

## Social Skills of Preschool Children with Reflective-Impulsive Cognitive Styles Attending Nursery School

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### Abstract

**Background:** Reflective and impulsive cognitive styles influence children's decision-making, problem-solving, their academic achievement and social interactions. **Aim of the study** was to assess social skills of preschool children with reflective-impulsive cognitive styles attending nursery school. **Subjects & Methods: Research design:** A cross-sectional descriptive research design was used. **Setting:** The study was conducted at two nursery schools in "Diarb Negm" city (the Nile and the Formal Nursery School). **Subjects:** A purposive sample of 114 children was recruited for the study. **Tools of data collection:** Three tools were used in this study, An Interviewing Questionnaire, Kansas Reflection-Impulsivity Scale for Preschoolers Form A (KRISP), and Preschool and Kindergarten Behavior Scale Form A (PKBS). **Results:** Findings revealed that 38.6% of the study sample was impulsive cognitive style and 35.1% were reflective cognitive style. Nearly half of the study sample had deficient social cooperation and social interaction. Children with impulsive cognitive style showed less efficiency of social skills than children with reflective cognitive style. Additionally, statistically significant positive correlation was found between total time and social skills. **Conclusion:** Social skills among children with impulsive cognitive style were lower than social skills among children with reflective cognitive style with statistically significant difference. Reflective cognitive style and better social skills among females were higher than males with statistically significant difference. **Recommendations:** Social and behavioral skills training programs to be implemented to preschool children to enhance impulsive cognitive style and poor social skills. Further researches should be developed to address the risk factors of impulsive cognitive style and poor social skills and how to manage them.

**Keywords:** Preschool children, cognitive styles, reflective-impulsive, social skills

### Introduction:

Childhood is a time of growth, development and change and has strong and direct implications for optimal health of an adult. The optimal development of children is considered vital to society, so it is important to support their cognitive, social, and emotional development from the early childhood. Preschool children who attend preschool education differ in behavior, cognitive and social development and response to teaching methods<sup>(1)</sup>.

Cognitive styles are used to define individual differences in processes of perceiving, collecting and processing of information. They are one of the most important determiners of individual successes and good predictors of creativity, problem-solving and are very necessary to achieve academic success and adjustment in life. Cognitive styles

affect the process of decision making that subsequently affects the social interactions and attitudes, thinking and responses to life events<sup>(2)</sup>.

Impulsive cognitive style refers to a person's preference to answer quickly with little concern of accuracy. While, reflective cognitive style refers to a person's preference to do more thoughtfully and reduce the number of mistakes made on problem solving tasks<sup>(3)</sup>.

Impulsivity in preschoolers showed negative correlations with social skills related to peer rejection and deviant problem solving. Impulsive preschool children more frequently engage in hostile-aggressive behaviors<sup>(4)</sup>.

Community health nurses play a vital role for prevention, early identification and management of behavioral

disorders in children. They can help children and their parents in different aspects as assessment of a specific problem by appropriate history and detection of responsible factors and assisting teachers and parents for necessary modification of environment at home, school and community<sup>(5)</sup>.

#### **Significance of the study:**

Since preschool period is a critical period for the development of children, the experiences obtained in this period leave significant marks in the development of children. So, it is necessary to explore relationship between children with reflective-impulsive cognitive styles and their social skills and to produce more effective and rapid solutions and take preventive measures against emergence of possible problems. Therefore, the ignorance of this relationship might lead to poor social skills with negative consequences as peer rejection, emotional disturbances, dropping out of school, aggressive anti-social behavior, isolation, crime and poor school performance.

#### **Aim of the study:**

The aim of this study was to assess social skills of preschool children with reflective-impulsive cognitive styles attending nursery school.

#### **Research question:**

Do social skills differ among preschool children with reflective-impulsive cognitive styles attending nursery school?

#### **Subjects and Methods:**

##### **Research design:**

Across-sectional descriptive research design was used to conduct this study.

##### **Study setting:**

The study was conducted at two nursery schools in DiarbNegm" city (the Nile and the Formal Nursery

School) according to simple random sampling technique.

##### **Study subjects:**

A purposive sample of 114 children aged between 4≤6 years was recruited for this study.

##### **Tools of data collection**

Three data collection tools were used in this study.

**Tool I: An Interviewing Questionnaire:** It was designed by the researcher to assess data related to demographic characteristics of children and their parents. It included child's age, gender, number of friends, and birth order of child among siblings and parents' information as job, residence, family size, level of education and income. It includes 15 items to be filled in by parents.

**Tool II: A Standardized Kansas Reflection-Impulsivity Scale for Preschoolers Form A (KRISP):** it was used to identify children's reflective-impulsive cognitive styles according to number of errors and time spent. The scale consists of 10 pictures and before them, 5 sample pictures for practice.

##### **Scoring system:**

The total sum of number of errors and of the time spent in the test were computed for each subject. The medians of these scores were calculated. These were categorized according to tool guidelines as follows: Reflective child: (sum error <median, and sum time >median)  
Impulsive child: (sum error >median, and sum time <median)

**Tool III: Standardized Preschool and Kindergarten Behavior Scales Form A (PKBS):** it was used to identify social skills of 3-6 year old preschool children. Social skills are composed of three sub-dimensions: social cooperation, social independence, and social interaction.

The scale includes 34 items for identifying social skills. The scale includes processes of assessment of children and identification of their social skills by the teachers taking into account their experiences about children.

### Scoring system

Items were scored 3, 2, 1, and zero for the responses "Always", "often", "sometimes", and "never", respectively. For each area, the scores of the items were summed-up and the total divided by the number of the items, giving a mean score for the part. A higher score meant higher level of skill. These scores were converted into a percent score.

### Content Validity & Reliability

The tools were translated into Arabic and reviewed by a group of five experts in the fields of pediatric, community health nursing, and psychologists, who conducted face and content validity of all items. Reliability of these tools was tested using the internal consistency method. It proved to be high with Cronbach alpha coefficient 0.91.

### Field work

After obtaining permission to carry out the study, the researcher met children, teachers and parents on predetermined schedule and started by introducing herself, and briefly explained to them the purpose of the study, also they were assured that the information obtained for the study will be treated strictly confidential. Each parent of children, teacher, and child was interviewed individually to fill in the study tools. The researcher scheduled 2 days/week. The duration needed to assess each child ranged between 15-20 minutes. Time spent with each parent was about 15 minutes and with teacher ranged between 20-25 minutes. The duration of data collection lasted approximately 4 months, started from the beginning

of October 2015 to the end of January 2016.

### Pilot study

A pilot study was carried out on 12 (10%) of the children to test feasibility, applicability and clarity of the tools and to estimate the time needed for filling in the forms. Those who shared in the pilot study were excluded from the main study sample.

### Administrative and Ethical Considerations:

An official permission was granted to carry out the study. According to an official letter issued from Faculty of Nursing-Zagazig University and submitted to the Directorate of Education and Department of Education at Diarb-Negm city, Sharkia Governorate. Then, based on their approvals, permission was taken from the directors of the selected nursery schools for data collection. The aim of the study was explained to subjects before participation and a written consent was obtained. Participants were given the opportunity to refuse the participation and they were assured that the information would be confidential and used for the research purpose only.

### Statistical design

Data entry and statistical analysis were done using SPSS, version 20.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, means, standard deviations, medians, and interquartile ranges for quantitative variables. Cronbach alpha coefficient was calculated to assess the reliability of the developed tools through their internal consistency. Statistical significance was considered at p-value <0.05.

### Results

**Table (1)** shows that 69.3% of the study sample were at age group 5-6 years, with a Mean±SD equal 4.8±0.7, and 50.9% of them were females. Whereas, 42.1% of children were first-born children. About half of children (51.8%) had 2-3 friends.

**Table (2)** reveals cognitive styles and social skills among children in the study sample. Regarding cognitive styles, 38.6% of children were impulsive cognitive style, while, 35.1% were reflective cognitive style. As for social skills, 50.0% of children had deficient social cooperation and social interaction respectively.

**Table (3)** reveals that highly statistically significant relationships were found between cognitive styles and social skills. It was noticed that children with impulsive cognitive style showed less efficiency of social cooperation, social independence, social interaction, and total social skills than children with reflective cognitive style ( $p < 0.001$ ).

**Table (4)** demonstrates relations between impulsive/reflective cognitive styles and children's characteristics. Concerning gender, 63.4% of males were impulsive, whereas, 58.1% of females were reflective, with statistically significant difference ( $\chi^2 = 3.91$ ,  $P = 0.048$ ).

**Table (5)** displays relations between impulsive/reflective cognitive styles and parents' characteristics. Concerning parents' education, 70.6% and 66.7% of children, whose fathers and mothers respectively had basic/intermediate educational levels were impulsive, whereas, 60.0% and 64.1% of children, whose fathers and mothers respectively had university educational level were reflective, with highly statistically significant differences. As for mother job, 62.5% of children, whose mothers were housewives were impulsive, whereas, 67.9% of children, whose mothers were working were reflective, with a

highly statistically significant difference.

**Table (6)** represents correlation matrix of social skills scores, cognitive errors and time. It indicates that statistically significant positive correlations were found between total time and social cooperation, social independence, and social interaction ( $r = .500$ ,  $.392$ , &  $.388$  respectively). Conversely, statistically significant negative correlation was found between total time and total cognitive errors ( $r = -.505$ ).

**Table (7)** represents best fitting multiple linear regression model for the social independence score. It indicates that female gender, number of friends, father's age, and reflective cognitive style were statistically positive independent predictors of social independence score. However, mother's age and impulsive cognitive style were statistically significant independent negative predictors. The regression model explains that 50% of the variation in social independence score as indicated by r-square value.

**Table (8)** displays best fitting multiple linear regression model for the social interaction score. It indicates that female gender, number of friends, father age, and reflective cognitive style were statistically positive independent predictors of social interaction score. While, mother's age and impulsive cognitive style was statistically significant independent negative predictors. The regression model explains that 54.7% of the variation in social independence score as indicated by r-square value.

## Discussion

The cognitive processes that are needed to develop in childhood in order to help individuals make sense of the complexities of the world around them are formidable. children's cognitive style, which incorporates their views of themselves, the world,

and the future, involves processes, where children learn to understand events around them, as well as interpret the varied social interactions, both predictable and unpredictable, that they encounter Cortina et al<sup>(6)</sup>.

The present study findings revealed that more than two thirds of the study sample were at age group 5-6 years and almost half of the study sample were females. Regarding cognitive styles, the present study finding revealed that children with impulsive cognitive style were slightly more than children with reflective cognitive style. This might be due to inappropriate discipline, lack of attention and peer rejection, which intensify signs of impulsivity. Similarly, Secer et al.<sup>(7)</sup> found that impulsive children were more than reflective ones .

In relation to social skills, the present study finding clarified that around half of the study sample had deficient social cooperation and social interaction. This result might be due to that children are egocentric, loving acquisition and self-centered. On the contrary, Vahediet al.<sup>(8)</sup> revealed that children's social skills and social competence improved continuously at this age due to increasing in interaction experiences.

The present study results indicated that highly statistically significant relationships were found between cognitive styles and social skills. Children with impulsive cognitive style showed less efficiency of social cooperation, social independence, social interaction, and consequently their total social skills than children with reflective cognitive style. This might be due to that impulsive children are less liked by their peers and less cooperative. The finding of this study was in accordance with KayiliandKocyigit<sup>(9)</sup>, who found that there was a highly statistically significant difference in favor of children with reflective cognitive style concerning their total social skills.

Concerning gender, the present study findings revealed that impulsive

males were more than impulsive females, with statistically significant difference. The rationale of this phenomenon might be due to that most boys are characterized by distracted attention and respond quickly unlike most females. This finding was in accordance with Seceret al.<sup>(7)</sup>, who found that girls were more reflective than boys.

Concerning parents' education, the study results revealed that children whose parents had high educational levels were more reflective and showed better academic performance than children whose parents had basic or intermediate educational levels, with highly statistically significant differences. This result might reflect that highly educated parents "especially mothers" give more attention to their children and spend more time with them to see their progress. This finding was in alignment with Al-Salami <sup>(10)</sup>who revealed that children of higher educated parents were more reflective and creative than children of lower educated parents .

Considering mothers' job, the study findings showed that children of working mothers were more reflective than children of housewife mothers with a highly statistically significant difference. This might be due to that working mothers feel guilty toward their children, so, they show more attention, care and attachment and their children become more independent. This finding was on the same line with that of Ara<sup>(11)</sup>, who reported that children of working mothers were more reflective and showed higher levels of academic performance than children of housewife mothers.

The current study findings showed that, statistically significant negative correlation was found between total time and cognitive errors, while there were positive correlations between total time and social skills (i.e., social cooperation, independence, and interaction). It was noticed that when total time increased, children were

having less cognitive errors and better social skills. This finding might be contributed to that children who take more time to respond and think carefully, possibility of making mistakes will be diminished and this will be reflected in better social skills. The finding of this study was in accordance with Kayili and Kocyigit<sup>(9)</sup>, who found that reflective children had a tendency to answer slowly, make few mistakes and have better social skills.

Regarding female gender, the study results illustrated that girls had higher levels of social independence and social interaction than boys with a statistically significant difference. This finding might be contributed to the fact that gender differences likely reflect societal expectations. In Arabian societies, female children are expected to identify themselves more with the motherhood role and be more cooperative in household tasks than boys are. They are also expected to be more submissive, kind, gentle, responsive, empathic, and prosocial than boys from the very earliest age. This finding was in agreement with Abdi<sup>(12)</sup>, who found that Iranian female kindergarteners were rated as having higher cooperation, independence, interaction and total social skills.

As regards number of friends children's have, the present study findings revealed that social independence and social interaction were higher in children who had more friends compared with those who had fewer friends with a highly statistically significant difference. This might be due to that, children with more friends feel self-confident, less lonely, more popular and well-liked by others, engage in social situations successfully without fear and had greater academic success throughout their education. This finding was in alignment with Mulder<sup>(13)</sup>, who stated that children with friends had higher self-esteem because of their success of interacting with peers compared with their peers who didn't have friends.

Regarding father's age, the present study results clarified that father's age was a positive predictor factor of considerable importance in social independence and social interaction of children as confirmed in the present study regression model. This study finding clarified that, a child of older father had better social independence. This might be due to that an older father has the ability to share his plentiful experiences, knowledge and social skills with his child, and is more focused on strengthening his family relationships. This finding was on the same line with Verial<sup>(14)</sup>, who stated that through statistics, older fathers tended to raise better their children and helped them build self-esteem and social interaction.

In relation to mother's age, the present study findings indicated that mother's age was a negative predictor factor of considerable importance in social independence and social interaction of their children as confirmed in the current study regression model. The study findings revealed that children of younger mothers had better social independence than children of older mothers. The rationale of this result might be due to that a younger mother better understands her children, plays and interacts with them. This finding was in accordance with that of Leigh and Gong<sup>(15)</sup>, who mentioned that maternal age is positively correlated with child's social indices and the marginal effect of mother's age was stronger for younger mother.

### Conclusion

In the light of the main study results, it can be concluded that social skills among children with impulsive cognitive style were lower than those among children with reflective cognitive style, with statistically significant difference.

### Recommendations

Base on the results of the present study, the following recommendations are suggested:

- Social and behavioral skills training programs to preschool children to enhance impulsive cognitive style and poor social skills.
- Further researches should be developed to address the risk factors of impulsive cognitive style and poor social skills and how to manage them.

**Table 1: Socio-demographic characteristics of children in the study sample (n=114)**

Items	Frequency	Percent
<b>Age ( in years):</b>		
<5	35	30.7
5-6	79	69.3
Range	4.0-6.0	
Mean±SD	4.8±0.7	
Median	5.0	
<b>Gender:</b>		
Male	56	49.1
Female	58	50.9
<b>Birth order:</b>		
First	48	42.1
Middle	30	26.3
Last	36	31.6
<b>No. of friends:</b>		
1	10	8.8
2-3	59	51.8
4+	45	39.5

**Table 2: Cognitive styles and social skills among children in the study sample (n=114)**

Items	Frequency	Percent
<b>Cognitive style:</b>		
Impulsive	44	38.6
Neither	30	26.3
Reflective	40	35.1
<b>Social skills:</b>		
<b>Social cooperation:</b>		
Average	58	50.9
Deficient	56	49.1
<b>Social independence:</b>		
High	40	35.1
Average	57	50.0
Deficient	17	14.9
<b>Social interaction:</b>		
High	5	4.4
Average	52	45.6
Deficient	57	50.0

**Table 3: Relations between impulsive/reflective cognitive styles and social skills(as reported by teachers) among children in the study sample (n=84)**

Social Skills	Cognitive Styles		Kruskal Wallis test	p-value
	Impulsive	Reflective		
Cooperation	19.6±3.7	27.3±1.9	57.10	<0.001*
Independence	23.6±4.3	30.5±2.0	50.81	<0.001*
Interaction	19.1±4.2	28.0±2.8	57.04	<0.001*

\*Highly statistically significant ( $p < 0.001$ ).

**Table 4: Relations between impulsive/reflective cognitive styles and children's characteristics (n=84)**

Items	Cognitive Styles				X <sup>2</sup> test	p-value
	Impulsive		Reflective			
	No.	%	No.	%		
<b>Age( in years):</b>						
<5	13	52.0	12	48.0	0.00	0.96
5-6	31	52.5	28	47.5		
<b>Gender:</b>						
Male	26	63.4	15	36.6	3.91	0.048*
Female	18	41.9	25	58.1		
<b>Birth order:</b>						
First	20	58.8	14	41.2	1.04	0.60
Middle	13	50.0	13	50.0		
Last	11	45.8	13	54.2		
<b>No. of friends:</b>						
1	7	77.8	2	22.2	4.94	0.08
2-3	24	57.1	18	42.9		
4+	13	39.4	20	60.6		

\* Statistically significant.



**Table 5: Relations between impulsive/reflective cognitive styles and parents' characteristics (n=84)**

Items	Cognitive Styles				X <sup>2</sup> test	p-value
	Impulsive		Reflective			
	No.	%	No.	%		
<b>Father age:</b>						
<40	33	55.0	27	45.0	0.58	0.45
40+	11	45.8	13	54.2		
<b>Father education:</b>						
Basic/ Intermediate	24	70.6	10	29.4	7.59	0.006*
University	20	40.0	30	60.0		
<b>Father job:</b>						
Employee	23	46.9	26	53.1	1.40	0.24
Manual worker	21	60.0	14	40.0		
<b>Mother age:</b>						
<35	31	52.5	28	47.5	0.00	0.96
35+	13	52.0	12	48.0		
<b>Mother education:</b>						
Basic/ Intermediate	30	66.7	15	33.3	7.93	0.005*
University	14	35.9	25	64.1		
<b>Mother job:</b>						
Housewife	35	62.5	21	37.5	6.90	0.009*
Working	9	32.1	19	67.9		
<b>Residence:</b>						
Rural	10	71.4	4	28.6	2.44	0.12
Urban	34	48.6	36	51.4		
<b>Family size:</b>						
<5	24	55.8	19	44.2	0.42	0.52
5+	20	48.8	21	51.2		
<b>Family income:</b>						
Sufficient	43	51.8	40	48.2	Fisher	1.00
Insufficient	1	100.0	0	0.0		
<b>Live with both parents:</b>						
Yes	39	53.4	34	46.6	0.24	0.62
No	5	45.5	6	54.5		

\*Highly statistically significant (p&lt;0.001).

**Table 6: Correlation matrix of social skills scores and cognitive errors and time**

Items	Spearman's Rank Correlation Coefficient				
	Cooperation	Independence	Interaction	Errors	Time
<b>Cooperation</b>					
<b>Independence</b>	.712**				
<b>Interaction</b>	.789**	.864**			
<b>Total errors</b>	-.826**	-.825**	-.850**		
<b>Total time</b>	.500**	.392**	.388**	-.505**	

(\*\*) Statistically significant at  $p < 0.01$ **Table 7: Best fitting multiple linear regression model for the social independence score**

Items	Unstandardized Coefficients		Standardized Coefficients	t-test	p-value	95% Confidence Interval for B	
	B	Std. Error				Lower	Upper
<b>Constant</b>	18.987	2.464		7.706	.000	14.103	23.871
<b>Female gender</b>	1.742	.669	.182	2.606	.010	.417	3.068
<b>No. of friends</b>	2.249	.533	.292	4.216	<0.001	1.191	3.306
<b>Father age</b>	.456	.194	.554	2.353	.020	.072	.839
<b>Mother age</b>	-.521	.217	-.569	-2.407	.018	-.951	-.092
<b>Reflective</b>	3.908	.838	.389	4.665	<0.001	2.248	5.569
<b>Impulsive</b>	-2.149	.818	-.218	-2.628	<0.001	-3.770	-.528

R-square=0.499

Model ANOVA:  $F=19.72$ ,  $p < 0.001$ 

N.B: Variables entered and excluded: age, birth order, parents' education, job, residence, income, family size, living with both parents

**Table 8: Best fitting multiple linear regression model for the social interaction score**

Items	Unstandardized Coefficients		Standardized Coefficients	t-test	p-value	95% Confidence Interval for B	
	B	Std. Error				Lower	Upper
<b>Constant</b>	16.490	2.673		6.169	<0.001	11.191	21.788
<b>Female gender</b>	2.248	.725	.206	3.100	.002	.810	3.685
<b>No. of friends</b>	1.630	.579	.186	2.817	.006	.483	2.777
<b>Father age</b>	.404	.210	.430	1.923	.057	-.013	.820
<b>Mother age</b>	-.455	.235	-.436	-1.938	.055	-.921	.010
<b>Reflective</b>	4.289	.909	.374	4.720	<0.001	2.488	6.091
<b>Impulsive</b>	-3.795	.887	-.338	-4.278	<0.001	-5.554	-2.036

R-square=0.547

Model ANOVA: F=23.71, p<0.001

Variables entered and excluded: age, birth order, parents' education, job, residence, income, family size, living with both parents

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