

# Tantrums and Anxiety in Early Childhood: A Pilot Study

**Gina Mireault**  
Johnson State College

**Jessica Trahan**  
Southern Illinois University

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## Abstract

Tantrums, or emotional reactions that are out of proportion to a situation, appear to be a common childhood phenomenon—yet have drawn little research attention. This pilot study describes tantrum precipitants; their frequency, intensity, and duration; and parental responses in a small community sample ( $N = 33$ ) of 3- to 5-year-olds. Tantrum intensity and duration were positively correlated with parent ratings of child anxiety/depression on the Achenbach Child Behavior Checklist. Further research is needed to replicate these findings and expand upon our understanding of the role of tantrums in social and emotional development, particularly with regard to age- and gender-based tantrum behavior. The role of anxiety in oppositional behavior may be significant for intervention and child-rearing practices.

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## Introduction

Tantrums, or emotional reactions that are out of proportion to a situation, appear to be universal to child development (Solter, 1992) and appear to be more than a caregiving hassle. Children who have a history of intense and frequent tantrums are at risk for developing more serious emotional and behavioral disorders in later childhood (Kann & Hanna, 2000; Needlman, Stevenson, & Zuckerman, 1991; Sanson & Prior, 1999). As a child discovers her autonomy, most parents must manage and cope with tantrums, the intensity and frequency of which can potentially create a lasting and negative behavioral dynamic (Stormshak, Bierman, McMahon, & Lengua, 2000). For these reasons, tantrums are important childhood phenomena that appear to warrant more empirical attention than they have been given to date (Bath, 1994; Needlman et al., 1991). Yet, most of the research on tantrums has been conducted with clinical samples of older children whose tantrums are developmentally atypical.

Tantrums represent a temporary emotional crisis for the young child. Bath (1994) defined tantrums as a child's response when he or she is unable to regulate his or her emotional impulses, resulting in an apparent loss of self-control and a disregard for previously accepted behavioral norms to a point that appears out of proportion to the situation. Tantrums have long been considered to originate from young children's objective or verbal frustration (Bhatia, Dhar, Singhal, Nigam, Malik, & Mullick, 1990; Einon & Potegal, 1994) and anger (Potegal & Davidson, 2003), in addition to an immature frontal cortex, which helps regulate emotional states (Greenberg & Snell, 1997).

Some researchers (e.g., Bath, 1994) have noted that tantrums may be triggered by factors other than anger or frustration, pointing to general distress as a tantrum trigger (Potegal & Davidson, 2003; Proffer, 1995). For example, parents and child care experts have reportedly observed that children are more vulnerable to tantrums when they are fatigued, overstimulated, distressed, or when there is a deviation from the child's normal routine (Einon & Potegal, 1994; Potegal & Davidson, 1997; Solter, 1992). These latter two scenarios suggest that general confusion or distress that gives rise to anxiety may also contribute to the emotional over-reaction of a tantrum.

Consistent with the hypothesis that tantrums may be triggered by anxiety, research among older children (e.g., 5 to 17 years) diagnosed with Oppositional Defiant Disorder (ODD), of which tantrums are a core symptom, has shown that 25% of children carry a dual diagnosis for mood or anxiety disorders (Speltz, McClellan, DeKlyen, & Jones, 1999). Kashani, Deuser, and Reid (1991) also confirmed the link between aggression and anxiety in their study of 210 children

ages 8, 12, and 17 years. They found that children who were the most verbally and physically aggressive reported significantly more anxiety, and the researchers proposed that aggression may be a coping strategy for individuals who are in an anxious state. Leung and Fagan (1991) described tantrums as the early childhood version of ODD and pointed to both anger and fear along with family and parenting variables as contributing to tantrums.

It is important to note that the precise relationship between anxiety and tantrums is still unclear because the role of anxiety in this behavior is just beginning to be explored. Spielberger (1966) proposed a two-factor model of anxiety that may be relevant to tantrum behavior. According to Spielberger, state-anxiety is situation specific, whereas trait-anxiety is personality or temperament based and potentially heritable (Lau, Eley, & Stevenson, 2006). This two-factor model has been validated for young children (Hedl & Papay, 1982) and may help explain why a child who responds with a tantrum some of the time is able to refrain from a tantrum at other times (i.e., state-anxiety), and why other children appear tantrum-prone regardless of the circumstances (i.e., trait-anxiety). If preliminary studies can discover an association between tantrums and anxiety in general, then further research might explore whether additional variance in tantrum behavior can be explained by state-anxiety or trait-anxiety specifically. An added possibility is that anxiety results from some tantrums (i.e., from the child's distress over losing self-control or from a parent's reaction to the tantrum).

In either case, if anxiety is correlated with tantrums among younger children, then implications arise as to how caregivers should assess and intervene with tantrums. Currently, child care experts suggest that caregivers employ one of two techniques when a tantrum is in progress: (1) ignore the child or (2) isolate him or her (i.e., "time-out"; Bhatia et al., 1990; Carr & Newsom, 1985). Yet, 20% to 54% of parents report responding to tantrums with criticism, physical restraint, and harsh physical discipline (Bhatia et al., 1990; Einon & Potegal, 1994). If anxiety is a precursor to some tantrums, then these interventions are not only inappropriate, but they may potentially heighten the child's anxiety and contribute to a cycle of tantrum behavior (i.e., increasing both the child's anxiety and tantrums). If anxiety plays a central role in tantrums, advice for caregivers may change or become more urgent. For example, if caregivers know that a tantrum is a child's version of panic, they may be less likely to try managing tantrums with physical discipline, restraint, criticism, or isolation, and they may be more likely to try calming the child and use anxiety-reducing techniques.

The purpose of the present study was to provide a preliminary description of tantrums, their precipitants, and parental responses. It was hypothesized that tantrum frequency, intensity, and duration would be associated with parent-reported child anxiety. In addition, parental anger, frustration, and rejection in response to tantrums were expected to be related to all three tantrum dimensions (i.e., frequency, intensity, duration). Parents of 33 children between the ages of 3 and 5 years completed questionnaires regarding their children's tantrum behavior and symptoms of anxiety.

## **Method**

### **Procedure**

Permission for a study on "emotions and tantrums" was initially obtained from the directors of three preschools in two neighboring counties. Parents were then notified of the study via a letter placed in their child's school cubby. All parents with children between the ages of 3 and 5 were invited to participate, although only one child per family was eligible. Parents who were interested in participating obtained a numbered questionnaire packet (including \$5.00 advance compensation) from the preschool teacher. Researchers supplied a bin for on-site collection of questionnaires. Reminder notices were placed in cubbies of participants after two weeks to insure a high return rate (83% of the 40 parents contacted). No further compensation was

offered after the study's completion.

## Participants

Questionnaire data were collected from parents of 33 children ( $M = 3.8$  years,  $SD = .84$ ) recruited from three Vermont preschools. The sample was composed of 15 males and 18 females. On average, children attended preschool 29.3 hours per week ( $SD = 13.4$ ), and most were first-born ( $n = 11$ ) or second-born children ( $n = 14$ ), with the majority ( $n = 19$ ) having only one sibling (see Table 1).

**Table 1**  
Participant Demographic Characteristics

Characteristic	$n^*$ (%)	Mean ( $SD$ )
<b>Children</b>		
Males	15 (45)	
Females	18 (55)	
First-borns	11 (33)	
Second-borns	14 (42)	
Age		3.8 (0.84)
Weekly preschool hours		29.3 (13.4)
<b>Parents</b>		
Married	29 (88)	
Maternal age		35.5 (4.4)
Paternal age		37.4 (5.1)
Maternal years of education		15.9 (1.9)
Paternal years of education		15.8 (2.2)

\* $N = 33$ .

Most parents were married ( $n = 29$ ), with a mean educational level of 15.9 years for mothers ( $SD = 1.9$ ) and 15.8 years for fathers ( $SD = 2.2$ ). Their combined average income was \$75,000 (range = \$168,000,  $SD = 36.4$ ). On average, mothers were 35.5 years old ( $SD = 4.4$ ), and fathers were 37.4 years ( $SD = 5.1$ ). Most data were supplied by mothers ( $n = 32$ ) (see Table 1).

## Measures

*Achenbach Child Behavior Checklist (CBCL)*. The CBCL (Achenbach & Rescorla, 2000) for ages 1.5 to 5 years is a 100-item, empirically based questionnaire that asks parents to indicate the degree to which behaviors have been exhibited in a child over the past 6 months (Achenbach, 1993). The frequency of each behavior is rated on a scale of 0 to 2, with raw scores converted to  $T$ -scores. The measure is normed for age and sex. Norms are based on nonclinical samples. Anxiety was measured using the anxious/depressed subscale for which a  $T$ -score of 65 (95th percentile) represents the clinical range. The CBCL has been repeatedly shown to have sound internal consistency and test-retest reliability with correlations ranging from .81 to .95 (Achenbach, 1993).

*Tantrum Questionnaire*. A 25-item, descriptive, face-valid questionnaire regarding tantrum behavior, precipitants, and parental responses was devised for this study. Directions included the following statement: "Tantrums are a normal and universal childhood phenomenon about which relatively little is known. Tantrums are neither good nor bad; they may promote both

negative (e.g., defiance) and positive (e.g., assertiveness) developmental opportunities.”

The questionnaire probed three aspects of tantrum behavior (frequency, duration, and intensity) based on the existing descriptive literature to improve content validity (i.e., Potegal & Davidson, 2003; Potegal, Kosorok, & Davidson, 2003) and three aspects of parental emotional responses to tantrums (anger, frustration, and rejection) also derived from the literature (i.e., Bhatia et al., 1990; Einon & Potegal, 1994). For each of those six dimensions, parents rated their child’s tantrums in general, their child’s most recent tantrum, as well as their response in general and their response to the child’s most recent tantrum. For example, parents indicated the intensity of their child’s tantrums in general, as well as the intensity of the child’s most recent tantrum.

A cumulative score for tantrum frequency was calculated based on two items: one was a 9-point Likert scale comparing the child’s tantrum frequency to other children his/her age, and the other asked parents how often their child had tantrums (from 2 or more times per day to less than every other month, equivalent to an 8-point scale). A cumulative score for tantrum intensity was calculated based on four items. For example, “Compared to other children his or her age, rate the intensity of your child’s tantrums on the following scale: 1 = very mild to 9 = very intense, with 5 being average,” and “How intense, on average, are your child’s tantrums?” (1 = barely noticeable, 3 = noticeable/distracting, and 5 = extremely noticeable/can’t be ignored/disturbing). These same two questions were posed for the child’s most recent tantrum. Tantrum duration was calculated based on two items that specifically asked parents to estimate how long (in minutes) their child’s tantrums are on average and how long their child’s most recent tantrum lasted. These time estimates were averaged to calculate tantrum duration scores.

Parent anger, frustration, and rejection in response to tantrums were calculated based on two 9-point Likert items each; for example, “How angry on average do you become in response to your child’s tantrums?” and “How angry did you become in response to your child’s most recent tantrum?” (1 = not at all angry, 5 = neutral, 9 = very angry). Cumulative scores resulted for each of these parental responses.

*Analyses.* Descriptive statistics including frequencies, means, ranges, and standard deviations were computed for tantrum frequency, intensity, and duration (in minutes), and for parental emotional responses to tantrums (i.e., anger, frustration, rejection). Based on parents’ rank-order data, the most common tantrum precipitants (e.g., overtired, overstimulated, etc.) were computed, as well as parents’ most common behavioral responses to tantrums (e.g., time-out, physical punishment, try to calm the child). Finally, Pearson Product Moment correlations were computed to assess the association between parent-reported child anxiety/depression and tantrum dimensions (i.e., intensity, frequency, and duration) and parental emotional responses to tantrums (i.e., anger, frustration, rejection).

## Results

Most parents ( $n = 26$ ; 79%) reported the frequency of tantrums as occurring often, with roughly half of those ( $n = 12$ ) reporting daily tantrums, and half ( $n = 14$ ) reporting weekly tantrums. The remainder of the sample ( $n = 7$ ) reported tantrum frequency as less common, ranging from monthly to less than monthly to never ( $n = 1$ ). A cumulative score for tantrum frequency was calculated using two Likert items from the tantrum questionnaire. Scores ranged from 2 to 15 (possible range = 16), with an average score of 8.5 ( $SD = 3.6$ ), translating to “about once every few days.”

Of the 32 parents reporting tantrums, half ( $n = 16$ ) rated their child’s tantrum intensity as “noticeable or distracting” (equivalent to a 3 on a 5-point Likert scale). Almost a third ( $n = 10$ ) rated their child’s tantrums as distressing (Likert value of 4) or disturbing (Likert value of 5). The remaining parents ( $n = 6$ ) rated their child’s tantrums as only “somewhat noticeable.” A cumulative score for tantrum intensity was derived from 4 Likert items (total possible range = 37) with an average score of 15.8 ( $SD = 5.3$ , actual range = 28).

Tantrum duration was calculated from two items that asked parents to estimate the duration (in minutes) of their child's tantrums in general and of their child's most recent tantrum. Duration ranged from 2 to 75 minutes ( $M = 16.1$ ,  $SD = 14.8$ ).

Finally, parents were asked to rank order their behavioral responses and to rate their emotional responses (i.e., anger, frustration, and rejection) to their child's most recent tantrum, and his/her tantrums in general. Parental behavioral responses primarily congregated in three areas: (1) try to calm the child (59%), (2) issue time-out (37%), and (3) try to instruct the child in how to get calm (31%). Parents ranked "use physical discipline" as their least likely response to a tantrum (66%). There were no differences in observed frequencies of parental behavioral responses to sons' vs. daughters' tantrums. Cumulative scores were computed for each parental emotional response, with each score derived from two 9-point Likert items (possible range of 2 to 18). Parent anger ranged from 3 to 17 ( $M = 7.8$ ,  $SD = 3.4$ ), frustration ranged from 2 to 16 ( $M = 9.5$ ,  $SD = 3.4$ ), and rejection ranged from 3 to 14 ( $M = 8.8$ ,  $SD = 3.0$ ).

Parents were asked to rank order the most common precipitants of their child's tantrums in general and most recent tantrum, and they were asked to provide a brief description of the events of the latter. For each precipitant, the number of times it was ranked as one of the top two precipitants was calculated. "Denial of a request/not getting his or her way" was most likely to be ranked among the top two precipitants (66%), followed by "overtired" (62%), and "conflicts with others" (e.g., a sibling; 42%). Interestingly, parents rated "worry/fear/nervousness" as the least likely tantrum precipitant, ranking it among the top two precipitants only 1% of the time (out of all rankings).

Parent ratings of their children's anxious and depressed symptoms on the CBCL, using  $T$ -scores, ranged from 50 to 69 ( $M = 54.1$ ,  $SD = 4.8$ ). As predicted, significant Pearson Product Moment correlations were revealed between parent-reported child anxiety/depression and tantrum intensity,  $r(32) = .37$ ,  $p < .05$ , and tantrum duration,  $r(32) = .52$ ,  $p < .01$ . However, and contrary to the hypothesis, Pearson correlations were not found between child anxiety/depression and tantrum frequency, nor between child anxiety/depression and angry, frustrated, or rejecting parental responses to tantrums.

## Discussion

This study was a preliminary descriptive investigation into childhood tantrums in a small community sample of preschool children. The objective was to obtain pilot data from parents regarding the frequency, intensity, and duration of tantrums; their precipitants; and parental responses. Another objective was to explore the relationship between tantrum variables and child anxiety/depression.

The finding that anxiety and tantrums were related in this sample supports prior research demonstrating the association between anxiety and oppositional behavior among older children (Kashani et al., 1991; Speltz et al., 1999) and suggests that this relationship may begin at an early age. In other words, the relationship between anxiety and oppositional behavior does not appear to be a developmental artifact and may begin when children first start manifesting oppositional behavior. This relationship also suggests that early intervention may be key to preventing the escalation of this trend among older children where tantrums may signal referral for special education services.

If youngsters can manifest anxiety in the externalizing behavior of a tantrum, then perhaps one should reconsider the intervention techniques that are often recommended to parents and early childhood educators (e.g., time-out, isolation), some of which may serve to increase anxiety. Interestingly, parents in this study ranked "worry/fear/nervousness" as the least likely tantrum precipitant, which suggests that parents and caregivers may first have to acknowledge a tantrum as a potential anxiety response in order to intervene effectively. Solter (1992) has reframed childhood tantrums as a normal, healthy release of stress and frustration, as opposed to

misbehavior. She recommends that caregivers respond by maintaining proximity to the child, instead of isolating him or her, and reflecting back the child's feelings and experience in order to provide words for and meaning to the child's emotions, which over time should help children express their emotions verbally (e.g., "You have had a hard day." "You are disappointed."). This type of response can help prevent the child from feeling isolated, abandoned, or punished, and thus help decrease anxiety, even if the child must be removed from the situation (e.g., grocery store, classroom).

Solter (1992) also suggests that caregivers reassure the child during the tantrum and allow the child to cry instead of requiring him or her to talk. Caregivers should use a quiet voice and presence to reduce the child's anxiety over the circumstances that provoked the tantrum or the tantrum itself, and to communicate the message that the child has the potential to regain control. Since relaxation counters anxiety, any measure that caregivers can take to increase relaxation should be employed (e.g., removal to a quiet setting, distraction, slow talk). Although tantrums present a temporary crisis and a caregiving hassle, Solter (1992) notes that they are also an important opportunity for the child to discover the caregiver's calm acceptance and empathy, and the child's own capacity for recovery from emotional crisis.

Although the findings reveal some associations between tantrum intensity and duration and child anxiety/depression, these data must be interpreted cautiously due to the nature and size of the sample, the concurrent reporting on the variables by parents, and the debut use of a face-valid measure. Small samples generally cannot represent the broader population and increase the chances of Type I error. In addition, parents were older and highly educated, and these characteristics further limit the generalizability of these findings to more typical populations. As is the case with many studies of early childhood, most informants were working mothers, although the dual-worker status of the parents in this sample is characteristic of American families with children under age 6.

This study did not find associations between parental responses to tantrums and child anxiety/depression. However, other studies have linked parenting variables like warmth and attachment to emotional regulation, if not tantrums specifically, and to child variables like temperament and emotional reactivity (Calkins, Smith, Gill, & Johnson, 1998; Dennis, 2006; Garner, 1995). Emotional regulation is implicated in tantrum behavior and develops with brain maturation (Greenberg & Snell, 1997) and with opportunities for observation and practice of coping skills (Ashiabi, 2000). In addition, children's understanding of the physical and social world increases during early childhood, making the world more predictable and less confusing and anxiety provoking; this change, in addition to children's social and linguistic maturation, also decreases the likelihood of tantrums (Proffer, 1995; Solter, 1992). The role of these variables in the maintenance of tantrum behavior into middle childhood for some children awaits further investigation.

Other questions arise, including the mechanism through which tantrums and anxiety are linked. For example, it is possible that children with high levels of trait-anxiety are prone to tantrums, while other children's tantrums may be motivated by situational variables that raise state-anxiety (Hedl & Papay, 1982; Spielberger, 1966). In addition, given the wealth of research on the socialization pressures on young males to inhibit expressions of anxiety and fear (e.g., Brannon, 2005; Brannon, 1976; Plant, Hyde, Keltner, & Devine, 2000), further research should investigate whether tantrums differ by sex or whether tantrums are interpreted and responded to differently for boys and girls, and by fathers and mothers.

While awaiting replication, these findings suggest that anxiety is one of many variables that are related to tantrums, and these findings imply that parents and caregivers should consider that a tantrum might reflect a child's underlying anxiety, confusion, or stress, in addition to or instead of willful opposition. Further research is needed to clarify the results of this pilot effort and to dissect this complex but common childhood behavior.

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## Author Information

Gina Mireault is a professor of psychology at Johnson State College, Johnson, Vermont. Her research has focused on emotional development in children, particularly childhood bereavement following parental death. This investigation of tantrums and anxiety is a pilot effort in a larger cross-sectional study involving children ages 9 through 14. She is also beginning to explore the development of humor in infancy.

Gina Mireault  
210 McClelland Hall  
Behavioral Sciences Department  
Johnson State College  
Johnson, VT 05656  
Telephone: 802-635-1427  
Fax: 802-635-1465  
Email: [Gina.Mireault@jsc.vsc.edu](mailto:Gina.Mireault@jsc.vsc.edu)

Jessica Trahan is a graduate student at Southern Illinois University Carbondale. In August 2007, she will receive her Master of Science degree in Behavior Analysis and Therapy. Her main area of focus while in graduate school was schedule performance and vocational preference in students with developmental disabilities. In addition, she has served as a behavioral therapist to several disabled populations within southern Illinois but most prominently with those diagnosed with Autism Spectrum Disorder. Jessica originates from Derby Line, Vermont, and in May 2005 received her Bachelor of Arts degree from Johnson State College in Johnson, Vermont.

Jessica Trahan  
Email: [Jessica\\_Trahan@yahoo.com](mailto:Jessica_Trahan@yahoo.com)