting styles:

1) Score:

2) Score:

3) Score: