

## **Playground Contexts for Aggression for Preschoolers with Hyperactivity**

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*This study assessed the naturalistic conditions that set the occasion for aggressive behavior in three preschoolers with hyperactivity and aggression (H/A). Peer and teacher responses to preschoolers' aggression were also investigated. For a total of 114 aggressive instances observed, relatively low percentages of aggression in social play with at least one other child were documented. The antecedent condition that was most predictive of aggression was (a) when children were seeking to enter into an activity and were denied entry and (b) when another child interrupted an on-going activity. Aggression was about 14 times greater for seeking/interrupted activity than for ongoing social play. Finally, the percentage of negative responses from peers to aggression on the playground was almost three times the rate documented in past research for preschoolers without hyperactivity.*

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**KEY WORDS:** preschool; hyperactivity; aggression; playground.

At least half of preschoolers who manifest externalizing behavior (e.g., hyperactivity, aggression) in their preschool years continue to have behavior problems into elementary school (e.g., Campbell, 1997). More specifically, preschoolers with both hyperactivity and aggression are more likely to have negative behavior outcomes than preschoolers with either aggression or hyperactivity (e.g., Stormont, 2000). Young children with hyperactivity who continue to have aggressive behavior patterns in elementary school are at great risk for peer rejection (Melnick &

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<sup>4</sup>This research was supported by a grant from the Office of Special Education Programs of the U.S. Department of Education, Grant #H029D20017 to the second author. This article does not necessarily reflect the position or policy of the funding agency.

Hinshaw, 1996; Vitaro, Tremblay, Gagnon, & Boivin, 1992) and for sustaining negative social outcomes. Research has documented that kindergarten children with high levels of hyperactivity and aggression were more likely than children with low to average levels to have third and fourth grade outcomes of peer-rated aggression and self-reported delinquency (Vitaro, Tremblay, Gagnon, & Pelletier, 1994).

Because aggressive tendencies are very difficult to change, it is important to conduct research at an early age level and in naturalistic settings (Arndorfer, Miltenberger, Woster, Rortvedt, & Gaffaney, 1994). Thus, the purpose of this study was to conduct a detailed descriptive analysis of the antecedents of and consequences for aggression for three preschoolers with hyperactivity in a playground setting. As there has not been research in this area specifically with preschoolers with hyperactivity, the literature on antecedents to aggression for preschoolers without disabilities will be presented, followed by similar research that included preschoolers with disabilities. A similar sequence of research on the consequences of aggression will follow with the addition of related research on older children with aggression.

### ANTECEDENTS OF AGGRESSION

In past research, approximately 61–73% of the immediate antecedents to aggressive behavior for preschool children in regular classrooms involved conflicts over property (e.g., toys) (Dawe, 1934; Smith & Green, 1975). Other antecedents to aggression that have been documented for preschoolers without disabilities include (a) being denied entry into an activity (“social adjustment”), and (b) having an ongoing activity blocked (“interference”) (Dawe, 1934). Rough play has been an infrequently observed antecedent to aggression (Price & Dodge, 1989).

From this limited research on preschoolers without disabilities, it appears that aggression is most commonly associated with disputes over objects. Research on anger (including verbal and physical aggression) similarly highlighted the importance of objects as antecedents. Specifically, anger was more likely to be precipitated by someone taking or destroying the target child’s property than by other antecedents (e.g., physical or verbal provocation, direct request or command, social rejection; Fabes & Eisenberg, 1992).

For preschoolers with mild disabilities, there is research on the related area of antecedents to conflicts, with the highest percentage of conflicts over property (43% over an object, 27% during pretend play, and 27% over a behavioral or rule infraction; Lieber, 1994). The frequency of conflicts over property could be explained, however, by the larger context of playing alone. That is, the play alone context is most often an antecedent to a conflict over property (Lieber, 1994) and preschoolers with mild disabilities play alone more than their age mates

(Alessandri, 1992; Kopp, Baker, & Brown, 1992). It may be that the transitional nature of playing alone, when the target child attempts to move from solitary to social play, sets the occasion for conflict.

In addition to playing alone more than same age peers, preschoolers with disabilities spend more time in transitions than their peers (22% vs. 12%; Alessandri, 1992). Research that has investigated the nature of transitioning behavior in play groups has documented significant differences between preschoolers with and without disabilities when attempting to enter playgroups and when attempting to enter an activity of just one other child (Kopp et al., 1992). Specifically, preschoolers with disabilities entered playgroups disruptively more than half of the time, whereas preschoolers without disabilities showed no disruptive entries.

Perhaps preschoolers with disabilities were more likely to be disruptive because their entry requests were denied more by their peers (80%) than were the entry bids of their classmates without disabilities (33%) (Kopp et al., 1992). These findings do not indicate whether preschoolers with disabilities were more likely to enter groups disruptively when their entry bids were denied or whether their disruptive entries (past or current) contributed to the rejection of their entry requests. The reciprocal nature of past experiences with children and how it determines current behavior toward those children is supported in the literature on consequences for aggression.

## CONSEQUENCES FOR AGGRESSION

The ways that peers and teachers respond to the aggressive behavior of children can alter the probabilities of continued aggression. It has been documented that peers directly retaliated to the aggression of male preschoolers about a quarter of the time (10% positive; 15% negative), and teachers intervened with aggressive incidents about half of the time (40% positive; 10% negative; Fagot, 1984). Furthermore, preschoolers with hyperactivity and aggression, who were observed to be aggressive with their peers at the beginning of the year, were victims of unprovoked aggression from peers at the end of the year (Olson, 1992). Thus, time in setting makes it more difficult to disentangle the behavior of children with aggression from their peer's counteraggressive behavior. Beyond this evidence that preschoolers may be subject to more aggression when they achieve aggressive status, little has been documented on the consequences of aggression for preschool children with disabilities.

Related literature on older children has indicated that negative peer attention may play an even greater role for older children, especially when children have achieved aggressive status. Peers reported that they would directly retaliate more in situations involving a child with aggression than they would if the child were not identified as aggressive (Dodge & Frame, 1982). Peers also reported they would tell the teacher about the incident (indirect retaliation) when a child with

aggression was involved (52%) more frequently than when a nonaggressive peer was involved (34%, Dodge & Frame, 1982).

### Summary

Past research with preschoolers with and without disabilities has documented that conflicts over objects are a frequent antecedent to aggression and anger. Unfortunately, other critical features of the setting have been overlooked. For example, it may be that denial of access into an activity is more important than is an object. That is, the object may represent only a means to that activity. In support of this line of reasoning, research has suggested that playing alone and attempting to make a transition from playing alone to playing with another may precipitate aggression for preschoolers with mild disabilities (Kopp et al., 1992; Lieber, 1994).

Thus, the present study extends past research by specifically assessing preschoolers with hyperactivity and aggression in a natural playground context to determine if aggression were more likely to occur (a) during transitions or (b) during ongoing play activities with a peer (social play). A continuous record of setting events under naturalistic conditions will provide for a determination of antecedent variables that are closely associated with aggression (Kamps, Leonard, Dugan, Boland, & Greenwood, 1991). A second purpose of this study was to investigate whether preschoolers with hyperactivity and aggression received either peer or teacher attention for their aggression. The literature has indicated that teachers responded contingently to aggressive incidents more frequently than did peers. However, the setting that was studied was an indoor, free play setting and the participants were average preschool children without behavior problems.

Overall, the importance of these findings could be the identification of critical environmental conditions (social play or entry into play) that set the occasion for aggression. That is, perhaps it is not lack of social skills during play that precipitates aggression as much as it is difficulty entering into play with other children or allowing other children into their play. A third purpose of this study was to identify conditions that possibly maintain aggression by assessing the responses of peers and teachers to aggressive incidents.

## METHOD

### Participants

Participants were 3 male preschoolers with hyperactivity and aggression (H/A) who were recruited through a child care facility. Two preschool lead teachers completed behavioral ratings on approximately 40 preschoolers in their classrooms who were between the ages of 3 and 6 years. The Preschool Behavior Questionnaire (PBQ, Behar, 1977) was used for the selection of preschoolers with hyperactivity

and aggression. The three preschoolers selected were rated by their teachers at least 2 *SDs* above the mean on both the Hyperactive-Distractible and the Hostile-Aggressive factors of the PBQ and were attending the preschool on a full time basis. The PBQ has been used extensively to differentiate groups of preschoolers with hyperactivity from comparison preschoolers (e.g., Mash & Johnston, 1983; Stormont-Spurgin & Zentall, 1995) and has standardized data for preschool populations (Behar, 1977). At the time of data collection, Anthony was 3 years old, Mark was 5 years old, and Joe was 6 years old. The child care center primarily served parents of lower middle to middle class status. Other demographic data were not available in the records of these children.

### Measures

Behavior and environmental conditions were recorded as occurrences (events) on a continuous schedule, using an observational checklist of antecedents-behavior-consequences (ABC). This type of ecobehavioral assessment, which includes the analytical method of conditional/unconditional probabilities, is a means of measuring the moment to moment effects of situational events on student behavior (Kamps et al., 1991).

The number of observational sessions was 12 for Anthony, 9 for Mark, and 8 for Joe. Session length ranged from 11 to 30 min., with the mean length of 24 min. Session length depended on environmental conditions (e.g., rain or excessive heat) or individual child circumstances (e.g., a child given a time-out, a bathroom break).

#### *Antecedent Setting Conditions*

All preschoolers were observed outside on the playground, with a consistent number and type of toys and equipment available (i.e., climbing wall, slide, monkey bar, sandbox, 3 large tires). The playground dimensions were approximately 30 m by 17 m. The playground also included a large swingset area (10 m by 7 m), a large sandbox (14 m by 7 m), and a small sandbox (4 m by 4 m).

Antecedent categories coded in this general setting included Play Arrangement and Type of Play. In Play Arrangement, participants were coded as either (a) playing alone or (b) with one or more children and/or teachers. In Type of Play, participants could be coded as (1) Engaged in Social Play (physical and nonphysical interactive play with at least one other child, such as taking turns, walking and talking, playing a game, swinging together, digging in the sand, physical rough play) or (2) Seeking and Interrupting Activity. Seeking and Interrupting Activity was defined as the target child playing alone and then attempting to enter a playgroup with immediate rejection within the first 10-s interval, or as an ongoing activity that was interrupted or blocked by another child, who he wasn't playing with at that time. Blocking/interrupting could include a child taking a bike or toy

away from the target child, attempting to play with that child while the target child was playing with someone else, or coming over to the target child's group and simply asking to play.

### *Behavior and Observation Procedures*

Physical aggression was defined as behavior that would typically hurt another child (e.g., slapping, scratching, biting, punching, kicking, pushing or pulling). Verbal aggression included yelling, screaming, calling another person names, or making mean statements (e.g., "I hate you").

One of two trained researchers observed the participants outdoors, as they were engaged in free play activities. At the beginning of each session, the observer stood approximately 2 to 3 m away from the target child and activated a 10-s interval signal tape. The observer avoided eye contact and appeared busy. If any child approached the observer and initiated a conversation, the observer pleasantly stated that "she had work to do and could not talk." Once aggression had been observed and recorded, at least one 10-s interval had to pass with no occurrence of aggression before any type of aggression could be recorded again. This was to prevent one ongoing aggressive episode from skewing the data. The children were observed at approximately the same morning time each day, five minutes after freeplay began. Only one child was observed per day, with order of participant observation randomly determined.

### *Consequences*

Consequences were recorded on an occurrence basis only, in the immediate 10-sec interval after occurrence, and included peer or teacher type of response (negative, positive, or no response) to the physical or verbal aggression. Negative responses included verbal or physical retaliation, punishment, or verbal criticism or correction. Positive responses included positive attention or positive redirection. 'No response' would be coded if the aggressive behavior was ignored.

### *Interrater Reliability*

Data were collected for approximately 25% of the sessions for the participants. Reliability was calculated using the mean percent of agreements method, which involves calculating the number of observer agreements and dividing by the number of agreements and disagreements for each category (Kamps et al., 1991). Mean reliability percentages for participants were 97% for overall interrater reliability, 74% for occurrence reliability, and 95% for nonoccurrence reliability.

## RESULTS

The method of conditional probability (Kamps et al., 1991) was used to determine which antecedent play categories were associated with high occurrences of aggression. The first analysis involved computing a baserate for aggression for each participant. The baserate is the unconditional probability that aggression will occur in any session interval. It is calculated as the total number of aggressive incidents divided by the total number of possible intervals observed for each participant. In this study, conditional probabilities were also calculated to determine the percentage of aggressive responses following a specific antecedent play category (i.e., Engaged in Social Play, Seeking and Interrupted Activity). For example, if there were 100 instances of the antecedent Engaged in Social Play and aggression occurred 10 times within this setting then the conditional probability for aggression occurring within Social Play would be 10%. (Conditional and unconditional probabilities of 1.0 are the equivalent of the occurrence of a behavior 100% of the time.) Conditional probabilities were compared to the unconditional probability (baserate) for each participant.

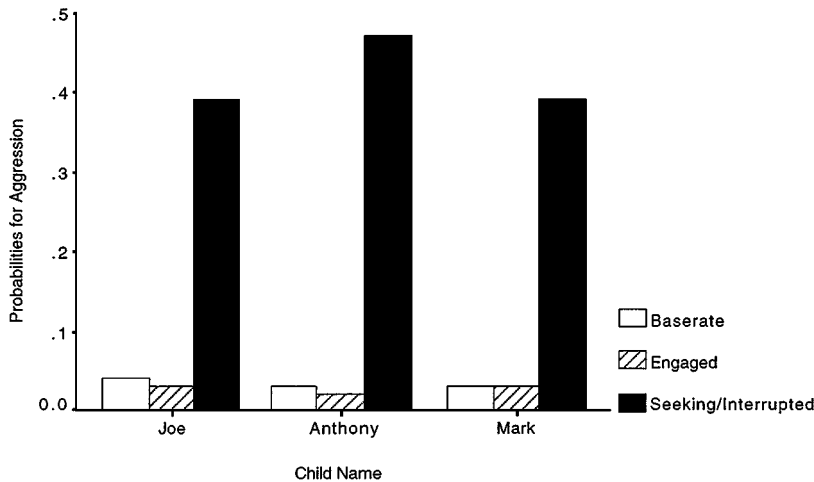
To determine the consequences for aggression, proportions were calculated by dividing the frequency of each consequent response (i.e., ignore, peer positive, peer negative, teacher positive, or teacher negative) by the total number of responses for that participant.

### Antecedent Setting Conditions for Aggression

Figure 1 shows the unconditional probabilities for aggression (baserates) and the conditional probabilities given different antecedent play settings. The baserates of aggressive behavior for each participant were relatively low (Joe:  $M = .04$ ; Anthony:  $M = .03$ ; Mark:  $M = .03$ ). For the antecedent play setting Engaged in Social Play with at least one other child without interruption, all three preschoolers had conditional probabilities of aggression that were low (Joe:  $M = .03$ ; Anthony:  $M = .02$ ; Mark:  $M = .03$ ) and similar to their baserates for aggression. For the antecedent setting Seeking and Interrupted Activity, however, the highest conditional probabilities for aggression were documented for all three participants (Joe:  $M = .39$ ; Anthony:  $M = .47$ ; Mark:  $M = .39$ ).

### Frequency and Type of Aggressive Behavior

There were 114 aggressive instances observed. Joe had a total of 38 aggressive behaviors over 8 sessions, Anthony had 41 over 12 sessions, and Mark had 35 over 9 sessions. The mean number of aggressive occurrences per session was similar across participants (Joe:  $M = 4.75$ ; Anthony:  $M = 3.42$ ; Mark:  $M = 3.89$ ).



**Fig. 1.** Baserate (unconditional) probabilities and conditional probabilities for aggression given the antecedent play settings Engaged in Social Play or Seeking/Interrupted Activity.

For Anthony and Mark, the majority of their aggression was verbal in nature (Anthony: 58.54 %; Mark: 56.25%), whereas Joe’s aggression was mainly physical (89.00%).

**Consequences for Aggression**

Individual analyses of consequences to aggression indicated that, for all participants, the typical type of consequence received for preschoolers’ aggression was negative responses from peers (Joe: = 51.35%; Anthony: = 39.02%; Mark: = 59.38%). Negative responses from teachers had low frequencies for all participants (Joe: = 2.70%; Anthony: = 4.88%; Mark: = 6.25%).

Again, positive consequences were higher from peers (Joe: = 13.51%; Anthony: = 24.39%; Mark: = 6.25%) than from teachers (Joe: = 0%; Anthony: = 9.76%; Mark: = 0%). Preschoolers’ aggression was ignored (by teachers and peers combined) at similar percentages (Joe: = 32.43%; Anthony: = 21.95%; Mark: = 28.13%).

**DISCUSSION**

A main purpose of this study was to identify antecedent conditions that were followed by a high probability of aggression for three preschoolers, who were



teacher-rated hyperactive and aggressive. The main limitations of this study are (a) participants were from a small school-based sample, (b) a comparison group was not included, and (c) only boys were included. However, this detailed assessment of three preschoolers with hyperactivity and aggression did yield some significant findings. Further, the strengths of this study include control for the amount of time in setting, the use of conditional probabilities, and an assessment of consequent conditions for aggression in a playground setting.

Conditional probabilities indicated that the primary antecedent condition for aggressive behavior was Seeking and Interrupted Activity. The conditional probabilities also indicated that all three preschoolers had relatively low percentages of aggression (similar to their baserates) while Engaged in Social Play with at least one other child. These results extend prior research findings with preschoolers with disabilities that have documented (a) low baserates of aggression for children with hyperactivity (2% disruptive behavior in classroom settings, Zentall, 1980), and (b) that conflicts were more likely to occur when alone play was interrupted by another child (Lieber, 1994).

In this study it was also documented that peers on the playground were the primary agents who responded to aggressive incidents. The percentage of peer negative responses received for aggressive behavior was over three times more for male preschoolers with hyperactivity during outdoor play (i.e., 39.02%, 51.35%, 59.38%) than has been documented in past research with comparison preschoolers during indoor play (i.e., 10%; Fagot, 1984). Preschoolers with hyperactivity and aggression appeared to receive more negative responses and fewer positive responses (i.e., 6.25%, 13.51%, 34.15%) for their aggression from peers on a ratio of about 3 negative for every 1 positive. Previous research in indoor settings documented 1.5 negative for every 1 positive for average preschool children (Fagot, 1984). Without further research, it is unknown whether the more frequent negative responses in this study can be attributed to indoor versus outdoor setting or to the type of population studied.

Percentages of teachers' positive (i.e., 0%, 0%, 9.76%) or negative responses (i.e., 2.70%, 4.88%, 6.25%) to preschoolers' aggression were lower than in past research with comparison male preschoolers (40% for positive responses, 15% for negative responses, Fagot, 1984). Again we might expect lower rates of teacher consequences in outdoor play contexts. Overall, these findings indicate that peers were probably contributing to the maintenance of aggression in preschoolers in our sample. Even though peer responses were primarily negative, they probably reinforced the aggression of these children with H/A. That is, related work with elementary aged boys has found that aggressive responses or loud retaliation increased the negative/aggressive behavior of boys with Attention Deficit Hyperactivity Disorder but did not increase such behavior in boys without disabilities (Meyer & Zentall, 1995; Rosen, O'Leary, Joyce, Conway, & Pfiffner, 1984).

## Implications

There are two main implications of these findings for further research and for practice. First, the question remains as to why preschoolers with H/A respond aggressively in situations where they are trying to enter a social setting (seeking activity) or when someone interrupts their ongoing activity. From the research on older children with Attention Deficit/Hyperactivity Disorder there are at least three possible reasons for a higher probability of aggression following interrupted or seeking activity contexts. First, it may be that when activity involvement is threatened or directly denied, the students' frustration may lead to aggression. Children with AD/HD have more difficulty regulating their emotions and have intense responses to frustration (Maedgen & Carlson, 2000). In young children this intense response may be aggression whereas older children may use less overt aggression but still express frustration through negative affect (i.e., grimacing and frowning; Maedgen & Carlson, 2000).

Second, children with hyperactivity and aggression seem to have a strong preference for stimulation seeking play. If children want to have fun but cannot enter into a seemingly fun activity or have an activity interrupted then this may trigger an aggressive response. Research has documented that children with ADHD who were highly aggressive reported more sensation seeking social goals (e.g., having fun even if you have to break rules) than children with ADHD who were not highly aggressive and comparisons. Finally, young children with hyperactivity and aggression may have a bias toward using aggressive solutions for conflict. Research has found that older children with hyperactivity and aggression have clear social processing differences and more hostile attributions regarding others' intentions (Bloomquist, August, Cohen, Doyle, & Everhart, 1997; Milich & Dodge, 1984). However, according to Hartup, younger children with hyperactivity are less likely than older children to process information related to personal intent (as cited in Atkins & Stoff, 1993). Clearly, determining possible child factors that contribute to this context for aggression for preschoolers with hyperactivity is an area for further research.

The implications of these findings for practice directly relate to the need for social skills instruction for preschoolers with hyperactivity and aggression. Specific social skills interventions need to begin as soon as problematic behavior is manifested in children (Feil, Severson, & Walker, 1998). Our study indicates that preschoolers with hyperactivity and aggression have problems when they are denied entry into groups and when peers interrupt their play. Therefore, play entry contexts and transitions are important to assess and instruction should begin in problem areas. Children with hyperactivity and aggression may need to be directly instructed in the variety of active roles available with respect to an activity or an object. Children with hyperactivity and aggression may also need a teacher or a

peer buddy to assist them in entering groups and/or handling their anger when they are interrupted in an activity.

Second, according to this research, peers were giving attention to children as a consequence for aggression. The implication of this finding is that some kind of peer reaction to aggressive social behavior needs to be designated. Asking children to ignore aggressive behavior is unrealistic. It may be more reasonable to teach peers to respond with disapproval in low tones or with nonemotional reactions (e.g., by walking away) (Meyer & Zentall, 1995).

## REFERENCES

- Alessandri, S. M. (1992). Attention, play, and social behavior in ADHD preschoolers. *Journal of Abnormal Child Psychology*, 20, 289–302.
- Arndorfer, R. E., Miltenberger, R. G., Woster, S. H., Rortvedt, A. K., & Gaffaney, T. (1994). Home-based descriptive and experimental analysis of problem behaviors in children. *Topics in Early Childhood Special Education*, 14, 64–87.
- Atkins, M. S., & Stoff, D. M. (1993). Instrumental and hostile aggression in childhood disruptive behavior disorders. *Journal of Abnormal Child Psychology*, 21, 165–178.
- Behar, L. B. (1977). The preschool behavior questionnaire. *Journal of Abnormal Child Psychology*, 5, 265–275.
- Campbell, S. B. (1985). Early identification and follow-up of parent-referred 'hyperactive' toddlers. In L. M. Bloomingdale (Ed.), *Attention deficit disorder: Identification, course and treatment rationale* (pp. 1–15). New York: Spectrum Publications, Inc.
- Campbell, S. B. (1997). Behavior problems in preschool children: Developmental and family issues. In T. H. Ollendick & R. J. Prinz (Eds.), *Advances in clinical child psychology: Vol. 19*. New York: Plenum Press 1–26.
- Campbell, S. B., March, C. L., Pierce, E. W., Ewing, L. J., & Szumowski, E. K. (1991). Hard-to-manage preschool boys: Family context and the stability of externalizing behavior. *Journal of Abnormal Child Psychology*, 19, 301–315.
- Dawe, H. C. (1934). An analysis of two hundred quarrels of preschool children. *Child Development*, 5, 139–157.
- Dodge, K. A., & Frame, C. L. (1982). Social cognitive biases and deficits in aggressive boys. *Child Development*, 53, 620–635.
- Fabes, R. A., & Eisenberg, N. (1992). Young children's coping with interpersonal anger. *Child Development*, 63, 116–128.
- Fagot, B. I. (1984). The consequences of problem behavior in toddler children. *Journal of Abnormal Child Psychology*, 12, 385–396.
- Feil, E. G., Severson, H. H., & Walker, H. M. (1998). Screening for emotional and behavioral delays: The early screening project. *Journal of Early Intervention*, 21, 252–266.
- Kamps, D. M., Leonard, B. R., Dugan, E. P., Boland, B., & Greenwood, C. R. (1991). The use of eco-behavioral assessment to identify naturally occurring effective procedures in classrooms serving students with autism and other developmental disabilities. *Journal of Behavioral Education*, 1, 367–397.
- Kopp, C. B., Baker, B. L., & Brown, K. W. (1992). Social skills and their correlates: Preschoolers with developmental delays. *American Journal on Mental Retardation*, 96, 357–366.
- Lieber, J. (1994). Conflict and its resolution in preschoolers with and without disabilities. *Early Education and Development*, 5, 5–17.
- Maedgen, J. W., & Carlson, C. L. (2000). Social functioning and emotional regulation in the attention deficit hyperactivity disorder subtypes. *Journal of Clinical Child Psychology*, 29, 30–42.
- Mash, E. J., & Johnston, C. (1983). Parental perceptions of child behavior problems, parenting self-esteem, and mothers' reported stress in younger and older hyperactive and normal children. *Journal of Consulting and Clinical Psychology*, 51, 86–99.

- Melnick, S. H., & Hinshaw, S. P. (1996). What they want and what they get: The social goals of boys with ADHD and comparison boys. *Journal of Abnormal Child Psychology*, 24, 169–185.
- Meyer, M. J., & Zentall, S. S. (1995). Observations of loud behavioral consequences: Attention deficit hyperactivity disorder with and without aggression. *Behavior Therapy*, 36, 491–509.
- Moffitt, T. (1990). Juvenile delinquency and attention deficit disorder: Boys' developmental trajectories from age 3 to age 15. *Child Development*, 61, 893–910.
- Olson, S. L. (1992). Development of conduct problems and peer rejection in preschool children: A social systems analysis. *Journal of Abnormal Child Psychology*, 20, 327–350.
- Price, J. M., & Dodge, K. A. (1989). Reactive and proactive aggression in childhood: Relations to peer status and social context dimensions. *Journal of Abnormal Child Psychology*, 17, 455–471.
- Quay, H. (1986). Conduct disorders. In H. Quay & J. Werry (Eds.), *Psychopathological disorders of childhood* (pp. 35–72). New York: Wiley.
- Reid, J. (1993). Prevention of conduct disorder before and after school entry: Relating interventions to developmental findings. *Development and Psychopathology*, 5, 243–262.
- Rosen, L. A., O'Leary, S. G., Joyce, S. A., Conway, G., & Pfiffner, L. J. (1984). The importance of prudent negative consequences for maintaining the appropriate behavior of hyperactive children. *Journal of Abnormal Child Psychology*, 12, 581–604.
- Rutter, M. (1967). A children's behaviour questionnaire for completion by teachers: Preliminary findings. *Journal of Child Psychology and Psychiatry*, 8, 1–11.
- Smith, P. K., & Green, M. (1975). Aggressive behavior in English nurseries and play groups: Sex differences and response of adults. *Child Development*, 46, 211–214.
- Stormont, M. (2000). Early child risk factors for externalizing and internalizing behavior at a five year follow-forward assessment. *Journal of Early Intervention*, 23, 180–190.
- Stormont-Spurgin, M., & Zentall, S. S. (1995). Contributing factors in the manifestation of aggression in preschoolers with hyperactivity. *Journal of Child Psychology, Psychiatry, and Allied Disciplines*, 36, 491–509.
- Strayhorn, J. M., & Weidman, C. S. (1991). Follow-up one year after parent-child interacting training: Effects on behavior of preschool children. *Journal of the American Academy for Child and Adolescent Psychiatry*, 30, 138–143.
- Vitaro, F., Tremblay, R. E., Gagnon, C., & Biovin, M. (1992). Peer rejection from kindergarten to grade 2: Outcomes, correlates, and prediction. *Merrill-Palmer Quarterly*, 38, 382–400.
- Vitaro, F., Tremblay, R. E., Gagnon, C., & Pelletier, D. (1994). Predictive accuracy of behavioral and sociometric assessments of high-risk kindergarten children. *Journal of Clinical Child Psychology*, 23, 272–282.
- Zentall, S. S. (1980). Behavioral comparisons of hyperactive and normally active children in natural settings. *Journal of Abnormal Child Psychology*, 8, 93–109.