Mealtime Dynamics in Child Feeding Disorder: The Role of Child Temperament, Parental Sense of Competence, and Paternal Involvement

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Objective We examined how child temperament, parental sense of competence, and paternal involvement predicted observed mealtime dynamics. Method 97 families of children with feeding disorder (FD), sleep problems (SP), and typically developing (TD) children participated in the study. Data were collected during home visits, where mother–child and father–child mealtime dynamics were videotaped and parents completed questionnaires. Results More mother–child and father–child conflict and control was observed during mealtimes in the FD than SP and TD groups. Among the FD group, maternal sense of competence was negatively correlated with mother–child conflict and control, and child temperament was linked to father–child conflict and control, but only for families in which fathers were highly involved. These correlations were not significant among the SP and TD groups. Conclusion Different patterns of results were seen for mothers and fathers and among the FD and control groups. Clinical implications for the treatment of FD are discussed.

Key words children; eating and feeding disorders; fatherhood; parenting.

Approximately 25% of normally developing children experience feeding problems, with 1–2% having severe feeding difficulties associated with poor weight gain (Chatoor & Macaoay, 2008). Child feeding disorders (FDs) are diagnosed when children persistently fail to meet appropriate nutritional and/or energy needs, associated with failure to achieve expected weight gain or faltering growth in children (DSM-5, American Psychiatric Association, 2013). FDs often result in failure to thrive (i.e., child’s weight below the fifth growth percentile or weight loss crossing two major growth percentiles; Kededy & Budd, 1998). Severe FDs are associated with poor consequences, such as susceptibility to chronic illness, growth failure, delay in motor and social development, deficits in cognitive development, and later eating disorders (Chatoor & Macaoay, 2008; Chatoor et al., 1997).

Observational studies support the association between FD and mother–infant relationships (Atzaba-Poria et al., 2010; Chatoor et al., 1997; Sanders, Patel, Le Grice, & Shepherd, 1993). For example, mothers of children with FD exhibit greater negative affect, intrusiveness, and struggle for control, and are less inclined to physically touch their children in comparison with mothers of typically developing (TD) children (Feldman, Keren, Gross-Rozval, & Tyano, 2004; Stein, Woolley, Cooper, & Fairburn, 1994). Furthermore, researchers report that during mealtime interactions, mothers of children with FD show more difficulties in facilitating children’s attempts to eat and explore food, are more intrusive, and engage in constant struggles for control. The children also show more food refusal, difficulties in self-regulation during meals, noncompliance, poor nutritional intake, and more difficult temperament in

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comparison with the control groups, and the dyads are characterized by more conflict and less collaboration during the mealtime interaction (Ammaniti, Ambruzzi, Lucarelli, Cimino, & D’Olimpio, 2004; Sanders et al., 1993).

Two limitations to past research merit consideration. First, most past research has examined mean-level group differences between children with FD and controls, and little attention has been given to factors that could be related to child and parent behaviors during mealtime interactions. Examining how child and parent characteristics relate to behavior during mealtime interaction is necessary to enhance the understanding of FD. Second, previous research has focused on the mother–child dyad, without any exploration of the role of the father (cf. Atzaba-Poria et al., 2010; Gueron-Sela, Atzaba-Poria, Barak-Levy, Meiri, & Yerushalmi, 2011). To address these limitations, we used a transactional perspective (Sameroff, 2010), proposing that a child’s condition can be seen as the result of a series of bidirectional interactions between the parent and child. Specifically, child temperament and parental sense of competence were investigated among both mothers and fathers.

Previous research indicates that children with FD have more difficult temperaments (Ammaniti et al., 2004; Davies et al., 2006) than children without feeding difficulties. In addition, maternal feelings of parenting inadequacy have been related to children’s food intake in families with children with FD (Chatoo, Ganiban, Hirsch, Borman-Spurrell, & Mrazek, 2000). Ammaniti et al. (2004) proposed that maternal sense of competence while feeding the child was the main variable explaining maternal dysfunctional feeding interactions with children with FD (Ammaniti et al., 2004). As for research with fathers, the limited available research suggests that fathers play an important role in child feeding (Blissett, Meyer, & Haycraft, 2006). We recently reported that in comparison with families with TD children, father–child interactions were less positive in families of children with FD. Specifically, fathers of children with FD were less sensitive and more intrusive, and their children were less responsive to their fathers during both play and feeding interactions (Atzaba-Poria et al., 2010). Furthermore, mothers of children with disabilities (i.e., autism, Down syndrome, and conduct disorder) were at greater risk of feeling lack of competence in parenting, as compared with mothers of normally developing children. As for fathers, it was their reports on child’s characteristics (rather than their own characteristics) that clearly distinguished between fathers of children with and without disabilities (Noh, Dumas, Wolf, & Fisman, 1989). It should be noted, however, that paternal involvement has been found to play a central role in father–child interaction in general, as well as in families of children with FD (Pleck, 2010). We found that fathers showed lower levels of sensitivity than mothers, but only in families where fathers were less involved. This finding suggests that both mothers and fathers who frequently engage in feeding interactions with their children may share similar patterns that may differ from fathers who are less involved in child rearing.

The Current Study

The current study examined maternal, paternal, and child correlates of FD, using observations of mother–child and father–child interactions during mealtimes at home. Observations of such interactions can be particularly revealing, as parents may not be aware of their own contribution to mealtime dynamics. Furthermore, as parental stress in families with young children with any developmental difficulties may be elevated and expressed in the context of the child’s eating (Gueron-Sela, Atzaba-Poria, Meiri, & Yerushalmi, 2011; Singer, Song, Hill, & Jaffe, 1990), we compared the FD group with a group of families with children experiencing sleeping problems (SP), in addition to a group of families with TD children. These comparisons provided a test of whether the results found for the FD group uniquely characterize these families, or whether there are commonalities among families with children with either feeding or sleeping problems. Feeding and sleep problems are similar in some ways—they are both prevalent in early childhood (Chatoo & Macaoay, 2008; Sadeh & Anders, 1993), and can be experienced by children with no medical reason for these difficulties (Sadeh, Tiotzky, & Scher, 2010). The two problems are perceived as transactional in nature (Ammaniti et al., 2004; Sadeh & Anders, 1993), involving parent–child conflict and struggle for control (Chatoo et al., 1997; Sadeh et al., 2010). Thus, this comparison group provides a conservative test for unique transactional features of families of children with FD. Alongside maternal and paternal questionnaires, observations were used to test the following hypotheses:

1. Mother–child and father–child dyadic conflict and control during mealtime would be higher in families with children with FD than in the control groups.

2. Among the FD group, lower levels of maternal sense of competence would be correlated with more mother–child dyadic conflict and control during mealtime, whereas more difficult child temperament would be related to elevated levels of
dyadic conflict and control in father–child mealtime dynamics.
3. Among the FD group, the correlation between child temperament and father–child dyadic conflict and control will be moderated by paternal involvement. Specifically, we hypothesized that child difficult temperament would be linked to higher levels of dyadic conflict and control during father–child mealtime interactions, but only for the more involved fathers.

The hypothesized associations as well as the moderation effects were examined in an exploratory manner among the SP and TD groups.

Method
Sample
Ninety-seven 1–3-year-old children (M = 1.89, SD = 0.77, 56% girls) and their mothers and fathers participated in the study. The participants were two-parent Hebrew-speaking families residing in the southern region of Israel. The FD group (n = 32) was recruited from the pediatric day care unit and the infant psychiatric unit at a large medical center. The children were diagnosed with FD based on the Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood (DC:0-3R; Zero to Three: National Center for Clinical Infant Programs, 2005) and the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013), and weighed below the fifth percentile. The children had no developmental delays, and did not present with organic or medical conditions that could explain their failure to gain weight.

The SP control group (n = 30) included children having sleep problems and no feeding difficulties. Recruitment was conducted using a screening questionnaire distributed through well-baby clinics and mainstream daycare centers. The screening questionnaire was based on Richman’s (1981) criteria of severe sleep problems, defined as settling or waking problems, which occurred five or more nights per week, in addition to one or more of the following child behaviors: (a) taking >30 min to settle, (b) waking three or more times per night, (c) staying awake for >20 min during the night (Richman, 1981).

The TD control group (n = 35) was recruited from mainstream daycare centers in the southern region of Israel, and included 35 children with no evidence of feeding or sleep difficulties or any other developmental difficulties.

Screening for feeding problems in the control groups was conducted using the following questions: (1) Has your child had or currently have any feeding difficulties? (2) Are you worried about your child’s eating? (3) Are you worried about your child’s weight? Only parents who answered “no” to the three questions were eligible to participate in the control groups. Furthermore, only families who reported that their children did not wake at all during the night were eligible to participate in the TD group. Children in the control groups were matched to children in the FD group for age, gender, birth order, and parental education. Sixty percent of families having a child with FD and 65% of the control families agreed to participate in the study. Time constraints and unwillingness to be videotaped were the main reasons reported for refusal to participate.

Demographic information is presented in Table I. The majority of mothers and fathers were born in Israel. Mothers’ ages ranged from 21 to 42 years, and the fathers’ ages ranged from 23 to 48 years. There were one to five children per family, with most participating children being the first or second born. The sample was diverse in terms of parents’ years of education, with most mothers and fathers in the feeding and control groups having a high school education. No significant differences were found in the demographic variables between the FD group and the control groups (see Table I).

Procedure
The study received Helsinki review board approval, and all parents signed informed consent forms. Home visits were conducted by two researchers. During each 3-hr home visit, researchers interviewed one parent, while the other parent participated in two kinds of interactions: parent–child feeding and parent–child play. The current study focused on the parent–child feeding interactions, which were scheduled for times when the child would normally eat. Parents were asked that the meal offered to the child be representative of typical meals. As parent–child feeding is usually a dyadic interaction (Satter, 1986), we assessed each dyad (i.e., mother–child, father–child) separately, and thus were able to investigate similarities and differences between mother–child and father–child dyads.

Specifically, one parent fed the child at the beginning of the home visit, during afternoon snack time, while the other parent fed the child at the end of the visit, at dinner time. In 50% of the cases the father was the first to feed the child. An average feeding interaction lasted 12 min. All feeding sessions were videotaped.

Measures
Parent–Child Mealtime Dynamics
Mother–child and father–child mealtime dynamics were coded using the Mother–Infant/Toddler Feeding Scale
Table I. Demographics for the Entire Sample and by Groups

<table>
<thead>
<tr>
<th>Demographic variables</th>
<th>Entire sample (n = 97)</th>
<th>FD (n = 32)</th>
<th>SP (n = 30)</th>
<th>TD (n = 35)</th>
<th>Statistical comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child’s age in years</td>
<td>Mean (SD)</td>
<td>1.89 (0.77)</td>
<td>1.80 (0.80)</td>
<td>1.82 (0.83)</td>
<td>2.04 (0.67)</td>
</tr>
<tr>
<td>Gestational age (weeks)</td>
<td>Mean (SD)</td>
<td>39.86 (5.33)</td>
<td>39.07 (1.52)</td>
<td>39.75 (1.60)</td>
<td>39.26 (2.17)</td>
</tr>
<tr>
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<td>1</td>
<td>38.5%</td>
<td>43.8%</td>
<td>36.7%</td>
<td>35.3%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>37.5%</td>
<td>40.6%</td>
<td>33.3%</td>
<td>38.2%</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>12.5%</td>
<td>6.3%</td>
<td>16.7%</td>
<td>14.7%</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>9.4%</td>
<td>6.3%</td>
<td>13.3%</td>
<td>8.8%</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>2.1%</td>
<td>3.1%</td>
<td>0%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Mother’s age</td>
<td>Mean (SD)</td>
<td>31.72 (5.08)</td>
<td>31.03 (5.89)</td>
<td>32.40 (5.27)</td>
<td>31.77 (4.17)</td>
</tr>
<tr>
<td>Mother’s education</td>
<td>Mean (SD)</td>
<td>3.02 (0.95)</td>
<td>2.91 (0.89)</td>
<td>3.10 (0.97)</td>
<td>3.06 (1.01)</td>
</tr>
<tr>
<td>Mother’s place of birth</td>
<td>Israel</td>
<td>96.8%</td>
<td>96.8%</td>
<td>93.3%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>3.2%</td>
<td>3.2%</td>
<td>6.6%</td>
<td>0%</td>
</tr>
<tr>
<td>Father’s age</td>
<td>Mean (SD)</td>
<td>34.57 (5.68)</td>
<td>33.75 (5.87)</td>
<td>35.34 (5.90)</td>
<td>34.59 (3.38)</td>
</tr>
<tr>
<td>Father’s education</td>
<td>Mean (SD)</td>
<td>3.00 (0.92)</td>
<td>2.97 (0.92)</td>
<td>3.19 (1.02)</td>
<td>2.87 (0.83)</td>
</tr>
<tr>
<td>Father’s place of birth</td>
<td>Israel</td>
<td>93.4%</td>
<td>93.5%</td>
<td>88.9%</td>
<td>97%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>6.6%</td>
<td>6.5%</td>
<td>11.1%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Note. FD = feeding disorder; SP = sleep problems; TD = typically developing; mother’s and father’s education level: 1 = 0–8 years of education, 2 = 8–12 years, 3 = nonacademic above high school, 4 = academic.

The scale consists of items describing diagnostically relevant behaviors of parents and infants that are rated on a 4-point scale (0 = none to 3 = very much). Three trained research assistants who did not participate in the data collection and who were blind to any information on the family or groups coded the videotapes. To calculate the reliability of coding, we randomly selected 15% of the interactions for all three coders to rate. Each coder’s rating scores were treated as items and used to calculate the reliability for each item across raters using generalizability theory to estimate coefficient alpha for each item. In this context, alpha represents the overall covariance between the three raters while accounting for within-rater variance, such that the higher the alpha coefficient the more reliable the ratings of that item (Bakeman & Gottman, 1986). Raters’ interrater reliability was high (.86). Factor analysis revealed that all items measuring the dyadic conflict scale (12 items, e.g., “Mother makes negative or critical remarks about infant”) and struggle for control scale (seven items, e.g., “mother controls feeding by overriding infant’s cues”), loaded on the same factor, yielding one composite “Dyadic conflict and control” (α = .80 for fathers and α = .85 for mothers). A higher score on this composite indicated a more negative mealtime dynamic.

Parental Sense of Competence

Fathers and mothers completed the “parental sense of competence” scale (Johnston & Mash, 1989), which consists of 17 items answered on a 6-point scale (1 = strongly disagree to 6 = strongly agree; e.g., “I could have made a good role model for a new parent”). Scoring for some items is reversed so that for all items, higher scores indicated higher parenting self-esteem (α = .80, for both fathers and mothers).

Paternal Involvement

Mothers and Fathers were interviewed using the Caring and Rearing of Children scale from the “Who Does What?” interview (Cowan & Cowan, 1988). This measure assesses parental perceptions of their relative responsibility in child care and child rearing (10 items, α = .62 for mothers and α = .66 for fathers; e.g., “who decides how we spend our free time at home”), with 1 indicating that the mother does it all, 9 indicating that the father does it all, and 5 indicating that the parents share the task equally. Thus, a higher score indicates higher paternal involvement. Mother–father agreement was moderate (r = .46, p < .01), and these scores were averaged to increase reliability and validity of this index of paternal involvement (Rushton, Brainerd, & Pressley, 1983).

Child Temperament

Fathers and mothers completed the Infant Characteristics Questionnaire (ICQ; Bates, Freedland, & Lounsbury, 1979), which assesses infant temperament. The ICQ is composed of 32 items (e.g., “How does your child usually reacts to a new person?”), and responses are rated on a 7-point Likert scale, with lower scores indicating a more difficult temperament (α = .74 for mothers and α = .65 for fathers). The correlation between mothers’ and fathers’ reports was moderate (r = .40, p < .01), and thus, to increase reliability...
and validity of this index of child temperament (Rushton et al., 1983), a parental average score of child temperament was created.

Statistical Plan

A priori power calculations were conducted using the G*power program (Faul, Erdfelder, Buchner, & Lang, 2009) for these analyses. Medium to large effect sizes were expected based on previous findings in pediatric clinical samples (Krauss, 1993), indicating Cohen’s $d$ effect sizes $>.50$. It was found that a total of 78 participants were required for this study to detect a medium difference between two independent samples’ means (first hypothesis), when $\alpha=.05$ and 80% power was desired. In addition, for the bivariate effects (second hypothesis), 28 participants were required in each group to detect a medium to large effect size ($r=.40$). Finally, as a large effect size ($f^2=.35$) was expected for the regression analyses, and regression models were planned to involve not more than three predictors (third hypothesis), the minimum number of participants required was 24 in each group.

To address the first hypothesis proposing group differences in mother–child and father–child dyadic conflict and control during mealtime, analysis of variance models were conducted. To address the second hypothesis, proposing correlates of FD, Pearson correlations were calculated. Finally, the third hypothesis, proposing moderation, was tested in two stages. First, the independent variable (child temperament) and the moderator (paternal involvement) were centered (i.e., deviation scores were formed, as outlined in Jaccard, Turrisi, & Wan, 1990), and an interaction variable consisting of the product of the centered scores was computed. Following this analysis, hierarchical regression was used: in Step 1, child temperament and paternal involvement were entered. In Step 2, the interaction variable was entered. Moderation was evident in those cases for which the interaction variable provided significant independent prediction.

Results

Preliminary Comparison of Groups

Means and standard deviations of all study variables by group were calculated. No significant difference ($F(2, 97)=0.42$, ns) was found for maternal sense of competence between mothers in the FD ($M=73.06$, $SD=8.06$), SP ($M=74.76$, $SD=11.19$), and TD ($M=74.91$, $SD=9.86$) groups. Similarly, paternal sense of competence did not significantly differ ($F(2, 91)=1.33$, ns) between fathers in the FD ($M=74.00$, $SD=6.90$), SP ($M=76.62$, $SD=11.19$), and TD ($M=72.48$, $SD=11.24$) groups. In addition, child temperament was similar ($F(2, 95)=0.75$, ns) for children from the FD ($M=153.82$, $SD=16.66$), SP ($M=150.30$, $SD=18.80$), and TD ($M=155.86$, $SD=15.23$) groups. Finally, no significant difference ($F(2, 95)=0.88$, ns) was found between paternal level of involvement in the FD ($M=49.10$, $SD=8.62$), SP ($M=46.66$, $SD=6.79$), and TD ($M=47.70$, $SD=6.13$) groups.

Differences in Parental Conflict and Control Across Groups

Testing the first hypothesis, it was found that mother–child mealtime dynamics in the FD group ($M=8.91$, $SD=8.28$) were characterized by significantly higher ($t(92)=2.01$, $p<.05$, one tailed) levels of dyadic conflict and control than mother–child mealtime dynamics in the SP ($M=5.93$, $SD=4.25$) and TD ($M=6.63$, $SD=4.55$) groups ($F(2, 92)=2.08$, $p=.06$). The effect size (using Cohen’s $d$) for this comparison was medium ($d=.44$). Similarly, contrast tests showed that father–child mealtime dynamics in the FD group ($M=7.90$, $SD=5.84$) were characterized by higher ($t(89)=1.66$, $p<.05$, one tailed) levels of dyadic conflict and control than father–child mealtime dynamics in the SP ($M=6.40$, $SD=4.15$) and TD ($M=5.80$, $SD=4.56$) groups ($F(2, 89)=1.47$, $p=.11$). Effect size (using Cohen’s $d$) for this comparison was medium ($d=.36$).

Correlates of Conflict and Control for Mothers and Fathers Within Groups

Next supporting the second hypothesis, within the FD group, mother–child dyadic conflict and control was moderately negative correlated with mothers’ sense of competence, indicating that the more negative the mealtime dynamics were, the less competent mothers felt in their maternal role (see Table II). There was no such association for fathers. Furthermore, father–child dyadic conflict and control was significantly correlated with child temperament, suggesting that children rated as more temperamentally difficult experienced more negative father–child mealtime dynamics. This was not the case for mothers. The examination of the control groups revealed a different pattern of results. Specifically, correlations between maternal sense of competence and dyadic conflict and control in mother–child dynamics and between temperament and dyadic conflict and control in father–child mealtime dynamics were nonsignificant and negligible to modest in magnitude (see Table II). Furthermore, for mothers in the TD group, contrary to expectation, child temperament was related to mother–child mealtime dynamics, while
maternal sense of competence was related to child temperament, but not to mother–child mealtime dynamics. For mothers in the SP group, no significant correlation was revealed between these variables. Among fathers in the SP group, child temperament was related to paternal sense of competence. No other significant correlations were revealed in either control group (see Table II).

The Importance of Father Involvement

Next, hierarchical regression analyses were conducted to test the third hypothesis, proposing that the links between child temperament and father–child mealtime dynamics would differ by levels of paternal involvement. Among the FD group, the full regression equation explained 33% of the variance in dyadic conflict and control, with both Step 1 (temperament, paternal involvement; 20%) and Step 2 (temperament, paternal involvement, temperament \times paternal involvement; 13%) being significant. As seen in Table III, among the FD group, child temperament significantly predicted father–child dyadic conflict and control, and the interaction term of temperament \times paternal involvement significantly predicted dyadic conflict and control in father–child mealtime dynamics. Finally, the regression models explained negligible and nonsignificant amounts of the variance for the SP (6%) and TD (3%) groups. No significant moderation effects were seen among these groups (Table III).

This finding indicated that paternal involvement acted as a moderator in the link between child temperament and father–child conflict and control only in the FD group. To further examine the nature of this interaction, high and low paternal involvement levels were defined by subtracting and adding one SD to the centered variable, respectively. Hierarchical regression analyses were conducted to test the links between child temperament and dyadic conflict and control at the different levels of paternal involvement. Results indicated that at the low level of paternal involvement, child temperament did not significantly predict father–child mealtime dynamics (β = −.09, ns). However, as seen in Figure 1, in the context of high level of paternal involvement, child temperament was significantly related to the father–child mealtime dynamics (β = −.76, p < .01).

Discussion

Using naturalistic observations of mealtime dynamics, the current study characterized parent–child interactions among families of children with FD. Specifically, families

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**Table II. Correlations Among Study Variables for Mothers and Fathers in the FD, SP, and TD Groups**

<table>
<thead>
<tr>
<th>Study variables</th>
<th>CC</th>
<th>PSOC</th>
<th>Temp</th>
<th>PI</th>
<th>CC</th>
<th>PSOC</th>
<th>Temp</th>
<th>PI</th>
<th>CC</th>
<th>PSOC</th>
<th>Temp</th>
<th>PI</th>
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<tbody>
<tr>
<td>CC</td>
<td></td>
<td></td>
<td>−43**</td>
<td></td>
<td></td>
<td></td>
<td>−19</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>PSOC</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>−15</td>
<td></td>
<td></td>
<td></td>
<td>−35</td>
<td></td>
</tr>
<tr>
<td>Temp</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>−01</td>
<td></td>
<td></td>
<td></td>
<td>−43*</td>
<td></td>
</tr>
<tr>
<td>PI</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>−05</td>
<td></td>
<td></td>
<td></td>
<td>−23</td>
<td></td>
</tr>
</tbody>
</table>

Note. Figures above the diagonal represent correlations for mothers, whereas those below the diagonal represent correlations for fathers.

CC = conflict and control during mealtime; PSOC = parental sense of competence; Temp = child temperament; PI = paternal involvement; FD = feeding disorder; SP = sleep problems; TD = typically developing.

*It should be noted that similar patterns of results were found when using separate maternal and paternal reports of child temperament and of paternal involvement.

*p < .05; **p < .01; ***p < .001.

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**Table III. Hierarchical Regression Analysis for Testing Paternal Involvement as a Moderator of the Links Between Child Temperament (Independent Variable) and Dyadic Conflict and Struggle for Control (Dependent Variable) Among Fathers in the Three Groups**

<table>
<thead>
<tr>
<th>Step</th>
<th>Predictors</th>
<th>FD</th>
<th>SP</th>
<th>TD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>R²</td>
<td>F</td>
<td>β</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperament</td>
<td>−.37*</td>
<td>.20</td>
<td>3.57*</td>
<td>−.01</td>
</tr>
<tr>
<td>Paternal involvement</td>
<td></td>
<td>.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperament</td>
<td>−.43**</td>
<td>.33</td>
<td>4.58*</td>
<td>.17</td>
</tr>
<tr>
<td>Paternal involvement</td>
<td>.32</td>
<td></td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>Temperament \times paternal involvement</td>
<td>−.38*</td>
<td></td>
<td>.30</td>
<td></td>
</tr>
</tbody>
</table>

Note. FD = feeding disorder; SP = sleep problems; TD = typically developing.

*p < .05; **p < .01.
of children with FD exhibited more mother–child and father–child conflict and struggle for control during feeding than did dyads in the SP and TD families, supporting our first hypothesis. Within the families of children with FD, mother–child dyads most at risk for conflict and struggle for control at mealtimes were those whose mothers felt least competent as parents generally, whereas the father–child dyads most at risk were those with children with more difficult temperaments—supporting our second hypothesis. Finally, among the FD group, child temperament was linked to conflictual father–child interactions only for highly involved fathers, supporting our third hypothesis. Each of the hypotheses will be discussed in turn, and implications, limitations, and future directions will be presented.

Expanding existing knowledge, findings from the current study show that the difficulties seen in the mother–child dyads (Ammaniti et al., 2004) in families of children with FD also apply to father–child dyads. Using an observational coding system to characterize parent–child mealtime dynamics revealed that families of children with FD experience more conflict and struggles for control during mealtimes than either the TD or SP groups. This is an important finding, as much of the pediatric research and assessment focuses on child symptoms of failure to thrive, emphasizing the child’s weight and nutrition (Kedesdy & Budd, 1998), and ignoring the parent–child relationship. Furthermore, most of the psychological research has focused on either the children’s or the parents’ behavior, rather than the dyadic interaction (Ammaniti et al., 2004; Chatoor et al., 1997). This is often due to the fact that it is hard to assess dyadic behaviors through questionnaires. Observations, as opposed to using parental self-reports, enabled a more objective measure of these dyadic interactions (Chatoor et al., 1997). Observations may be particularly important when studying children with FD, as parents of children with FD tend to experience high levels of stress and anxiety (Ammaniti et al., 2004). Thus, they may not be aware of their own contribution to the negative mealtime dynamic (e.g., difficulty in facilitating child autonomy). Moreover, children diagnosed with FD are usually too young to be able to provide self-reports.

The comparison of the FD group to another clinical group (i.e., children with sleep problems) suggests that although parents of children with developmental or chronic problems tend to worry more about their children’s feeding and development than parents of healthy-developing children, the difficulties seen in mealtime dynamics may be unique to families of children with FD. Not surprisingly therefore, interventions tailored to families with a child with FD should focus on mealtime dynamics.

In particular, a better understanding of their children’s behaviors and needs (e.g., desire for independence, including autonomy in eating), and assistance in identifying strategies to avoid mealtime battles may be particularly helpful. These findings stress the importance of including observations of mealtimes when assessing children with FD for research, diagnostic, or clinical purposes.

Our second hypothesis was supported, showing distinct correlates for mothers and fathers among the FD group, thus providing evidence that fathers are not a replica of mothers (Atzaba-Poria et al., 2010; Atzaba-Poria & Pike, 2008). Specifically, parental sense of competence was related to parent–child mealtime dynamics among mothers, but not fathers. This finding supports recent research indicating that paternal controlling behaviors were predicted entirely by paternal reports of child behavior during the meal, whereas maternal controlling behaviors were predicted by a more complex set of variables, including maternal mental health symptoms (Haycraft & Blissett, 2011). Our findings are also in line with evidence suggesting that in families of children with disabilities, maternal stress is related to mothers’ own sense of competence, whereas paternal stress is more related to child temperament (Krauss, 1993; Noh et al., 1989). It is possible that mothers who do not feel competent in their role may try more actively to exert control during mealtimes, being more harsh and negative toward the child (Ammaniti et al., 2004). Alternatively, it may be that mothers who struggle to get their children to eat perceive themselves as incompetent parents.
This pattern of results was not evident in the two control groups. Interestingly, for mothers in the TD group, maternal sense of competence was not linked with mother–child mealtime dynamics, but with child temperament. Taken together, these findings imply that mealtime dynamics may have different meanings for mothers and fathers of children with FD than in other families. Whereas for mothers of children with FD mealtime dynamics are strongly related to their own perception of success and failure as parents, for fathers and for parents in the control groups, mealtime dynamics seems to be related more to the child's specific characteristics. This supports the idea that mothers of children with FD are more prone to self-blame regarding their child's eating in a way that pervades their relationship with the child, whereas mothers of TD children are more reactive to the child's actual behaviors. It should be noted that parents in the three groups did not differ in their mean levels of parental competence nor in their reports of child temperament. This indicates that the distinct associations uncovered for the FD group are not because children with FD have more difficult temperaments (Ammaniti et al., 2004; Davies et al., 2006), nor are they due to lower levels of maternal sense of competence (Chatoor et al., 2000).

Finally, our findings supported the moderation hypothesis—that child characteristics would be related to father–child mealtime dynamics only when fathers are more present in their children's everyday activities. Thus, it seems that this link develops through the repetitive transactions undertaken by highly involved fathers (Davies et al., 2006). Interestingly, these findings also suggest that being a more involved father may put father–child interactions at risk when children with FD are also temperamentally difficult. The everyday engagement with a child who is hard to manage may challenge fathers' abilities to maintain positive nonconflictual interactions with their children. Although not particularly palatable, this result suggests that being more distant may act as a protective mechanism for fathers of children with both a FD and more difficult temperament. Knowing that paternal involvement may have beneficial consequences for children (Pleck, 2010), and it is important to develop interventions that focus on assisting fathers to interact with their children in a more positive way.

The different correlates of FD seen for mothers and fathers in the FD group have important clinical implications. Treatment should focus on father–child as well as mother–child dynamics during feeding. Specifically, an intervention that focuses on helping parents to facilitate their child's initiatives of eating and exploring food independently could improve parent–child mealtime dynamics. Furthermore, the different correlates found for mothers and fathers indicate that distinct intervention programs should be developed for mothers and for fathers. Specifically, when working with mothers of children with FD, it is important to address maternal feelings of inadequacy being raised by the child's poor food intake and to enhance maternal sense of competence. Although the current study does not provide evidence for maternal sense of competence affecting child's feeding behavior, higher levels of maternal sense of competence were linked to less conflict and control during mealtime. Thus, improving maternal sense of competence may be related to less conflict and control within the mother–child mealtime interaction. Fathers, on the other hand, may benefit from parental guidance that will assist them to acquire more adaptive strategies for coping with children's more challenging temperaments during mealtime.

Limitations and Future Directions

Several limitations of the current study should be noted. First, the relatively small sample size limited statistical power, and precluded statistical testing of the differences seen in prediction models between the three groups. Hence, replicating this study with larger sample sizes, using regression models that include three-way interactions (e.g., group × paternal involvement × child temperament) would strengthen the results, and may reveal smaller (though systematic) effects. Second, although one of the inclusion criteria for the FD and exclusion criteria for the control groups was child weight (i.e., below the fifth percentile), we did not record child weight at the time of the home visit. Thus, no conclusion regarding variance in specific child weight or body mass index can be made. Third, due to the cross-sectional, nonexperimental nature of the study it is not possible to identify direction of effects. A future longitudinal study would be able to establish a better understanding of the pattern of influence. Fourth, in the current study we observed mother–child and father–child mealtime interactions separately. Future research that also includes triadic interactions within a family setting may be more naturalistic, providing further understanding of FD.

Conclusion

In summary, objective coding of mother–child and father–child mealtime interactions has revealed novel information about parent–child interaction in families with a child with FD. In such families, mealtimes are challenging for both mothers and fathers, but in different ways. Helping mothers to increase their sense of competence and
assisting fathers to find effective strategies for parenting a hard-to-manage child may enhance mealtime interactions.

Conflicts of interest: None declared.

References


