Stress and Depression in Mothers of Failure-to-Thrive Children

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Compared 30 mothers whose children were hospitalized for failure-to-thrive (FTT) to a normative group on standardized measures of perceived stress and depression. Child and maternal medical and demographic data were also taken. Standardized developmental and feeding assessments were done. Descriptive statistics, correlational analyses, and t tests were used to describe and examine group differences. FTT children were perceived overall as more stressful, less adaptable, more inconsolable, and more unhappy than were healthy children. Child characteristics associated with higher maternal stress levels were higher birth weight, absence of organic disease or behavioral feeding problems, and higher IQ. Maternal self-report of depression, attachment to her child, sense of competence in parenting, social isolation, and relationship to spouse were not different from the normative sample.

KEY WORDS: failure-to-thrive; parenting stress; feeding.

Children who fail to thrive, that is, fail to meet growth expectations for their ages, constitute approximately 1–5% of all infant hospital admissions and a large proportion of children seen in pediatric ambulatory settings (Berwick, 1980). Since failure-to-thrive (FTT) is associated with significant developmental risk, infants and children with FTT are frequently referred to pediatric psychologists.
for both prevention and intervention services (Bithoney & Rathbun, 1983; Singer, 1986, 1987; Singer & Fagan, 1984). Formerly classified into nonorganic (NOFT) and organic (OFT) categories based on whether or not organic disease was evident, more recent conceptualizations have recognized FTT as a final common pathway of multiple adverse biological, psychological, and social influences (Roberts & Maddux, 1982).

Dysfunctional caretaker–infant interactions are apparent in the feeding disorders, attachment difficulties, and behavioral disturbances observed in FTT children (Chatoor & Egan, 1983; Fraiberg, 1980; Roberts & Maddux, 1982). Few studies, however, have empirically investigated specific maternal or child factors that might contribute to the development of dysfunctional maternal–child relationships in FTT children, even though many intervention programs have had as their implied or specific focus the treatment of maternal depression and/or basic impairment in parenting abilities. Earlier, uncontrolled clinical reports focused on maternal psychopathology and described personality disturbances, depression, and psychiatric problems as characteristic of mothers of FTT children (Elmer, 1966; Huffton & Oates, 1977).

Later, better controlled studies have questioned the validity of the assumption that mothers of FTT children are psychologically different from mothers of normally growing children. To date, several controlled studies have differed concerning whether maternal stress, mental health, or attitudes towards parenting discriminate between FTT and control group mothers, although none have directly addressed the issue of depression (Casey, Bradley, & Wortham, 1984; vietze et al., 1980). However, no studies have examined levels of stress and depression related to child care in parents of FTT children, using well-standardized, psychometrically sound instruments.

The present study had two purposes. First, we asked whether mothers of FTT children (who presented with or without additional organic disease) showed more parenting-related stress and higher levels of depression than a large sample of mothers whose children were routinely seen in pediatric practice. We predicted that mothers of FTT children would show more parenting-related stress and higher levels of depression than a normative group. Second, we examined behavioral, medical, and demographic characteristics of the FTT child as they related to levels of parenting stress or depression. We expected that higher social risk and greater severity of medical illness or risk, would be associated with higher degrees of parental stress and depression.

METHODS

Subjects

Fifty children under the age of 6 years who were admitted to a specialized pediatric inpatient unit for treatment of FTT were recruited for study over an 8-
month period. As questionnaires and behavioral feeding assessments were routinely administered for clinical care purposes, informed consent was not necessary. Six mothers whose children had brief hospitalizations did not complete the questionnaires. Twelve additional mothers did not complete the questionnaires because of limited intellectual ability, impaired or psychotic mental status, or because the caretaker was a foster parent. Two mothers refused to complete the questionnaires. Thus, 30 children constituted the sample. Medical diagnoses of FTT were made by referring physicians and confirmed during the hospitalizations. All children met criteria for either weight for age under the 10th percentile or deceleration in weight across two major centile lines (Hamill et al., 1979).

**Procedures**

Mothers were asked to complete the Parenting Stress Index (PSI; Abidin, 1983) and the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Moch, & Erbaugh, 1961) on admission. The PSI is a standardized, normative, self-report scale which assesses the level of parental stress related to child caretaking. The scale yields three major source domains of stressors related to child characteristics, parent characteristics, and life stress. Thirteen subdomains of the PSI describe specific parental and child stressors. In the Child domain, characteristics of adaptability, acceptability, demandingness, mood, distractibility, and reinforcement of the parent are specified. In the Parent domain, subdomains of parental depression, attachment to the child, role restriction, sense of competence, social isolation, spousal relationship, and parent health are delineated. The normative sample used for comparative purposes was that on which the PSI was originally validated. This sample consisted of 534 parents whose children were seen at pediatric clinics in Virginia. Both normal children and children with behavior or health problems were represented. The sample was 92% white, 6% black. The educational level of the sample was relatively high, with about 35% college-educated. Spearman test–retest coefficients range from .70 to .82. The PSI has been used in other research studies concerning families with chronically ill children. Raw scores of the FTT and normative samples were used for comparative analyses.

The BDI is a standardized, normative, widely used self-report measure of adult clinical depression. Items on the BDI reflect intensity of depression and include those related to both mental and physical symptoms, such as low self-esteem, suicidal wishes, crying, fatigue, and loss of appetite. With possible scores ranging from 0 to 63, a cutoff score of less than 10 has been recommended as an indication of minimal or no depression (Beck, Steer, & Garbin, 1988).

Additionally, the following medical and demographic information was obtained prospectively on each patient: age at admission, maternal educational level, percentile of weight for age and percentage of desirable body weight
(DBW) based on NCHS norms (Hammill et al., 1979), birth weight in grams, gestational age in weeks, and length of stay in hospital. Dependent on age at admission, all children were given standard developmental or intellectual assessments yielding an IQ or DQ score using either the Bayley Mental Scale (Bayley, 1969), The McCarthy Scales of Children’s Abilities (McCarthey, 1972), or the Wechsler Preschool and Primary Scale of Children’s Intelligence (Wechsler, 1967). Presence of and type of organic disease were noted.

All subjects were classified as with or without a behavioral feeding disorder based on the following method. Patients were observed by skilled, pediatric nursing staff for the presence of feeding problems upon admission. If inadequate caloric intake or the presence of behavioral feeding problems were noticed by staff, a formal baseline feeding assessment was undertaken using a standardized method of applied behavioral analysis (Riordan, Iwata, Wohl, & Finney, 1980). This method quantifies the number of bites of food accepted, refused, and spit out, as well as associated behaviors such as crying, gagging, emesis, and vocalizations. After four baseline meals were completed, a doctoral level psychologist judged whether the child had a feeding disorder that required a formal behavioral intervention plan.

RESULTS

Initial analyses compared FIT children with or without presence of organic disease on all study variables. Differences were reliable only in that children with organic disease had higher IQs than nonorganic children, t(28) = 2.1, p < .05. Thus, the entire sample was pooled to compare the FITT group with the normative sample on the basis of PSI and BDI scores. Thirty FITT children (12 male, 18 female) were admitted to hospital at a mean age of 22.7 months (SD = 14.1). The mean weight percentile for age of the group was at less than the 5th percentile (M = 4.3; SD = 6.4), and the group, on the whole, was moderately malnourished, with mean percentage of desirable body weight at 84.2 (SD = 6.9). Lengths of stay averaged 31 days, but varied from relatively short (4 days) to lengthy admissions (198 days). Two thirds of the group had some type of additional organic illness, such as gastroesophageal reflux treated with medication, cerebral palsy, or severe, life-threatening illnesses, such as cystic fibrosis or urea cycle disorder. Over half (57%) of the sample was assessed as having behavioral feeding disorders. Most of the group displayed developmental delays, as the mean DQ/IQ for the sample was 79.4 (SD = 23.1), in the borderline range.

Educational and racial characteristics of the FITT sample differed somewhat from that on which the PSI was normed, in that there were no mothers in the FITT group with less than a ninth-grade education (0 vs. 14% of the PSI sample). The
Table I. Differences in Perception of Parenting Stress Between Failure-To-Thrive (FTT) Sample and Normative Group

<table>
<thead>
<tr>
<th>Parenting Stress Index Scale</th>
<th>FTT (n=30)</th>
<th>Normative (n=600)</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total stress score</td>
<td>233.0</td>
<td>221.1</td>
<td>1.68</td>
</tr>
<tr>
<td>Child domain</td>
<td>114.3</td>
<td>98.4</td>
<td>4.54*</td>
</tr>
<tr>
<td>Adaptability</td>
<td>29.3</td>
<td>24.5</td>
<td>4.62*</td>
</tr>
<tr>
<td>Acceptability</td>
<td>13.9</td>
<td>12.5</td>
<td>2.12b</td>
</tr>
<tr>
<td>Demandingness</td>
<td>21.3</td>
<td>18.1</td>
<td>3.81*</td>
</tr>
<tr>
<td>Mood</td>
<td>11.5</td>
<td>9.6</td>
<td>3.56*</td>
</tr>
<tr>
<td>Distractibility</td>
<td>26.7</td>
<td>24.4</td>
<td>2.56*</td>
</tr>
<tr>
<td>Reinforces parent</td>
<td>11.1</td>
<td>9.3</td>
<td>3.34*</td>
</tr>
<tr>
<td>Parent domain score</td>
<td>118.6</td>
<td>122.7</td>
<td>-0.91</td>
</tr>
<tr>
<td>Depression</td>
<td>18.6</td>
<td>20.4</td>
<td>-1.77</td>
</tr>
<tr>
<td>Attachment</td>
<td>12.3</td>
<td>12.6</td>
<td>-0.53</td>
</tr>
<tr>
<td>Role restriction</td>
<td>17.0</td>
<td>19.0</td>
<td>-2.1</td>
</tr>
<tr>
<td>Sense of competence</td>
<td>28.3</td>
<td>29.2</td>
<td>-0.78</td>
</tr>
<tr>
<td>Social isolation</td>
<td>13.1</td>
<td>12.8</td>
<td>0.43</td>
</tr>
<tr>
<td>Spouse relationship</td>
<td>16.9</td>
<td>16.8</td>
<td>0.11</td>
</tr>
<tr>
<td>Parent health</td>
<td>11.8</td>
<td>11.9</td>
<td>-0.17</td>
</tr>
</tbody>
</table>

*p < .01, one-tailed.

Table I lists the raw scores of the FTT and the normative groups and significant differences between them on PSI subscale scores. The mean child domain score and all child subscale scores were reliably higher for the FTT sample in comparison to the normative group, indicating that mothers of FTT children perceived them as more stressful. FTT children were rated as less adaptable, less acceptable, more demanding and moody, more distractible, and less reinforcing to their parents than were children in the normative group. All Parent domain measures and Total Stress scores were not different from the normative sample. The overall average of the BDI scores was also within the range of minimal or no depression (M = 8.7, SD = 5.7).

A number of medical, cognitive, and demographic factors were reliably associated with perceived child characteristics and maternal stress levels. Several medical factors related to mothers’ perceptions of their FTT children. Most notably, cognitive status was associated with two child characteristics. Children who achieved lower developmental and IQ scores were perceived as less acceptable, r(30) = -.52; p < .01, to their mothers and as more distractible, r(30) = -.36; p < .05. FTT children with organic diseases were seen as more adaptable, r(30) = .35; p < .05. A greater degree of malnutrition, as measured through percentage of DBW was associated with less variability in mood, r(30) = .39, p
<.05. In addition to medical factors, maternal perceptions of child characteristics were also mediated by educational variables. Less educated mothers rated their children as more demanding, \( r(30) = -.40, p < .05 \), and as more distractible, \( r(30) = -.41, p < .05 \).

Significant relationships between child medical characteristics and specific maternal stressors in parenting were noted within the FTT group. However, greater severity of child medical and social risk was not invariably related to higher parental perception of stress. Prematurity, either through birth weight or gestational age, emerged as a salient dimension related to parental characteristics. Mothers whose FTT children had been of higher gestational age at birth had higher levels of stress on the total Parent domain scales, \( r(30) = .33, p < .05 \), and reported greater disruption in their attachment to their FTT children, \( r(30) = .39, p < .05 \). Similarly, mothers of FTT children with higher birth weights reported greater degrees of depression \( r(30) = .45, p < .05 \); social isolation, \( r(30) = .37, p < .05 \); and more problematic relationships with their spouses or boyfriends, \( r(30) = .40, p < .05 \). Greater overall parenting stress and greater dysfunction in the spousal/boyfriend relationship were associated with higher IQ levels in the FTT child, \( r(30) = .35, p < .05 \) and \( .49, p < .01 \). Children who did not exhibit behavioral feeding problems had mothers who were more socially isolated, \( r(30) = .40, p < .05 \).

One child risk dimension (i.e., degree of malnourishment) was related to higher parental stress levels. Mothers whose FTT children were more malnourished reported less attachment to their children, and expressed a reduced sense of competence in parenting, \( r(30) = -.36, p < .05 \) and \( -.37, p < .05 \).

**DISCUSSION**

Our findings do not support the notion that maternal depression or dissatisfaction with parenting are consistent correlates of the maternal–child relationship in FTT. Mothers of a diverse group of children hospitalized for FTT did not characterize themselves as experiencing greater stress related to their parenting roles and did not exhibit greater levels of depression than normal samples on two separate measures of depression. Since the percentage of BDI scores of zero was not unusual (13%), it is unlikely that these results are due to high rates of denial in the FTT sample. Pollitt, Eichler, and Chan (1975) also found no higher evidence of overt maternal psychopathology in a controlled study of FTT children and their families, as did Casey, Bradley, and Wortham (1984) in examining parent attitudes, although depression was not specifically studied. Similarly, Vietze et al.’s (1980) prospective study found no differences at birth in feelings of competence related to child caretaking between mothers whose children’s
growth developed normally and mothers whose children became failure-to-thrive.

As predicted, FTT children were perceived overall as more stressful by their mothers than were healthy children in the PSI normative group. Previous controlled studies have almost uniformly found FTT children to be temperamentally and behaviorally more difficult than controls (Pollitt & Eichler, 1976; Rosenn, Loeb, & Jura, 1980). Parental perceptions of the FTT child as difficult or sickly have been previously conceptualized as creating additional stress for caretakers (Bithoney & Rathbun, 1983). Our findings also show that these perceptions are related to maternal level of education as well as child developmental delay. The majority of previous studies that have investigated maternal perceptions of the FTT child have also been primarily of children of mothers with low educational levels and in which child samples have been described as developmentally delayed. Thus, the abnormal behaviors and negative parental perceptions of the FTT child may be a function of these factors rather than of child growth failure. Other studies using the PSI with developmentally delayed children with feeding problems have also found that mothers perceived these children as more stressful and difficult, but did not describe their own general well-being or parenting attitudes to be different from parents of healthy children (Greenberg, 1983).

The present study also supports previous observations of a high incidence of feeding disorders in FTT children (Chatoor & Egan, 1983; Pollitt & Eichler, 1976). Our data suggest that specific behaviors, such as vomiting, gagging, and food refusal, occur with high frequency in FTT children with or without organic disease. Since these behaviors may be targeted for specific interventions, further study of the nature of feeding disorders in FTT is warranted.

Of some interest are the relationships between biological and social variables to mothers’ perceptions of their children as well as of their own parenting stress. More educated mothers who were of higher socioeconomic status perceived their FTT children as less demanding and less distractible. Children with developmental delay in addition to FTT were seen as more distractible and as less acceptable to mothers. FTT children who had some prior or current medical problem were considered more adaptable, whereas better nourished children showed greater variability in mood.

Child biologic and behavioral variables also related to parenting stress within this FTT sample. Mothers of FTT children who would have been considered healthier and less at-risk prior to hospitalization (i.e., those whose children had been full-term at birth) had higher IQs, and who were without behavioral feeding problems, tended to endorse greater levels of perceived stress related to parenting role, including stress in spousal relationship, higher levels of depression, and greater social isolation.

Several explanations for these findings are possible. Mothers whose FTT
children showed apparent biologic vulnerability or who had predisposing medical factors for their growth problems may have been less likely to feel responsible for their children's growth difficulties and thus would not experience increased stress related to their children's growth status. In the case of FTT children with preexisting medical conditions, professionals would be less likely to attribute causal factors to parenting deficiencies, thus reducing stress on parents. Alternatively, the etiologic pathway to FTT for a subset of infants without biologic vulnerability may differ, with stressful life events or parenting difficulties exerting a greater influence on the parental-child interaction.

Methodological limitations of the present study should be considered in evaluating the findings. Although children in the present sample were those in which organic influences were considered, they may not be representative of typical children with organic FTT seen in pediatric units. Because of the specialized nature of the hospital unit, referring physicians had already determined that the child's medical problems were not the primary cause of the child's growth delays. Given this bias towards a sample in which psychological factors could be expected to be more prominent, the absence of differences between study mothers and the normative group on depression and parental stress variables is even more striking.

Another limitation is that our sample was overrepresented with low SES families in comparison to the PSI normative sample. Within this sample, perception of child difficulty was related to lower maternal educational level. Thus, our findings with regard to parental perception of difficulties, other than feeding problems, may be related to social class differences and should be tested further. However, our behavioral assessment of feeding difficulties in this study using objective observations by trained staff, in fact, provides independent corroboration for maternal perception of difficulty in child behavior. Our findings are also consistent with all previous studies of the behavior of FTT children. Lower social class in the FTT sample would not undermine our findings related to the lack of differences on Parent domain subscales of the PSI, because if anything, lower social class would be expected to be associated with increased maternal depression and stress. Because approximately one-quarter of our original sample was unable to complete the questionnaires due to limitations in intellectual or psychiatric status, the present findings cannot be generalized to mentally retarded mothers of FTT children, who indeed may experience increased stress and depression related to parenting.

Future studies of FTT children should include larger samples or carefully matched comparison groups so that some of the confounding factors noted in the present study which affect maternal caretaking stress, such as prematurity, medical illness, and social class, can be investigated. Contrasting FTT groups to children with other chronic illnesses or handicapping conditions who are without
growth failure or feeding problems can provide important information about the psychological stressors unique to FTT. Continued research using expanded and more detailed assessments of the psychological and social environments of FTT children and their families will yield a greater understanding of these children and lead to the design of more successful intervention programs.

REFERENCES


