

## THE ROLE OF IMAGINATIVE PLAY AND INHIBITORY CONTROL TOWARDS PROSOCIAL BEHAVIOR IN PRESCHOOL CHILDREN

Fina Melinda Purba<sup>\*)</sup>, Efriyani Djuwita, Inge Uli Wiswanti

Life-span Development Research Laboratory, Faculty of Psychology, Universitas Indonesia,  
Prof. Dr. R. Slamet Iman Santoso St., Depok, 16424, Indonesia

<sup>\*)</sup>E-mail: [finamp19@gmail.com](mailto:finamp19@gmail.com)

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### Abstract

Preschool age is a crucial period to foster children's prosocial behavior using imaginative play. This study aims to determine the relationship between imaginative play and prosocial behavior, with inhibitory control as a moderator. The instruments used are the Strengths and Difficulties Questionnaire (SDQ) dimensions of prosocial behavior, the Child Imagination Questionnaire (CIQ), and Head-Toes-Knees-Shoulders Task. Participants were preschool children aged 3–6 years ( $n = 75$ ). Parents and teachers of children are also involved in administering the data. The results show that there are differences in the assessment results between teachers and parents. The teachers' assessment result shows a significant relationship between imaginative play and prosocial behavior [ $(75)=0.501$ ,  $p<0.05$ ,  $r^2 =0.251$ , one-tailed], and inhibitory control moderate the relationship between imaginative play and prosocial behavior ( $R^2=0.4831$ ,  $p=0.000$ ). However, the correlation among the three variables was found to be non-significant in the parents' assessment. Inhibitory control also does not moderate the relationship between imaginative play and prosocial behavior. The different results between teachers' and parents' assessments are explained further in this paper.

Keywords: executive function; imaginative play; inhibitory control; preschool children; prosocial behavior

### Peran Permainan Imajinatif dan Kontrol Inhibisi pada Perilaku Prosocial Anak Usia Prasekolah

#### Abstrak

Usia prasekolah merupakan usia emas dalam pembentukan perilaku prososial anak dan menentukan perilaku prososial di usia perkembangan berikutnya. Berbagai metode perlu digali untuk memaksimalkan perilaku prososial, salah satunya dengan metode permainan imajinatif. Penelitian ini bertujuan untuk mengetahui hubungan antara permainan imajinatif dan perilaku prososial dengan kontrol inhibisi sebagai moderator. Alat ukur yang digunakan berupa *Strengths and Difficulties Questionnaire (SDQ)* dimensi Perilaku Prosocial, *Child Imagination Questionnaire (CIQ)*, dan Tugas Kepala-Pundak-Lutut-Kaki. Partisipan merupakan anak prasekolah berusia 3–6 tahun ( $N=75$ ). Orang tua dan guru anak juga dilibatkan untuk mengadministrasikan data. Hasil menunjukkan bahwa terdapat perbedaan hasil antara penilaian guru dengan orang tua. Pada penilaian guru, ditemukan adanya hubungan yang signifikan antara permainan imajinatif dengan perilaku prososial. Kontrol inhibisi juga ditemukan dapat memoderasi hubungan permainan imajinatif dengan perilaku prososial. Sementara, pada data orang tua tidak terdapat hubungan antara ketiga variabel. Begitu juga dengan kontrol inhibisi yang tidak dapat memoderasi hubungan antara permainan imajinatif dengan perilaku prososial. Perbedaan hasil ini dijelaskan lebih lanjut di dalam naskah.

Kata kunci: anak prasekolah; fungsi eksekutif; kontrol inhibisi; perilaku prososial; permainan imajinatif.

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### INTRODUCTION

Preschoolers, typically aged 3 to 6 years, play a crucial role in the development of prosocial behavior. Prosocial behavior involves voluntary actions intended to benefit others (Tomasello, 2017), such as considerate of other people's feelings, sharing, helpful, kind to younger children, often volunteers to help others (parents, teachers, other children) (Goodman,

1997), assisting, comforting (House et al., 2013), taking turns (Taylor, 2013), and cooperating (Köster et al., 2016). Eisenberg et al. (1999) find that the prosocial behavior they had as children was found to persist and tend to be stable into adulthood. Therefore, if children exhibit good-quality prosocial behavior during this developmental stage, it suggests they will continue to demonstrate positive prosocial behavior into adulthood. It can also

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act as a protective factor for the child, leading to enhanced academic achievements (Collie et al., 2019), against peers' acceptance of aggression (Jung & Schröder-Abé, 2019), until the cultivation of high-quality social relationships (Niu et al., 2016). On the other hand, the bad development or poor prosocial behavior development poses risks and can lead to various problematic behaviors in adolescence and adulthood. For instance, these behaviors include engaging in aggression, juvenile delinquency (Padilla-Walker et al., 2018), and substance abuse (Quigley & Maggi, 2014).

Despite being crucial, numerous children have not yet shown prosocial behavior, specifically towards their teachers and peers. Through direct student observations and teacher interviews, Alfiyah and Martani (2015) discovered that, on average, children have not yet demonstrated prosocial behavior like assisting, comforting, or sharing, and instead tend to be self-centered. Similar findings were also reported by Mayangsari et al. (2017), who found that 15 out of 25 children experienced a degradation of prosocial behavior. The issue of inadequate prosocial behavior needs to be addressed by developing positive prosocial behavior in children.

Bauer et al. (2021) found that children's prosocial behavior develops through imaginative play and executive function. Imaginative play is a game that involves cognitive abilities to create a world that is different from reality (Thibodeau-Nielsen & Gilpin, 2020), such as sociodramatic and fantasy play, impersonates characters, and interacts with imaginary friends (Gilpin et al., 2017). Within these plays, children use imagination, which is a cognitive representation of objects, feelings, or situations that are not present at that time and place. Imaginative play has a role in prosocial behavior because it can foster emotion regulation (Gilpin et al., 2015). During imaginative play, they pretend to be animals, other individuals, within different simulated situations, or anything they might not undertake in real-life situations. This form of play allows children to experience emotional states and traits that contribute to enhancing their emotional control (Goldstein & Lerner, 2017).

As preschoolers, children engage in imaginative play with their peers and get them to interact, socialize, set rules, and follow them. As a result, children adapt and

collaborate to sustain play and achieve goals (Brown et al., 2017 as cited in Bauer, 2021). This, in turn, positively influences the development of children's prosocial behavior. Additionally, peers can influence each other's behavior. Positive peer relationships can elevate positive emotions and reduce negative emotions (Telzer et al., 2018). Interaction with peers also nurtures children's empathy, thus fostering prosocial behavior (Fujisawa et al., 2008). This is supported by Jaggy et al. (2023) who found a relationship between prosocial behavior and imaginative play. However, Richard et al. (2021) found no significant differences between prosocial behavior and pretend play (imaginative play).

Bauer et al. (2021) also find that children's prosocial behavior is developed by executive function. Executive Function (EF) is defined as the capacity to regulate an individual's thoughts, behaviors, and emotions. This function subsequently influences a person's behavior in achieving a goal (Diamond, 2020). EF encompasses cool EF and hot EF. Cool EF focuses on regulating problem-solving, attention, working memory, cognitive flexibility, and inhibitory control of behavior (Carlson, 2005 as cited in Bauer et al., 2021). On the other hand, hot EF relates to delay gratification, emotion management, and affective decision making (Bernabei et al., 2018).

Beside that Bauer et al. (2021) found a correlation between prosocial behavior and hot executive function (EF), but not with cool EF. However, upon further investigation, they discovered that one component of cool EF, namely inhibitory control, was associated with prosocial behavior. These research findings find support in the work of Yavuz et al. (2022), who also established a positive and significant relationship between inhibitory control and prosocial behavior. Inhibitory control refers to the self-regulatory function involving the management of attention, behavior, thoughts, and emotions (Diamond, 2020). Higher inhibitory control has been correlated with increased sympathy (Yavuz et al., 2022) and enables children to effectively regulate their emotions, desires (Zhang & Wang, 2020), and impulsivity (Diamond, 2020). As a result, they possess a more comprehensive perspective, enhancing their understanding of others and promoting the display of prosocial behaviors (Yavuz et al., 2022).

The finding that inhibitory control plays a role in the development of prosocial behavior

(Bauer et al., 2021; Yavuz et al., 2022) suggests the possibility that inhibitory control might also contribute to enhancing the relationship between imaginative play and prosocial behavior in children. Furthermore, the absence of indications regarding the contribution of cool EF skills in the relationship between imaginative play and prosocial behavior in Bauer et al. (2021) study prompts further investigation into exploring these variables with a specific cool EF skill and moderation methods. This has led researchers to consider incorporating inhibitory control as a moderating variable in the link between imaginative play and prosocial behavior among preschool-age children. The role of inhibitory control as a moderating variable aims to explore whether inhibitory control has an effect and can enhance the connection between the variable of imaginative play and the variable of prosocial behavior. Consequently, the primary objective of this study is to examine the relationship between imaginative play and prosocial behavior moderated by inhibitory control in preschool children.

This study will also utilize a questionnaire instrument involving assessments from both teachers and parents for the imaginative play and prosocial behavior questionnaires. Various informants are crucial because preschool children cannot assess their own social-emotional development (Evans, 2015). In addition, teachers and parents have different levels of engagement due to differences in circumstances between them that can contribute to more objective assessments in this study.

The difference lies in how teachers primarily interact with children during school hours, while parents spend more time with their children at home, although some may have limited time due to their busy schedules. Additionally, teachers typically assess multiple children simultaneously, whereas parents evaluate their own child individually. Parents' self-assessment can provide deeper insights due to their intimate familiarity with their child's behaviors. Overall, involving parents seeks to address potential gaps in the assessment process.

Therefore, this study aims to investigate the following research question: to what extent is imaginative play status related to prosocial behavior in preschool children and is this relation moderated by inhibitory control? Additionally, does a disparity exist in results

between assessments conducted by teachers and those by parents?

## METHODS

### Research Design, Location, Date, and Sampling Technique

This study is quantitative research within a correlational-moderation research design. The study cohort encompassed 112 preschool children (ages 3-6), 90 parents, and 13 teachers from three preschools in Jakarta, Depok, and Bogor. Following data cleansing, 75 child-parent pairs and 13 teachers remained in the dataset. Other participants were not included due to incomplete responses or outliers, such as children aged 7 or those with special needs. The number of samples surpassed the minimum threshold of 68 entries required by G\*Power. Participant samples were conducted in January-March 2023 using a non-probability sampling technique, specifically convenience sampling.

### Procedures for Data Collection

The research began with a literature review on variables, their interactions, and measurement tools. Subsequently, observations were conducted at a childcare center to gain insights into the developmental trajectories and characteristics of children during play. Based on this, the researcher devised the research protocol, selected tools, determined sample size, organized data collection, and outlined the analysis plan. Ethical considerations were addressed via an ethics review proposal to the Ethics Committee of the Faculty of Psychology, Universitas Indonesia (Ethic number: 180/FPsi.Komite Etik/PDP.04.00/2022). In this study, a pilot test and trial were also conducted to ensure the appropriateness of measurement instruments and procedures.

In the implementation phase, parents were requested to fill in an informed consent form, demographic information, and questionnaires regarding their child's prosocial behavior and imaginative play. After obtaining parental consent and questionnaire completion, the researcher proceeded with the children's consent and collected data using the Head-Shoulders-Knees-Toes Task. In instances where a child experienced fatigue during the task, the research was temporarily halted to allow the child to rest. Children were given the option to stop or discontinue the test if they wished. Children who completed the entire test

received rewards in the form of stickers and puzzles. Following the completion of the task, the classroom teacher was asked to complete questionnaires assessing the child's prosocial behavior and imaginative play.

### Measurement and Assessment of Variables

Firstly, the Childhood Imagination Questionnaire (CIQ), developed by Gilpin and then adapted by Blanchard (2020), measures imaginative play involving cognitive abilities to create a world that is different from reality, in the form of pretend play, symbolic thinking, imaginary friends, sociodramatic play, and fantasy play, whether played alone or with friends. It comprises three dimensions: sociodramatic play (5 items), imaginative companionship and impersonation (5 items), and imaginative (fantastical) play (4 items). The example of the item is "*Seberapa sering Anda mengamati anak ini berinteraksi dengan teman imajinatif?*" or "How often do you observe this child interacting with imaginative friends?" Using a 5-point scale, it assesses the frequency of activities, scored from "Never" to "Almost Every Day." With a reliability of  $\alpha=0.96$ , the CIQ, consisting of 14 to 70 cumulative scores. For administration, the CIQ will be filled by both parents and teachers.

Secondly, the Strengths and Difficulties Questionnaire (SDQ), developed by Goodman (1997) and translated into Bahasa Indonesia by Youth in Mind (2020), is used to measure children's prosocial behavior encompassing voluntary actions intended to benefit others, in the form of sharing, assisting, and comforting, taking turns, and cooperating. The instrument has a good reliability with  $\alpha=0.72$ . The SDQ consists of five dimensions: emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems, and prosocial behavior. In this study, the dimension that we use is the prosocial behavior dimension and will be administered by teachers and parents. The prosocial behavior dimension consists of 5 items, for example "*Dapat memperdulikan perasaan orang lain*" or "caring about the feelings of others." The scale used ranges from 1 to 3, with scores of 1 corresponding to "Tidak Benar" or "not true," scores of 2 corresponding to "Agak Benar" or "Kind of True" and scores of 3 corresponding to "Benar" or "True." The total score will have a range of 5–15, with scores between 5 and 9 categorized as abnormal, a score of 10 as borderline, and scores between 11 and 15 as normal.

Lastly, the Head-Shoulders-Knees-Toes Task is a measure of children's inhibitory behavior adapted from Ponitz et al. (2009) with a strong reliability ( $\alpha=0.92-0.94$ ). Inhibitory control is a self-regulatory mechanism that involves the management of attention, behavior, thoughts, and/or emotions. This task assesses self-regulation by instructing children to touch specific body parts and is administered by the researcher. During administration, children ensure they are familiar with body parts including the head, shoulders, knees, and toes. Subsequently, they are prompted to touch their head when the examiner mentions "*kaki*" or toes, touch their toes when the examiner mentions "*kepala*" or head, touch their shoulders when the examiner mentions "*lutut*" or knees, and touch their knees when the examiner mentions "*pundak*" or shoulders. The task includes practice and testing phases, scoring correct responses as 2, incorrect responses as 0, and corrected mistakes as 1. Scores range from 0 to 40, with higher scores indicating better inhibitory control.

### Data Analysis

The data processing in this study was carried out using Statistical Package for Social Sciences (IBM SPSS) version 23. The analytical methods employed included analysis of descriptive, Pearson correlation, and regression using the PROCESS Model. Descriptive analysis was utilized to provide an overview of demographic data. Pearson correlation analysis was employed to examine the relationship between imaginative play and children's prosocial behavior. Regression analysis, specifically employing the PROCESS Macro Model 1 by Hayes (2018), was conducted to assess the moderating role of inhibitory control on the strength of the relationship between imaginative play and children's prosocial behavior.

## RESULTS

### Characteristics of Respondents

The study was conducted involving 112 children, 90 parents, and 13 teachers. The data used in this study constituted a compilation of assessments conducted on the children, questionnaires from the parents, and questionnaires from the teachers. When compiled, it was found that only 75 children possessed complete data and were used in the analysis.

Table 1 Demographic data of children and parents (n=75)

Characteristic	n	%
<b>Children's Age (Year)</b>		
3	1	1.3
4	10	13.3
5	30	40
6	34	45.3
<b>Gender</b>		
Girls	34	45.3
Boys	41	54.7
<b>Sibling</b>		
Only Child	10	13.3
Have Sibling/s	63	84
Not Filling	2	2.7
<b>Children most often play with at home</b>		
Family Members	46	61.33
Friends	19	25.33
Playing alone	10	13.33
<b>Parents Education</b>		
<b>Father Education</b>		
Master (S2)	11	14.7
Bachelor (S1)	42	56
Vocational (D3)	4	5.3
Academy	1	1.3
High School	14	18.6
Vocational High School	3	4
<b>Mother Education</b>		
Master (S2)	9	12
Bachelor (S1)	45	60
Vocational (D4)	1	1.3
Vocational (D3)	7	9.3
Vocational (D1)	3	4
High School	9	12
Vocational High School	1	1.3
<b>Family Income (Monthly)</b>		
<3.000.000	2	2.6
3.000.000 – <4.500.000	5	6.4
4.500.000 – <7.500.000	15	19.2
7.500.000 – <10.000.000	15	19.2
>10.000.000	37	47.4
Not Filing	1	1.3

Based on the results that are shown in Table 1, the child participants in this study ranged in

age from 3 to 6 years old. Furthermore, in terms of education, both fathers and mothers had an average educational level of a bachelor's degree (S1), with 42 fathers (56%) and 45 mothers (60%) having a bachelor's degree. Family income was predominantly above 10,000,000 IDR per month, accounting for 47.4 percent of the sample (n=37).

### Descriptive Analysis of the Variables

**Imaginative Play.** From Table 2, it is shown that the mean of imaginative play assessed by teachers is higher than that assessed by parents. The average score for imaginative play based on teacher assessments was  $M=41.49$  ( $SD=14.5$ ), with a score range of 16–70. The average score for imaginative play based on parent assessments was  $M=37.93$  ( $SD=9.68$ ), with a score range of 17–59.

**Prosocial Behavior.** The average score for prosocial behavior as assessed by teachers was  $M=12.85$  ( $SD=2.19$ ), with a score range of 5–15. The mean score fell within the range of 5–15, indicating that participants, on average, exhibited normal levels of prosocial behavior according to teacher assessments. Similarly, the average score for prosocial behavior as assessed by parents was  $M=13.2$  ( $SD=1.7$ ), with a score range of 9–15. The mean score also fell within the range of 9–15, indicating that participants, on average, exhibited normal levels of prosocial behavior according to parent assessments (Table 2).

**Inhibition Control.** Table 2 provides an overview of participants' inhibitory control, measured with a mean score of  $M=15.4$  ( $SD=4.74$ ). Scores ranged from a minimum of 0 to a maximum of 20, indicating variability in participants' ability to manage attention, behavior, thoughts, and emotions.

Table 2 Overview of research variables (n=75)

Variables	Min	Max	Mean	SD
Imaginative play (teacher data)	16	70	41.49	14.5
Imaginative play (parent data)	17	59	37.93	9.68
Prosocial behavior (teacher data)	5	15	12.85	2.19
Prosocial behavior (parent data)	9	15	13.2	1.7
Inhibitory control	0	20	15.4	4.74

Note. Min=minimum; Max=maximum; SD=standart Deviation

Table 3 Pearson correlation between variables based on teacher data (n=75)

Variable		Imaginative Play	Prosocial Behavior	Inhibitory Control
Imaginative play	<i>Pearson Correlation Sig.</i>	1		
	<i>p-value</i>	-		
Prosocial behavior	<i>Pearson Correlation Sig.</i>	0.537**	1	
	<i>p-value</i>	0.00	-	
Inhibitory control	<i>Pearson Correlation Sig.</i>	0.235*	0.501**	1
	<i>p-value</i>	0.021	0.00	-

Note. \*. Correlation is significant at the 0.05 level (1-tailed)

\*\* . Correlation is significant at the 0.01 level (1-tailed)

### Correlation Analysis

**Variables Assessed by Teachers.** Based on the Pearson correlation (Table 3), data from teachers revealed a significant positive correlation between scores of prosocial behavior and imaginative play,  $r(75)=0.537$ ,  $p<0.05$ ,  $r^2=0.288$ , one-tailed. This suggests that 28.8 percent of the variance in prosocial behavior can be explained by imaginative play. Furthermore, it indicates that as children engage in imaginative play more frequently, their prosocial behavior tends to be higher.

The correlation between inhibitory control and prosocial behavior was found to be positively and significantly correlated, with  $r(75)=0.501$ ,  $p<0.05$ ,  $r^2=0.251$ , one-tailed. This can be interpreted as 25.1 percent of the variance in prosocial behavior can be explained by inhibitory control. Furthermore, it indicates that more higher children inhibitory control, their prosocial behavior tends to be higher.

**Variables Assessed by Parents.** Based on the parent-reported data (Table 4), where there was no significant relationship between imaginative play and prosocial behavior,  $r(75)=-0.191$ ,  $p>0.05$ ,  $r^2=-0.036$ , one-tailed. Similarly, the correlation between prosocial

behavior and inhibitory control reported by parents was not significant,  $r(75)=-0.120$ ,  $p>0.05$ ,  $r^2=-0.015$ .

### Regression Analysis

Based on the results of the PROCESS Macro Model 1 regression analysis with 5,000 bootstrap samples and a confidence level of 95 percent, it was found that in the teacher-reported data, imaginative play had a direct and significant influence on prosocial behavior ( $\beta=0.0643$ ,  $t=4.8310$ ,  $p=0.00$ ). This suggests that for every one-point increase in imaginative play, there is a predicted increase of 0.06 points in prosocial behavior. Similarly, inhibitory control was also found to have a direct and significant impact on prosocial behavior ( $\beta=0.1267$ ,  $t=2.7259$ ,  $p=0.00$ ), meaning that a one-point increase in inhibitory control predicts an increase of 0.17 points in prosocial behavior. Furthermore, the regression analysis revealed that 48.31 percent of the variation in prosocial behavior can be explained by the predictor variables, the moderator, and their interaction ( $R^2=0.4831$ ,  $p=0.000$ ). This indicates that inhibitory control successfully serves as a moderator variable, strengthening the relationship between imaginative play and prosocial behavior (Table 5).

Table 4 Pearson correlation between variables based on parent data (n=75)

Variable		Imaginative Play	Prosocial Behavior	Inhibitory Control
Imaginative play	<i>Pearson Correlation Sig.</i>	1		
	<i>p-value</i>	-		
Prosocial behavior	<i>Pearson Correlation Sig.</i>	-0.191	1	
	<i>p-value</i>	0.50	-	
Inhibitory control	<i>Pearson Correlation Sig.</i>	0.92	-0.120	1
	<i>p-value</i>	0.215	0.152	-

Table 5 Results of regression analysis using PROCESS Macro Model 1 with bootstrap based on teacher (n=75) and parent data (n=75)

	Prosocial Behavior (Y)					
	$\beta$	SE	t	p	LLCI	ULCI
Bootstrap based on teacher data						
Imaginative play (X)	0.0643	0.0133	4.8310	0.000	0.0378	0.0909
Inhibitory control (M)	0.1267	0.0465	2.7259	0.000	0.0340	0.2194
X x M	-0.0062	0.0024	-2.5199	0.014	-0.011	-0.0013
Bootstrap based on parent data						
Imaginative play (X)	-0.0250	0.0205	-1.2175	0.2275	-0.0659	0.0159
Inhibitory control (M)	-0.0501	0.0418	-1.1983	0.2348	-0.1334	0.0333
X x M	-0.0092	0.0057	-1.6147	0.1108	-0.0206	0.0022

Note. Bootstrap Based on Teacher Data  $F(3,710) = 22.121$ .  $p = 0.000$ .  $R^2 = 0.4831$

Bootstrap Based on Parent Data  $F(3,710) = 2.0084$ .  $p = 0.110$ .  $R^2 = 0.0809$

In contrast to the teacher-reported data (Table 5), the parent-reported data indicated that imaginative play did not have a significant direct influence on prosocial behavior ( $\beta = -0.0250$ ,  $t = -1.2175$ ,  $p = 0.2275$ ). Similarly, the variable of inhibitory control on prosocial behavior was also found to lack a significant direct influence ( $\beta = -0.0501$ ,  $t = -1.1983$ ,  $p = 0.2348$ ). Moreover, there was no evidence that inhibitory control as the moderating variable has an impact on the relationship between imaginative play and prosocial behavior ( $\beta = -0.0092$ ,  $t = -1.6147$ ,  $p = 0.1108$ ). Finally, the predictor variables, the moderator, and their interaction were unable to account for the variation in prosocial behavior ( $R^2 = 0.0809$ ,  $p = 0.110$ ).

## DISCUSSION

Based on data collected from teachers, a significant positive relationship was found between imaginative play and prosocial behavior in preschool-age children. This positive and significant relationship indicates that the more frequently children engage in imaginative play, the higher their prosocial behavior tends to be. Based on bivariate correlation analysis, it was also determined that imaginative play predicts 28.8 percent of the variance in prosocial behavior. These findings support the results of a study by Bauer et al. (2021) and Jaggy et al. (2023), which explored the relationship between imaginative play and prosocial behavior in preschool-aged children.

The correlation between imaginative play and prosocial behavior observed in this study can be explained through the distinct features of children's imaginative play. During the preschool years (ages 3-6), children mostly

spend their days playing. These play pursuits frequently involve imaginative play, often carried out in a social context alongside peers. Through these shared play experiences, children engage in interaction and social engagement. Such interactions prompt children to recognize the diversity of ideas, desires, and emotions among their peers (Lillard et al., 2013). Consequently, this nurtures the child's comprehension of others' emotions and viewpoints while concurrently fostering skills in cooperation and problem-solving. Notably, peers exert substantial influence in shaping and introducing behaviors, thereby affecting each other's conduct (Telzer et al., 2018).

Interactions with peers exhibiting prosocial tendencies can elevate positive emotions and reduce negative emotions (Telzer et al., 2018). Furthermore, engaging in play and interactions with such peers can enrich a child's capacity for empathy, thereby enhancing their prosocial behaviors (Fujisawa et al., 2008). These contribute to the positive correlation between imaginative play and prosocial behavior in preschool-aged children.

This study also found a significant positive relationship between inhibitory control and prosocial behavior in preschool children. Inhibitory control was found to predict prosocial behavior by 25.1 percent, indicating that 25.1 percent of the variance in prosocial behavior can be predicted by inhibitory control. This finding supports the results of the study by Yavuz et al. (2022) who find the relationship between inhibitory control and children's prosocial behavior.

Inhibitory control plays a role in regulating both inappropriate external and internal stimuli,

ensuring individuals align with their goals and enhance their performance (Diamond, 2020). Adequate inhibitory control enables children to manage their responses to stimuli more accurately, resulting in appropriate behavior and fostering a greater inclination towards prosocial actions (Hubert et al., 2017). On the contrary, if a child struggles to control responses to irrelevant stimuli, it can lead to impulsivity and inappropriate reactions (Diamond, 2020). Therefore, good inhibitory control is associated with a heightened likelihood of prosocial behavior in children.

Besides, the second findings in this study found that inhibitory control has a moderator effect in the relationship between imaginative play and prosocial behavior. It was determined that inhibitory control significantly moderates the correlation between imaginative play and prosocial behavior, accounting for 48.31 percent of the variance. This signifies that 48.31 percent of the variability in prosocial behavior can be explained by the predictor variable, the moderator, and their interaction. This percentage of 48.31 percent is notably high, indicating that inhibitory control plays a crucial role in enhancing the strength of the relationship between imaginative play and prosocial behavior.

In contrast to the findings based on teachers' data, the results derived from parents' data did not indicate a relationship between imaginative play and prosocial behavior. Similarly, the analysis concerning the moderating effect of inhibitory control in the relationship between imaginative play and prosocial behavior did not yield any significant effects. Whether the variable of inhibitory control was present or not, it did not influence the relationship between imaginative play and prosocial behavior.

The data collection from parents in this study aimed to provide an update to previous research that solely relied on teacher assessments. Besides, the parents also play a role in their child's development and have the time to observe them closely. However, the results from parental assessments differed from those gathered through teacher assessments. This discrepancy can be attributed to several factors.

Firstly, teachers and parents operate in distinct conditions. Parents are solely asked to assess the imaginative abilities and prosocial behavior of their children. This setting potentially leads to a higher level of subjectivity among parents,

as there is no comparative standard. Moreover, there's a possibility that parents tend to rate each questionnaire item positively, as observed in Lohndorf's study (2019). This possibility was supported by the results of this study, which found that children's prosocial behavior scores assessed by parents were higher than those assessed by teachers.

On the other hand, teachers are responsible for evaluating multiple children at once. This allows them to make comparisons between children and might lead to more objective assessments. Additionally, the schools included in this study maintain a balanced teacher-to-student ratio, which isn't overly burdensome for teachers in terms of giving attention and assessments. In School A, there's one teacher for every 10 students. In School B, there's one class with one teacher for seven students, another class with one teacher for 11 students, and a third class with two teachers for 15 students. Then, in School C, each class comprises two teachers for 20 students.

Lastly, within the school environment, children are exposed to a diverse range of peers, providing them with a larger pool of playmates and increased opportunities for interaction. In contrast, the frequency of peer interactions at home is often lower. Some children do not have siblings, friends, or peers of the same age to engage with. This aspect could contribute to the observed differences between teacher and parental assessments. Both the assessment tools used to measure imaginative play and prosocial behavior include items that relate to interactions with peers or siblings. Teachers have more opportunities to observe children's interactions with their peers and can more accurately assess these items. Conversely, in the absence of siblings or same-age peers at home, parents may find it challenging to observe their children's interactions. Hence, this situation might negatively impact parents' assessment of items related to such interactions.

However, this study also has a few limitations. First, the sample control was limited to only considering the age factor, specifically within the range of 3 to 6 years. The distribution of age groups was uneven, with some groups having only one child, while others had as many as 34 children, which accounted for nearly half of the study's sample size. This lack of comprehensive sample control could increase the influence of extraneous variables



that might impact the relationships between the variables under investigation.

Furthermore, the measurement tool used for assessing the imaginative play variable relied on questionnaire scales. Questionnaire data can provide descriptions of variables, but they lack the capability to analyze the quality aspects of children's imaginative play. Additionally, the completion of questionnaires was carried out by both teachers and parents introduces the possibility of subjectivity or bias during the response process. This raises a need for a measurement tool that can directly observe children's imaginative play abilities, allowing for an assessment of both the extent of their skills and the qualities of their imaginative play.

Lastly, the data collection process faced challenges in the assessment of inhibitory control. The research was conducted within school premises, utilizing available empty rooms. Unfortunately, these rooms were accessible to non-participating students, resulting in various distractions during the inhibitory control tests. For instance, in School A, students entered and exited the room to retrieve stationery items stored there. Some students entered due to curiosity about the research activities or to invite the participants to engage in a play. In School B, the testing room's proximity to regular classrooms and the lack of soundproofing led to disturbances from ongoing classroom activities. Meanwhile, in School C, the testing area was situated on a terrace within the playground, and during break times or free play, non-participating students approached the testers or participants. These external factors enabled distractions that might affect both the testers and the participants, potentially impacting the accuracy and validity of the results.

### CONCLUSION AND RECOMMENDATIONS

Based on the research, the study indicates a positive and significant correlation between imaginative play and prosocial behavior in preschool children, as well as a positive and significant correlation between inhibitory control and prosocial behavior among preschoolers. Additionally, an interaction effect of inhibitory control on the relationship between imaginative play and prosocial behavior was identified. However, according to data reported by parents, there were no significant correlations found between imaginative play and prosocial behavior, nor between inhibitory control and prosocial

behavior. Furthermore, no interaction effect of inhibitory control on the relationship between imaginative play and prosocial behavior was observed according to the parent-reported data.

Considering the discrepancies between parent and teacher data, which are likely influenced by subjectivity from parents and differing assessments between parents and teachers, future research should provide training or guidance for parents and teachers in the assessment process. This approach is expected to yield more objective, standardized, and reliable data. Moreover, it is hoped that future research can incorporate additional data through observational methods to obtain more exploratory insights. Additionally, when assessing variables using experimental measures, it is advisable to conduct the testing in conducive environments to minimize potential distractions during the research process.

Furthermore, for readers, schools, and parents, it's crucial to acknowledge that play is more than just an activity; it's the primary engagement for preschoolers and has numerous positive effects on children's development. Encouraging imaginative play with peers can foster creativity and positively influence children's ability to control impulses and interact positively with others. However, if children don't have siblings or peers at home, they can still engage in activities with their parents or family, such as pretend play, storytelling, etc. Through these activities, parents and teachers can effectively integrate play and prosocial learning, fostering a holistic approach to children's development.

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