Playing with a child with ADHD: a focus on the playmates

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Abstract
Play is the context for acquiring social skills. While it is logical to suspect that the difficulties associated with ADHD would affect play, there is surprisingly little work in that area. Further, there is almost no previous research describing the playmates of children with ADHD. This study involved children with ADHD (n = 112) playing with a usual playmate (n = 112), and pairs of age-, ethnicity-, and sex-matched children (n = 126) playing together. In this paper, the authors interpret the data from the perspective of the playmates. The overall finding was that the play behavior of the playmates closely resembled that of the children with ADHD; it was characterized by low levels of empathy. A primary purpose of this paper is to explore possible explanations for this surprising finding. Two possible explanations are explored. First, children with ADHD are demanding playmates so that children who play with them mirror their negative behaviors. Second, although the playmates did not have ADHD, their play behaviors might reflect the known risk of negative behaviors reported amongst siblings and peers of children with ADHD. Evidence to support both explanations is presented and new lines of research are proposed to examine each possibility.

Key words: Empathy, peers, playfulness, siblings

Introduction
Play is very often a social experience (1,2). In play, children imitate social actions and learn to interact (3). By modelling adults, infants enjoy playful intimacy and gain experience in social reciprocity (4). They develop more complex prosocial behaviors such as praising, conversing, smiling, sharing, and waiting for a turn (5). Furthermore, social play promotes active peer engagement and social competence, which are regarded as “cornerstone” skills that lead to the development of cognitive, social, and cultural competence (6).

Given that play is so commonly the context for social interactions and for acquiring social skills, it is surprising that so little research on the sequelae to ADHD has been done in the context of free play – and that almost no research has focused on the effects of children with ADHD on their playmates. What limited research there is on the play of children with ADHD suggests that they are less playful (7,8); have difficulty sustaining associative and cooperative play (7,9); struggle to transition between play activities (7); and demonstrate increased negative behaviors such as disruptions, non-compliance, rule violation, and defiance (10,11).

Few studies occur in the context of dyadic play or involve the usual playmates of the children with ADHD. One exception was a study by Mash and Johnson (12) carried out during free play between siblings, one of whom had ADHD. (Siblings are very often the playmates of children with ADHD.) Mash and Johnson found that the boys with ADHD demonstrated significantly higher levels of negative behavior (i.e. anger, refusal, discouragement, and defiance) than comparison boys.
Tyler (13) conducted the only detailed observational analysis of children with ADHD playing with their real-life friends. Tyler found the friendships were less intimate and reciprocal and that the play was less associative and cooperative than play between friends who did not have ADHD. However, the usefulness of these findings is limited by the small sample size (n = 12). We are not aware of any other research that has focused on the playmates of children with ADHD within the context of play.

The authors also were interested in the play of children with ADHD. Observing them in the context of dyadic play with a usual playmate, we (14) found in our initial analysis that children with ADHD seemed to lack interpersonal empathy as it has been described by Feshbach (15). That is, the behavior of the children with ADHD suggested difficulty (a) discriminating the emotional states of a playmate; (b) taking the perspective of the playmate; and (c) evoking a shared affective response. These findings supported earlier speculations by Barkley (16) and the findings of other researchers (17–19). They predicted that deficiencies in inhibitory control would cause children with ADHD to have less appreciation for the needs, feelings, and opinions of others (i.e., less empathy) and a reduced ability to evaluate ongoing social events from the perspective of another.

Not surprisingly, most of the related research on children with ADHD suggests that they have few friends. The playmates of children with ADHD consider them to be intrusive, boisterous, and annoying (20), characteristics that may lead to social rejection (21). Social rejection, in turn, may cause children with ADHD to gravitate toward other children who also have social and behavioral difficulties (21)—both in being accepted (22) and because children with ADHD may perceive inappropriate or deviant behavior to be stimulating (22,23).

Because they have few friends, children with ADHD rely on siblings for playmates more frequently than do typically developing peers (12,24). While most sibling relationships form the foundation for social skills and enable the siblings to develop relationships outside the family (24), the relationships between children with ADHD and their siblings are often troubled (20,24,25). Similar to children with ADHD who can be intrusive, boisterous, and annoying (20), their “typical” siblings also are prone to negative behaviors and are at risk of emotional and behavioral disorders (12,26,27). Given the affiliation of children with ADHD with “deviant” peers and the difficulties associated with siblings of children with ADHD, it can be expected that the play of siblings and playmates of children with ADHD may also be negatively influenced.

Aware that playmates had to be selected very carefully, the authors asked the parents of each participating child (with or without ADHD) to complete a Connors’ Parent Rating Scale—Revised (28) to confirm the presence of ADHD in children with ADHD and to ensure that the typically developing children (playmates and control children) did not have ADHD. To be certain about the status of the typically developing children, the researchers also ascertained that no concerns had been raised by parents, teachers or health professionals about their development or behavior. Any child for whom concerns were raised (n = 46) was excluded from the study.

In keeping with a rigorous study design, the data were analyzed separately for children with ADHD, their playmates and the control children. This included item-by-item graphing of each score by group.

Given the care that was taken in ensuring that the playmates were indeed typically developing, the authors were surprised to find the degree of difference between the playmates and the control children. We were particularly surprised by how closely the playmates’ play resembled that of the children with ADHD and that those differences were statistically significant. Thus, the purpose of the paper is to explore possible explanations for the surprising finding that Test of Playfulness scores of the playmates were more like those of the children with ADHD than those of the control group following a secondary analysis. Understanding the play of the playmates is important given how little is known about the playmates of children with ADHD and that these findings may influence future interventions aimed at improving the play of children with ADHD. Therefore an important aim of this paper is to explore two possible explanations. First, children with ADHD are demanding and domineering playmates and may have a strong influence on play transactions. Second, although the playmates did not have ADHD, their play behaviors might reflect the known risk of negative behaviors reported amongst siblings and peers of children with ADHD.

Material and methods

Participants

This study compared data from two groups. Group 1 comprised 112 children with ADHD each playing with a typically developing playmate (n = 224). Group 2 comprised 63 pairs (n = 126) of typically developing children playing together. Thus the total number of participants was 350. All children were between the ages of 5 and 11 years and were proficient English
The children with ADHD and the Group 2 children were matched within three age bands (5–6 years; 7–8 years; and 9–11 years); they also were matched and for sex and ethnicity. The children with ADHD and their playmates were not matched on any criteria as the playmates of children with ADHD were selected by the child with ADHD. This was done to avoid unfamiliar playmates influencing the results in unacceptable ways. Data on socioeconomic status also were gathered; however, it was not possible to match the groups a priori for socioeconomic status. Demographic information for all children and their primary caregivers is summarized in Table I.

Children in Group 2 and the playmates of children with ADHD in Group 1 were known not to have ADHD as defined by the DSM-IV criteria for ADHD (29). For the purpose of this paper, “typically developing” is defined as a child who (a) did not have ADHD (i.e. scored below the clinical cut-off for any of the Connors’ Parent Rating Scales—Revised (long version) (CPRS-R: L) subscales and DSM-IV scales and (b) for whom no concerns had been raised about their development or behavior by a parent, teacher or health professional. Mean CPRS-R: L subscale scores for both groups are given in Table II.

Children with ADHD. Children in this group (n = 112 after exclusion) were recruited from district health boards and pediatricians’ practices in Auckland, New Zealand. To be included in the study, children had a formal and unambiguous diagnosis of ADHD made by a psychiatrist or pediatrician according to DSM-IV criteria. Common comorbid conditions (e.g. learning disorders, oppositional defiant disorder, conduct disorder, anxiety disorder and mood disorder) did not result in exclusion as long as ADHD was the primary diagnosis. However, children with major neurodevelopmental or psychiatric disorders (e.g. autistic spectrum disorder, intellectual disability, movement/tic disorder, or organic brain syndrome) were excluded. The child with ADHD invited a playmate of a similar age. Fourteen children with ADHD (11.1% of the total number of participants who originally gave consent to participate) were excluded because they were unable to identify a playmate who met the criteria for playmates (described below). Additionally, any children with ADHD who were on medication where an overnight period was an insufficient wash-out (e.g. atomoxetine) were excluded. Children did not take medication prescribed for ADHD on the day of the assessment.

Typically developing playmates of children with ADHD. Playmates (n = 112 who participated in the study) were invited by the children with ADHD; they were similar in age. They met all criteria specified above. Approximately 60% of the 112 playmates were siblings because that proportion of the children with ADHD identified that they did not have another usual playmate. Forty-six playmates (29.1% of the playmates who consented to participate originally) were excluded from the study because they scored above the clinical cut-off on the CPRS-R and/or concerns were raised about their development or behavior. An alternative playmate was recruited when playmates were excluded.

### Table I. Participant demographics by group.

<table>
<thead>
<tr>
<th></th>
<th>Children with ADHD</th>
<th>Playmates of children with ADHD</th>
<th>Children in control group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age (SD) in years</td>
<td>8.9 (1.4)</td>
<td>8.4 (1.9)</td>
<td>8.6 (1.5)</td>
</tr>
<tr>
<td>Percentage boys</td>
<td>80.3%</td>
<td>75.2%</td>
<td>78.7%</td>
</tr>
<tr>
<td>Percentage girls</td>
<td>19.7%</td>
<td>24.8%</td>
<td>21.3%</td>
</tr>
<tr>
<td>Ethnicity:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) European</td>
<td>67.8%</td>
<td>65.2%</td>
<td>65.2%</td>
</tr>
<tr>
<td>(b) Maori</td>
<td>16.1%</td>
<td>16.1%</td>
<td>19.7%</td>
</tr>
<tr>
<td>(c) Other ethnicities</td>
<td>16.1%</td>
<td>18.7%</td>
<td>15.1%</td>
</tr>
<tr>
<td>Primary caregiver’s highest level of education:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Did not complete high school</td>
<td>13.4%</td>
<td>10.7%</td>
<td>19.1%</td>
</tr>
<tr>
<td>(b) Completed high school</td>
<td>40.2%</td>
<td>39.3%</td>
<td>46.8%</td>
</tr>
<tr>
<td>(c) Completed tertiary qualifications</td>
<td>46.4%</td>
<td>50.0%</td>
<td>34.1%</td>
</tr>
<tr>
<td>Primary caregiver’s occupation:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Jobs that do not require tertiary qualifications</td>
<td>63.4%</td>
<td>58.9%</td>
<td>75.4%</td>
</tr>
<tr>
<td>(b) Jobs that do require tertiary qualification</td>
<td>36.6%</td>
<td>41.1%</td>
<td>24.6%</td>
</tr>
</tbody>
</table>
Typically developing control children. Group 2 included 126 children (63 pairs) recruited from professional networks such as local schools and the health services workforce. They met all criteria specified above.

**Instruments**

The Test of Playfulness (ToP) (30) was used to measure the children’s play. The ToP is a 29-item observer-rated instrument suitable for children and teens between the ages of 6 months and 18 years. The ToP is administered in an environment that is supportive of play. Each item is rated on a four-point (0–3) scale. Scores reflect either extent (proportion of time), intensity (degree of presence), or skillfulness (ease of performance). The ToP measures the concept of playfulness as a reflection of the combined presence of four elements contributing to a single (unidimensional) construct of playfulness: perception of control, freedom from constraints of reality, source of motivation, and ability to give and read social cues (31–33). One overall scaled score is calculated with a mean of 50 and a standard deviation (SD) of 10. See Table III for item descriptions.

**Table II. Connors’ Rating Scale – Revised subscale scores.**

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Subscale description</th>
<th>ADHD (n = 112)</th>
<th>Playmates (n = 112)</th>
<th>Control (n = 126)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD) scores</td>
<td>Mean (SD) scores</td>
<td>Mean (SD) scores</td>
<td></td>
</tr>
<tr>
<td>Oppositional</td>
<td>Break rules, problems with authority, easily annoyed</td>
<td>70.4 (12.7)*</td>
<td>56.9 (11.7)**</td>
<td>50.6 (11.2)**</td>
</tr>
<tr>
<td>Cognitive problems</td>
<td>Learn slowly, organizational problems, difficulty completing tasks, concentration problems</td>
<td>72.5 (10.7)*</td>
<td>51.4 (10.1)</td>
<td>49.5 (9.3)</td>
</tr>
<tr>
<td>Anxious/shy</td>
<td>Have worries and/or fears, emotional, sensitive to criticism, shy, withdrawn</td>
<td>58.9 (12.7)</td>
<td>50.3 (11.9)</td>
<td>50.8 (11.1)</td>
</tr>
<tr>
<td>Perfectionism</td>
<td>Set high goals, fastidious, obsessive</td>
<td>56.1 (12.1)</td>
<td>49.8 (11.2)</td>
<td>49.3 (9.3)</td>
</tr>
<tr>
<td>Social problems</td>
<td>Have few friends, low self-esteem and self-confidence, feel emotionally distant from peers</td>
<td>76.0 (15.1)*</td>
<td>60.4 (9.1)**</td>
<td>48.9 (7.5)**</td>
</tr>
<tr>
<td>Psychosomatic</td>
<td>Report an unusual amount of aches and pains.</td>
<td>64.4 (17.5)</td>
<td>49.8 (10.4)</td>
<td>50.6 (11.7)</td>
</tr>
<tr>
<td>Emotionally labile</td>
<td>Emotional, cry a lot, get angry easily.</td>
<td>62.8 (13.2)</td>
<td>50.6 (10.4)</td>
<td>48.5 (9.1)</td>
</tr>
<tr>
<td>Behavioral problems</td>
<td>Broad ranged behavior problems.</td>
<td>73.0 (11.7)*</td>
<td>56.2 (10.6)**</td>
<td>49.7 (9.7)**</td>
</tr>
</tbody>
</table>

Notes: *Denotes CPRS-R subscale mean scores above the clinical cut-off (i.e. subscale scores > 70). **Denotes CPRS-R subscale means scores are significantly higher for playmates of children with ADHD, compared with typically developing children in the control group on three subscales: oppositional behavior (t = 51.6, df = 111, p < 0.01), social problems (t = 49.1, df = 111, p < 0.01), and behavioral problems (t = 11.1, df = 111, p < 0.01).

**Table III. Interpretation of items with low ToP scores.**

<table>
<thead>
<tr>
<th>ToP Item</th>
<th>Scoring criteria for low ToP scores</th>
<th>Proposed explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skill to share¹</td>
<td>The player refuses to share or seems unaware that she/he possesses something another would like</td>
<td>Players are focused on having their own needs met</td>
</tr>
<tr>
<td>Skill to support²</td>
<td>The player is concerned almost entirely with meeting own needs rather than enabling others to play</td>
<td>Players are not sensitive or in tune with others’ needs</td>
</tr>
<tr>
<td>Skill in social play³</td>
<td>The player interacts in a destructive fashion or does not interact despite the presence of others</td>
<td>Players struggle to move outside their own frame and interact with other players</td>
</tr>
<tr>
<td>Skill in responding to play cues⁴</td>
<td>The player does not respond or responds in a negative/hurtful way to the playmate’s cues</td>
<td>Players are not sensitive or in tune with others’ needs</td>
</tr>
<tr>
<td>Skill in pretend play⁵</td>
<td>The player seems to have little ability to convince onlookers that something about the play is no longer based in reality</td>
<td>Players have difficulty imagining or taking on another’s perspective/viewpoint</td>
</tr>
<tr>
<td>Intensity of social play⁶</td>
<td>The player does not get intensely involved with playmate’s presence</td>
<td>Interaction with others is superficial</td>
</tr>
<tr>
<td>Skill to transition between activities⁷</td>
<td>The player gets “stuck” on an activity that is not meeting the needs of players or constantly goes from one activity to another</td>
<td>Players have difficulty in assessing the play situation to remain engaged in play</td>
</tr>
</tbody>
</table>
The ToP has evidence for excellent inter-rater reliability (data from 96% of raters fit the expectations of the Rasch model) and construct validity (data from 93% items and 98% of people fit Rasch expectations), [e.g. 34], and moderate test–retest reliability (intra-class correlation 0.67 at p < 0.01, e.g. (35)). The latter is not unexpected in observational assessments administered in naturalistic environments (34,35). Evidence for concurrent validity has been established with the Children’s Playfulness Scale (CPS). The CPS is one of only two other existing assessments of playfulness with established validity and reliability (34). The correlation between the ToP and the CPS was $r = 0.46 \ (p = 0.0001)$ (35). The ToP and the CPS differ because the CPS includes items reflecting cognitive and motor domains inappropriate for children with disabilities (34). Thus the moderate magnitude of the correlation coefficient is not surprising.

The CPRS-R: L is a paper-and-pencil questionnaire completed by parents/primary caregivers to identify children between the ages of 3 and 17 years who have symptoms consistent with a diagnosis of ADHD. The CPRS-R is one of the assessment tools most commonly used in the diagnosis of ADHD throughout the world (36). The CPRS-R: L has evidence for excellent internal consistency (0.75–0.94) and has been shown to discriminate between children with and without ADHD (sensitivity 92%, specificity 91%, positive predictive power 94%, negative predictive power 92%) using a cut-off score of 70 (37,38).

For the children with ADHD, the CPRS-R was used as an additional screening tool to confirm the diagnosis of ADHD and for their playmates and typically developing children in Group 2 to screen for the absence of ADHD. The mean scores of the CPRS-R subscales (cognitive problems, oppositional behavior, inattention, hyperactivity, anxiousness, perfectionism, social problems, psychosomatic, emotional lability, and behavioral problems) were used to assist in the interpretation of ToP findings.

Procedure

Ethical approval was obtained from the University of Sydney Human Ethics Research Committee and Northern Y Regional Ethics Committee, New Zealand. For convenience of the families, data from the two groups were gathered in different but equivalent settings. The environment where data were gathered for children with ADHD was a playroom in a clinical setting where the children came regularly for assessment or intervention. The play environment for children in the control group was a designated indoor play area at the schools that the children attended.

According to Bundy (30), the play environment where observations are made for scoring the ToP should be one in which the child feels physically and emotionally safe in order to increase chances for spontaneous and intrinsically motivated play behavior to occur. The categories of the Test of Environmental Supportiveness (TOES) were used as a guideline to confirm that the play spaces used for study observations were conducive to spontaneous child play. TOES operationalizes the ways in which four aspects of the environment influence players’ meeting their motivations to play: caregivers, playmates, objects, and play space (33).

The toys available in the playrooms where study observations were made catered to gender differences, the age range of the children, and for their likely motivations for engaging in free-play activities. A diversity of play materials was present in the room to support a range of play. Examples of the toys include dress-up clothes, construction toys, a sandbox, and hand puppets. The same toys were present during all play sessions and in both settings. The children were allowed to choose play materials and activities.

An unobtrusive observer was present in the play room; the observer did not intervene unless a child was in danger. Prior to the play session, the observer informed the children that they could play with any of the toys for 20 minutes. When children attempted to interact with the observer after the introduction, the observer responded in a neutral manner. The observer recorded the entire play session using a handheld video camera for purposes of later scoring.

A single experienced and calibrated rater, blinded to the purpose of the study, scored all children on the ToP from the videotapes. Calibration ensured the consistency of her ratings by comparing her scores with those of hundreds of other raters in a larger ToP sample ($n > 3000$ observations); goodness-of-fit statistics derived from calibration data were within an acceptable range. To ensure that her scores did not drift, the same rater rescored approximately 20% of the videotapes; these were randomly selected. Scores from both test administrations were analyzed with Facets (see “Data analysis” below) and time 1 and time 2 scores were compared. None differed by more than the standard error of measurement.

Data analysis

To attain interval level scores for each participant, ToP raw scores were subjected to Rasch analysis (39).
using the Facets® program Version 3.62.0 (40). The resulting measure scores were then entered into t-tests (SPSS® Version 15, 2007) to compare the means of the groups. Differences between means were regarded as significant when \( t \geq 1.96 \) or \( \leq -1.96 \) (41). All significance levels were set at \( p < 0.05 \).

After calculating measure scores, Facets checks for bias specifiers between the model and specifications. Bias interaction was used to examine systematic differences between the groups on each ToP item. Bias interaction is used to correct for estimation bias when data correspond to pairwise observations (such as dyads playing together). The bias interaction for each item by diagnostic group is expressed as a \( t \)-value. Since the children with ADHD were compared with pairs of typically developing children, observations from the children in the control group were weighted at 0.5 to reduce any potential bias and enable pairwise analysis (40).

Bias interaction analyses generated by Facets also can be used to ensure equivalence of the groups with regard to potentially confounding variables. The effects of nine such variables were tested: (1) sex, (2) age (in three bands: 5–6; 7–8; and 9–11 years), (3) ethnicity, (4) socioeconomic status, (5) younger vs. older sibling playmates, (6) age difference between playmate pairs, (7) sibling vs. peer playmates, (8) clinically significant Oppositional Defiant Disorder (ODD) symptoms vs. non clinically significant ODD symptoms, and (9) clinically significant anxiety symptoms vs. non clinically significant anxiety symptoms.

**Results**

Prior to any other analyses, we tested for the effects of the confounding variables listed above. None of the results was significant. These findings suggests that none of the confounding variables that we tested (e.g. age difference between playmate pairs) accounted for the observed differences.

\( T \)-tests revealed that mean overall ToP score of the typically developing playmates of children with ADHD was significantly higher than that of children with ADHD \( (t = 12.6, p < 0.01; df = 111) \) but lower than that of children in the control group \( (t = -12.4, p < 0.01; df = 111) \). Subsequent bias analyses revealed that the playmates performed significantly better than the children with ADHD on only two individual ToP items, “modify (8)” and “persist (24)”. (Numbers in parentheses refer to ToP item numbers shown in Figure 1). In contrast, the playmates of children with ADHD scored significantly lower than children in the control group on seven items: “skill to share (4)”, “skill to modify (8)”, “skill to support (5)”, “skill to transition (9)”, “intensity of social play (11)”, “skill of social play (12)”, “skill of pretend play (14)”, and “skill in responding to play cues (29)”. Playmates of children with ADHD scored significantly higher than children in the control group on four items: “skill to modify (8)”, “extent of using mischief and teasing (17)”, “extent of being involved for the process (23)”, and “intensity of persistence (24)”. The results of the pairwise bias interaction used to examine systematic differences between the children with ADHD and their playmates on each ToP item, and playmates of children with ADHD and typically

![Figure 1. Bias interaction of children with ADHD vs. playmates vs. controls and ToP items.](image-url)
developing children in the control group is depicted in Figure 1.

Discussion

Despite our attempts to ensure that the playmates of the children with ADHD were typically developing, the pattern of ToP scores of playmates of children with ADHD resembled the pattern of the children with ADHD more closely than that of the typically developing children playing together. Having established that the differences in play were significant for all three groups, the data were examined for possible explanations.

Some of the more interesting findings were revealed by comparing the data from the pairs of typically developing children with data derived from the pairs comprising children with ADHD and their typically developing playmates. Taken collectively, the ToP items on which the latter pairs scored significantly lower (see Table III) suggests a problem with interpersonal empathy. Empathy, as described by Feshbach (15) and applied to the ToP items (see numbers denoted in superscript in Table III) comprises (1) the ability to discriminate and identify the emotional states of another (Item 4); (2) the capacity to take the perspective or role of the other (Items 1, 5, 7); and (3) the evocation of a shared affective response (Items 2, 3, 6).

Indicators of empathy (i.e. caring, sharing, cooperating, helping others, generosity, compliance, and supporting others) represent prosocial behavior (42,43) that, in turn, is key to peer acceptance. Thus, these results suggest that both children with ADHD and their playmates tend toward decreased prosocial behavior—at least when they are playing together.

The reason why the children with ADHD and their typically developing playmates played very similarly is unclear. However, several possible explanations have been suggested in previous literature. The first, and the researchers believe most likely, explanation is that children with ADHD are demanding playmates who may mirror the negative behaviors of the children with ADHD. At the very least, siblings and regular playmates who are determined to keep the play transaction flowing may accommodate to the play behavior of children with ADHD by being adaptive and flexible. This latter argument is well supported by our data. In comparison with children with ADHD, their playmates scored significantly higher on “persisting (24)” to overcome barriers to keep the play transaction flowing, and “modifying (8)” the play activities to vary the challenge or degree of novelty to keep the activity evolving. Together these can be interpreted as the means by which the playmates adapted the play transaction to ensure it flows.

That playmates are seeking to maintain the flow of the play transaction is also supported qualitatively in our observations of the play transactions. Most children with ADHD tended to adopt a singular play theme and their playmates followed suit, presumably in an effort to keep the play transaction flowing. An example from one of the video recordings is presented to illuminate this pattern described above: “Tim” (a boy with ADHD) and playmate “Sarah” were playing with bubbles. Both were engaged in the game of popping bubbles and laughed with exuberance when they managed to successfully pop each other’s bubbles by stomping on them when they landed on the floor. They continued popping bubbles for about 5 minutes when “Sarah” suggested they try to make massive bubbles by blowing the bubbles into each other (merging them). However “Tim” did not accept the novel idea and they continued blowing and popping bubbles. This pattern of the playmates’ attempts to modify the play being rejected by the children with ADHD was observed in many of the play transactions.

Second, while our recruitment strategy ensured that the playmates did not have ADHD, their play behaviors might reflect the known risk of negative behaviors reported amongst siblings and peers of children with ADHD (12). This second explanation is supported by data from our recruitment suggesting that nearly 60% of children with ADHD did not have a usual playmate other than their siblings and that 29% of the playmates who did consent to participation in the study were excluded because of the degree of problems behaviors they exhibited. This finding underscores that children with ADHD have limited opportunities for social interaction, at least outside the family environment. Further support of this explanation was discovered by an in-depth post hoc look at our CPRS-R results. Having all subscale scores within normal limits was an inclusion criterion for the playmates. However, when comparing the mean scores of the control children with those of the playmates, the playmates’ mean scores were significantly higher on three subscales: oppositional behavior, social problems, and behavioral problems.

Whatever the actual reasons are for the observed play patterns of the playmates of children with ADHD, the overall results overwhelmingly suggest that children with ADHD and their playmates both demonstrate play patterns that suggest less empathy compared with typically developing children in the control group. Less empathetic responding may...
have adverse implications for prosocial development (10,16), particularly as play is the milieu within which children develop social skills and form peer relationships.

Limitations

Care was taken to ensure that the playmates of the children with ADHD were typically developing by ensuring that their CPRS-R scores were within normal limits and that caregivers did not have concerns about their development. Finding significant differences between the control group and the playmates of the children with ADHD was not anticipated. Therefore, the playmates of children with ADHD playing with other typically developing children was not observed. As such, the play pattern of the playmates when they play with other typically developing children remains unknown. Thus, the best explanation for the findings remains elusive. Furthermore, it was not feasible to draw a random sample. Hence the ability to generalize the results of this study to children with ADHD in other populations is somewhat limited. However, the strength of the results indicates the need for further research.

Conclusions and implications for further research

The findings show that the play patterns of playmates of children with ADHD resembled that of the children with ADHD more closely than the play pattern of typically developing children playing together. Even though the authors can offer reasonable hypotheses for the similar play behavior, those hypotheses can only really be examined by pairing usual playmates of children with ADHD with other typically developing playmates.

The similarities in play between the children with ADHD and their otherwise typically developing playmates when they play together raises at least two additional questions. First, is the pattern of play behavior observed in the playmates apparent only when playing with children with ADHD or does it carry over into play transactions with typically developing children? Second, should interventions to develop prosocial behaviors in children with ADHD include siblings and regular playmates? Both these questions are deserving of future research as there are clear advantages to involving a single playmate in intervention aimed at promoting play in children with ADHD. Targeting dyadic friendships of children with ADHD may be simpler from the perspective of the therapist conducting the intervention; thus, in some ways dyadic interventions may offer a more realistic means of improving peer relationships than is attempting to improve peer relationships using social skills training in a group comprising several children with ADHD (46).

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References

Playmates of children with ADHD


