

Chapter #13

ASSOCIATIONS BETWEEN PRIMARY SCHOOL CHILDREN'S PERCEPTIONS OF PARENTAL ACCEPTANCE AND REJECTION, AND THEIR DRAWINGS OF A "PERSON PICKING AN APPLE FROM A TREE"

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ABSTRACT

The present study of 644 Greek school-age children (323 boys and 321 girls, ages 10–12) examined and compared associations between perceptions of parental acceptance and rejection, and their unique depictions of a "Person Picking an Apple from a Tree" or "PPAT" drawings. Perception of parental behavior was measured by the "Parental Acceptance-Rejection Questionnaire" (Rohner & Khaleque, 2005). Drawing content was analyzed quantitatively according the Symbolic Content rating system in PPAT drawings (SC-PPAT: Bat Or, Ishai, & Levi, 2014, 2017). We employed K-means cluster analysis and obtained three relatively discrete PPAT scripts. Drawing scripts were found to be associated with children's perceptions of parental behavior. These associations were found mainly among boys, especially when perceiving their parents as highly aggressive. These results demonstrate how empirical inquiry into PPAT content contributes to identifying implicit relational representations in the drawings. Furthermore, they reinforce the value in examining drawings from a holistic perspective, i.e. not just the individual components, but also the relationship between such components; while focusing on the relational experience of children as expressed through their pictorial PPAT narratives.

Keywords: parental acceptance-rejection, children, PPAT drawings, gender difference.

1. INTRODUCTION

The parent-child relationship is critical to child development and considered to be the origin of later relational attributes and personal qualities (Clarke & Scharff, 2014). This refers not only to "real" parent-child relationships, but also to internal, mental representations of the relationships with others (Flanagan, 2016). Children have unique perceptions of parental caregiving, which not only differ from parental perceptions, but also serves as a more accurate tool for predicting a child's behavioral outcomes (e.g., Abar, Jackson, Colby, & Barnett, 2015). In general, examination of children's perceptions of their parents' caregiving ranges from available and accepting to non-available and rejecting (Nunes, Faraco, Vieira & Rubin, 2013; Khaleque, 2015).

An exhaustive theoretical and empirical research study regarding children's perceptions of their parents' caregiving was carried out within the Interpersonal Acceptance-Rejection Theory (IPARTheory; Rohner, 2016a). This theory pertains to socialization and lifespan development of children and adults. Initially, it focused mostly on the effects of perceived parental acceptance-rejection in childhood and was formed mainly using verbal tools such as interviews and self-report questionnaires (Rohner, 2016b). Parental acceptance/rejection refers to a bipolar dimension of parental warmth, with parental acceptance at the positive end

of the spectrum, and parental rejection at the negative end. Acceptance refers to parents' love, affection, care, comfort, support, or nurturance of children. Rejection refers to the absence or withdrawal of parental warmth, love, or affection from their children (Khaleque, 2015).

According to Rohner (1980), children and adults organize their perceptions of parental acceptance-rejection around four universal categories:

a) warmth/affection – the quality of the affectionate relationship between the parents and their children, and the physical, verbal, and symbolic behaviors parents use (or are perceived to use) to express these feelings and behaviors;

b) hostility/aggression – either physical, verbal, active and/or passive, and problems with the management of hostility and aggression;

c) indifference/neglect – a lack of parental concern or interest in the child; and

d) undifferentiated rejection – the individuals' belief that his/her parent/s do not really care about him or her, without necessarily being able to prove this based upon their behavior.

Two meta-analyses found that children who perceived themselves as accepted by their parents tend to display socially acceptable behaviors and positive personality characteristics (Khaleque, 2013; Khaleque & Rohner, 2012). Additionally, empirical studies worldwide have shown a correlation between parental rejection and children's psychological maladjustment; behavioral problems (including conduct disorder, externalizing behaviors, and delinquency); various psychological disorders; and decreased school performance (Dwairy, 2010; Groh, Roisman, IJzendoorn, Bakermans-Kranenburg, & Fearon, 2012; Miles & Harold, 2003; Putnick et al., 2015).

In recent years, gender-based differentials were discovered with regard to the children's parental acceptance-rejection. In a sample of 168 Greek children (ages 7-12) both boys and girls tended to perceive their parents as accepting, but girls perceived significantly more maternal acceptance than boys did. Moreover, there was a significant correlation between the psychological adjustment of boys and perceived paternal, but not maternal, acceptance (Giotsa & Touloumakos, 2014).

The aforementioned research, using only questionnaires and interviews, contributes a verbal representation of the child's experience to the study; however, there are implicit layers in the experience that do not necessarily manifest themselves verbally (Wood, 2008). Non-verbal tools provide an additional channel of expression for those who are reluctant to talk about their feelings (White, Wallace, & Huffman, 2004) as may be the case with children who experience being rejected by their parents. Projective drawings are an example of non-verbal tools commonly used to inquire into the implicit layers of the child's experience without necessarily addressing the researched subject directly. Projective Drawings (hereafter referred to as PDs) have been proposed for testing and evaluating mental development and intelligence levels in children, and later have been expanded to provide additional information about the individual, such as personality traits, emotional and cognitive development. Malchiodi (1998) states that "children's drawings are thought to reflect their inner worlds, depicting various feelings and relating information concerning psychological status and interpersonal style" (p. 1). It has been proposed that PDs provide access to mental representations via multiple information channels, including automatic or poorly self-observed mental activities (McGrath & Carroll, 2012). PDs produce content that the clinician must learn to observe and understand in order to work with the patient (Leibowitz, 1999).

A large body of evidence suggests that there are differences between the drawings of boys and those of girls, which can manifest in the pictorial content (Turgeon, 2008; Wright & Black, 2013). The "Person Picking an Apple from a Tree" (PPAT) drawing task (Gantt, 1990) is an art-therapy assessment that has been found to be invaluable in revealing

associations between emotional-behavioral problems and cognitive (executive functions) aspects in preschool children (Bat Or, Ishai, & Levi, 2014) and highly aggressive school-age children (Bat Or, Kourkoutas, Smyrnaky, & Potchebutzky, 2019). Significant associations between PPAT drawings and relationship representations have only been found among adults (Bat Or, Ishai & Levi, 2015), whereas there is still a need to study these possible associations among children.

The present study examined whether the content of children's PPAT drawings (Gantt, 1990) was associated with their perceived parental behavior as measured by the "Parental Acceptance-Rejection Questionnaire" (Child PARQ; Rohner & Khaleque, 2005). Our research hypotheses were the following:

a) Associations will be found between perceived parental acceptance-rejection and the pictorial content of PPAT drawings, specifically, parental acceptance will correlate with the positive aspects of PPAT drawings (for example, an active drawn person, successful picking, and/or a tree with apples); and, parental rejection will correlate with negative aspects in the PPAT content (for instance, a weak tree, passive drawn person, tree inclining away from the person, etc.).

(b) Associations between the questionnaire (PARQ) and PPAT pictorial content will differ substantially between genders.

2. METHOD

2.1. Participants

The sample group consisted of 644 Greek school-age children (ages 10–12) who were randomly selected from public schools in three prefectures of the Island of Crete (Heraklion, Chania, and Rethymnon). 277 children were from the fifth grade, and 367 from the sixth grade, 51% of the participants were boys and 49% were girls. Participant distribution was 86% urban residents and 14% semi-urban residents.

2.2. Instruments

2.2.1. Parental acceptance-rejection questionnaire (Child PARQ)

Parental Acceptance-Rejection Questionnaire (Child PARQ) (Rohner, 1990; Adaptation in Greek in Giovazolias, Kothali, Louvrou, & Mitsopoulou, 2010). The current study used the short form of the Parental Acceptance-Rejection Questionnaire: Child version (Child PARQ: Mother version, Child PARQ: Father version; Rohner & Khaleque, 2005). The Child PARQ short version encompasses 24 items and asks children to interpret their caregivers' behavior through their own personal experiences. Participants were asked to evaluate each statement on a four-point Likert scale ranging from 1 (almost never true) to 4 (almost always true). Mother and Father Child PARQ questionnaires are identical.

The Warmth/Affection Scale is composed of eight statements, for example, "My father/mother says nice things about me." Scores were inverted, thus high scores indicate lack of parental Warmth/Affection. The Hostility/Aggression Scale is composed of six statements, including, "My father/mother hits me, even when I do not deserve it." The Indifference/Neglect Scale has six statements, including, "My father/mother pays no attention to me." Finally, the Undifferentiated Rejection Scale incorporates four statements such as "My father/mother seems to dislike me." The Greek Child PARQ was found to be a reliable and valid instrument (Artemis & Touloumakos, 2016). In the current study, the internal consistency of the total PARQ scores of mothers and fathers in each subscale were good (Cronbach's alphas were 0.853 and 0.851, respectively, N=644).

2.2.2. “Person picking an apple from a tree” drawing task (PPAT)

The instructions proposed by Gantt and Tabone (1998) were used in the administration of the PPAT process. Accordingly, participants were given white sheets of paper (21 cm by 29.5 cm) and 12 colored markers (red, orange, blue, turquoise, green, dark green, hot pink, gray, purple, brown, yellow, and black) and were asked to draw “a person picking an apple from a tree” (Gantt & Tabone, 1998). The Symbolic Content in “Person Picking an Apple from a Tree” for school-age children (SC-PPAT/c2 Bat Or et al., 2017) comprises nine Likert-scales that range between 0 (the rated feature is absent) and 5 or 6 (the rated feature at its maximum). The scales measure three central aspects of the PPAT drawing: characteristics of the tree (for example, the number of apples on the tree); characteristics of the person (for instance, the degree in which a person is active/passive in the apple picking process); and characteristics of the tree-person relationship (for example, the position of the tree trunk in relation to the person’s location). The drawings (N = 644) were rated according to the SC-PPAT/c2 rating system; two trained raters coded 10% of each of the drawings, until they achieved substantial agreement. The inter-rater reliability was calculated by the Intra-Class Correlation coefficient, which ranged between good and excellent (.903 - .986).

2.3. Procedure

Researchers first secured approval from the Educational Institute of the Ministry of Education as well as the Ethics Committee of the University of Crete. Once approved, meetings were held with the parents of the participants in order to inform them of the purpose of this research and they were asked to sign consent forms. The research was conducted in the schools and researchers entered the class accompanied by the class teacher. On the first day, the researchers introduced themselves and administered the Child PARQ-mother/father questionnaires, and on the second day they administered the PPAT drawing task. Participants were individually asked to draw a person picking an apple from a tree; no time limitation was set. Researchers assured the children that there were no right or wrong answers, and no drawing would be considered an ugly drawing. They informed the children that the questionnaires and the drawings would be collected by the researchers.

3. RESULTS

3.1. Descriptive analyses and preliminary analyses

The Statistical Package for the Social Sciences (SPSS) 21.0 software program was used to analyze the collected data from the rated drawings and questionnaires.

3.1.1. PARQ: parental acceptance-rejection questionnaire

The descriptive statistics reveal that, on average, children reported lower perceived parental (maternal and paternal) rejection, as manifested in low scores on Hostility/Aggression, Indifference/Neglect, and Undifferentiated/Rejected scales. They also reported higher perceived parental warmth, manifested in the low scores on the Warmth/Affection scale after inverted coding, as presented in table 1. The internal consistency of the total PARQ scores of mothers and fathers were good, when Cronbach’s alphas were .853 and .851 respectively.

Table 1.
Descriptive statistics of PARQ father and mother categories.

	Range	Minimum	Maximum	Common Score	Mean	Std. Deviation
Father Warmth/Affection	24	8	32	8	11.79	4.127
Father Hostility/Aggression	18	6	24	6	7.89	2.681
Father Indifference/Neglect	18	6	24	6	9.53	3.055
Father Undifferentiated/Rejected	11	4	15	4	5.45	1.970
Mother Warmth/Affection	24	8	32	8	10.32	3.187
Mother Hostility/Aggression	18	6	24	6	7.50	2.475
Mother Indifference/Neglect	18	6	24	6	8.52	2.654
Mother Undifferentiated/Rejected	12	4	16	4	5.30	1.963

3.1.2. SC-PPAT: symbolic content in children's PPAT drawings

Data analysis shows that the common drawing for this sample includes a tree with an equal amount of strength and weakness, with five to six apples equally distributed. The tree inclines slightly away from the person, although the branches are neutrally placed in regard to the person's position and are accessible from both sides of the tree. The person is shorter than the tree (about 1:3), partially active in the picking process, and is not touching the tree. An example for the common drawing can be seen in Figure 1.

Figure 1.
PPAT with partially active person who does not touch the tree. Tree inclining slightly away from the person, with six apples equally distributed.



Table 2.
Descriptive statistics and interrater reliability for SC-PPAT/c2 scores.

Scale no.	Measure	Points on Likert scale	Score no. 1	Score no. 5 or 6	Mean (N=644)	SD (n=64)	Intra-Class Correlation coefficient (N= 64)
1	Quantity of apples on the tree	6	A tree with no apples	A tree with more than 10 apples	4.91	1.44	.984
2	Strength vs. weakness of tree	5	A very weak tree	A very strong tree	3.85	1.01	.958
3	The degree to which the person is active / passive in apple-picking	6	The person clearly avoids picking	Extraordinary picking process effort	3.85	1.11	.903
4	Degree of success in picking the apple	5	There is no contact between the person and an apple	The person holds one or more apples, disconnected from the tree	2.92	1.42	.929
5	Contact between person and tree	5	No contact between the person and the tree	Person is contained within the contour of the tree	1.54	.73	.986
6	Height ratio between person and tree	6	The person is significantly shorter than the tree (1:5 or more)	The person is taller than the tree (2:1)	3.13	1.21	.954
7	Position of the tree trunk in relation to the person	5	The tree trunk is clearly inclined away from the person	The tree trunk is clearly inclined toward the person	2.93	.70	.958
8	Placement of branches in relation to the person (close vs. far)	5	Branches or treetop are inclined away from the person	Branches are coming out of trunk toward the person	2.7	1.01	.971
9	The extent to which apples are spread out on the tree either close or far from the person	5	All apples are placed on the side farther from the person	All apples are placed on the side closer to the person.	3.31	1.02	.940

Associations between Primary School Children's Perceptions of Parental Acceptance and Rejection, and their Drawings of a "Person Picking an Apple from a Tree"

Confirmatory Factor Analysis (CFA) was conducted using AMOS software. The suitability between the theoretical model and the empirical model was examined; three indices showed that no difference was detected between the two models. Specifically, $\chi^2(7)=11.94$, $p=.103$, $CFI=.98$, $RMSEA=.033$. An inter-rater reliability analysis using Intra-Class Correlation (ICC) coefficients was performed to determine consistency between the SC-PPAT/c2 raters, until absolute agreement was reached, ranging from good to excellent, as can be seen in Table 2

Three main factors were obtained by CFA--Person Agency, Tree Accessibility, and Tree Potency. Each of these factors consists of two scales. Person Agency pertains to the drawn person's activity, including the degree in which the person is active/passive in the apple picking, and if there is contact between person and tree. Tree Accessibility pertains to the tree's orientation toward the drawn person, including the position of the tree trunk in relation to the person, and placement of branches in relation to the person. Finally, Tree Potency pertains to the characteristics of the tree, including the number of apples it bears and its strength vs. weakness. These factors yield a total of 68% of the explained variance. Inter-factor associations were also measured. The principal finding was a medium positive association between Person Agency and the Tree Accessibility, meaning the more agency the drawn person exerts in the picture, the more accessible the tree.

K-means cluster analysis was conducted for identifying groups of PPAT drawings with different combinations of PPAT's main factors values. One-way ANOVA showed significant differences between the three main factors in each cluster.

Table 3.
One-way ANOVA for factor differences within the three clusters.

		Sum of Squares	df	Mean Square	F	Sig.	η_p^2
Tree's Potency	Between Groups	522.049	2	261.024	926.513	<.001	0.711
	Within Groups	211.859	752	0.282			
	Total	733.908	754				
Person's Agency	Between Groups	248.332	2	124.166	401.735	<.001	0.517
	Within Groups	232.423	752	0.309			
	Total	480.755	754				
Accessibility of Tree	Between Groups	13.551	2	6.776	15.513	<.001	0.04
	Within Groups	328.454	752	0.437			
	Total	342.005	754				

As can be seen in Table 3, three clusters were identified in PPAT drawings. Figure 2 illustrates a drawing in cluster A: a potent tree, a low-agency person, and a neutral-to-less-accessible tree (n=295); Figure 3 illustrates a drawing in cluster B: a non-potent tree, a person with medium agency, and a fairly accessible tree (n=153); Finally, Figure 4 illustrates a PPAT drawing in cluster C: a potent tree, a person with agency, and an accessible tree (n=307). In terms of the PPAT narrative, cluster C describes the best script, in terms of coherency and reciprocity, while the two other clusters reveal gaps between personal agency and tree potency. While cluster B describes a script with a weak, though

accessible, tree and medium personal agency, cluster A reflects a potent, though less accessible tree and low personal agency.

Figure 2.
Cluster A PPAT with a potent and neutral tree in terms of accessibility, and a person with low agency.



Figure 3.
Cluster B PPAT with a non-potent and accessible tree, and a person with medium agency.

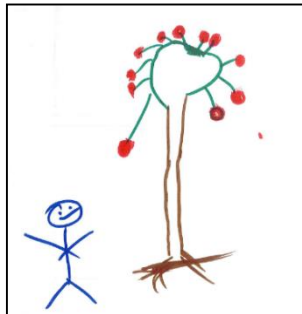


Figure 4.
Cluster C PPAT with a potent and accessible tree, and a person with agency.



3.2. Hypotheses Testing

3.2.1. Associations between perceived parental acceptance-rejection and the pictorial content of PPAT drawings

Pearson correlations were calculated between SC-PPAT/c2 main factors and the criterion variables. No significant correlations were found between SC-PPAT/c2 main factors and parental acceptance-rejection of mothers or fathers for the whole sample. We thus analyzed this hypothesis with regard to PPAT's three clusters. One-way ANOVA was conducted, showing a significant difference between clusters B and C in terms of their maternal rejection scores $F(2, 337)=3.73, p=.025$. Specifically, children who drew a PPAT that illustrated cluster B script (a non-potent but fairly accessible tree, with a person having medium agency) tended to report their mothers as more rejecting, in comparison to children that drew cluster C PPAT (a potent and accessible tree, with person agency), thus confirming the first research hypothesis.

3.2.2. Gender differences

Pearson's correlation coefficients were calculated between PARQ categories and SC-PPAT/c2 factors for both boys and girls. One significant association was found in the boys' group, while correlations were not obtained for girls' group. Person Agency was the only main factor associated with PARQ categories. Person Agency was negatively associated with mother's Hostility/Aggression, $r = -.207, p < 0.01$; in other words, the more the boy perceived his mother as hostile and aggressive toward him, the lower the drawn person's agency, and vice versa: the less hostile and aggressive the boy perceived his mother to be, the more the drawn person expressed agency. In order to examine the differences in correlations that were found between the boys' group and the girls' group, z-tests for differences between Pearson's correlation coefficients were conducted. A significant difference between boys and girls was found, showing negative correlation in the boys group ($r = -.207, p < .001$) but not in the girls group ($r = -.017, ns$), $z = 2.33, p < 0.05$. In addition to these analyses, a one-way ANOVA analysis was conducted in each gender group between

the three clusters and validity variables. Among boys, two significant differences relating to parental hostility levels were found. Specifically, a significant difference between clusters A and C in terms of scores regarding father's hostility $F(2, 347)=3.42, p=.034$; and a significant difference between clusters A and C in terms of their scores of mother's hostility $F(2, 337)=3.72, p=.025$ were detected. This compelling discovery revealed that only boys demonstrated significant differences between cluster A and C (between PPAT with a potent tree, a low agent person, and a neutral to less-accessible tree and PPAT with coherent and reciprocal relations between the person and the tree. i.e., they are both potent and the tree is also accessible) in relation to their reports about parental hostility levels. By the same token, boys who reported higher parental hostility tended to draw cluster A PPAT (with a mixed script: a potent tree, a person with low agency, and a neutral to a less-accessible tree) in comparison to boys that reported lower parental hostility levels and tended to draw cluster C PPAT (with a coherent script, in which all the three factors -a potent and accessible tree, and a person with agency—are positive). These results confirmed the second hypothesis.

4. DISCUSSION AND CONCLUSION

This study clearly demonstrated the necessity to explore the associations between school age children's perceptions of parental acceptance-rejection and PPAT drawings. The preliminary analysis showed that the PPAT drawings of school age children comprise three main content factors: tree potency, tree accessibility, and the drawn person's agency.

Results demonstrated that certain PPAT scripts were associated with maternal hostility: specifically, children that reported higher levels of maternal rejection tended to draw a less potent tree and a person with neutral to low agency. These drawn objects might be representative of the children's internal working models, and thus influenced by their relational expectations, e.g. their hope to receive assistance from other people, how cooperatively they interact, their self-worth, and their ability to achieve goals (Grossmann, Grossmann, & Waters, 2006). These findings can be understood in the broader cultural context. It has been well established that mothers serve as primary caregivers (Greenfield, Suzuki, & Rothstein-Fisch, 2006), largely being responsible for home and family and generally carrying a heavier burden in routine-parenting (Barnard & Solchany, 2002; Metsapelto & Pulkkinen, 2003), even when working full-time (Guryan, Hurst, & Kearney, 2008). Maternal rejection and hostility might enforce the child's sensitivity to rejection, possibly leading to automatic interpretation of social interaction as threatening (Cassidy, Kirsh, Scolton, & Parke, 1996; Romero-Canyas, Doweeny, Berenson, Ayduk, & Kang, 2010). This can be seen in the children's PPAT drawing scripts, which objects having less potency: a weaker tree, with fewer apples on it alongside a person that shows neutral levels of agency during the picking process (a mix of passivity and activity, and minor contact with the tree). In regard to gender differences, associations between parental hostility and a non-coherent PPAT script were found only among boys. Studies show that there is a difference in parental response to emotional expression towards boys and girls. Parents tend to accept and even encourage an emotional conversation with girls, but not with boys (Adams, Kuebli, Boyle, & Fivush, 1995; Dunn, Bretherton, & Munn, 1987; Eisenberg, 1999; Flannagan & Perese, 1998), providing girls with more opportunities for emotional discourse than boys (Melzi & Fernández, 2001). Therefore, it can be assumed that boys might use the invitation to draw (as a nonverbal expression) to express their emotions regarding close relationships.

The results indicate that the pictorial space in children's drawings, communicated through various symbols and thematic scripts, may reveal their subjective experience. In addition, our research establishes that a broader observation of drawing narratives or script is required to understand the child's subjective relational experience, especially when observing normative middle-childhood children, as was the case in this study. This is similar to clinical work with clients, where clinicians attempt to gain access to the client's relational scripts through personal narratives (McLeod, 1997).

5. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The present study has some methodological limitations. The first being that the combination of drawings and self-reported questionnaires is problematic in terms of theoretical validity, since each method (verbal and non-verbal) may communicate different representational levels of expression (Andreou & Bonoti, 2010; Bosson, Swann, & Pennebaker, 2000). While theoretical concepts measured by a self-report questionnaire focus on specific mental phenomena, projective drawings contain multi-channel information (McGrath & Carroll, 2012) providing a more comprehensive picture. To further this understanding in a future study, participants could be requested to provide a verbal narrative for their PPAT (Matsopoulos, Nastasi, Fragkiadaki & Koutsopina, 2017) and this may contribute to better understanding their relational perception.

Secondly, this study did not include some important components of school-age life, namely social context and peer relations. Social networks expand significantly in middle childhood (Bornstein, 2002; Blake, 2011). During school years, children spend less time with family members in comparison to peers and other adults outside of the family, such as teachers (Feiring & Lewis, 1991; Steinberg & Silk, 2002). Since previous findings found peer acceptance to correlate with high levels of self-competence (Boulton & Smith, 1994; Kurdek & Krile, 1982), we encourage future studies to investigate these perceptions with association to the PPAT. Furthermore, children's perception of their teachers' acceptance-rejection, as can be measured by the Teacher Acceptance-Rejection questionnaire (TARQ; Rohner, 2005), can also be significant. This is relevant especially in light of research indicating that acceptance by teachers' influences school performance and behavior in children (Ali, Khaleque, & Rohner, 2015), and that there is a correlation between children's perception of their relationships at home and at school (Tulviste, 2011).

Lastly, this study did not take into account cognitive abilities/limitations that may impact the drawings, such as learning disabilities, which are a main concern for parents and teachers of children in middle childhood (Roberts, Block, & Block, 1984; Swanson & Harris, 2013). Considering previous findings that indicated a significant correlation between cognitive dysfunctions in preschool children and their PPAT drawings (Bat Or, et al., 2014), we recommend that a future study include measures of cognitive abilities, in order to examine their association with the PPAT pictorial context of middle childhood children for a more comprehensive view into the child's evolving psychological health.

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