The Parent-Physician Relationship in Pediatric Asthma Care

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Objective: To examine the feasibility of using a behavioral coding system, the Five Minute Speech Sample (FMSS), to estimate the prevalence of relationship difficulties between parents and physicians in a pediatric asthma care setting.

Method: The FMSS was administered to 20 parents of children with severe, chronic asthma and to the physicians they worked with during a brief day program admission.

Results: Rates of relationship difficulties between parents and physicians ranged from 15% to 40%, comparable to those previously identified in patient-therapist relationships in psychiatric populations.

Conclusions: Although further information is needed about validity and reliability, the FMSS appears to provide clinically relevant information about the parent-physician relationship in the context of pediatric chronic illness.

Key words: parent-physician partnership; pediatric asthma management; parent-child relationship; five minute speech sample; criticism; emotional overinvolvement.

This study explores several aspects of the interpersonal processes involved in the formation of an effective parent-physician relationship for the medical management of children with severe, chronic asthma. Severe, chronic asthma is a potentially life-threatening condition that necessitates adherence to a complex medical regimen. At the heart of successful asthma management is the development of effective relationships among physicians, parents, and children. In the newly revised National Asthma Education and Prevention Program’s Guidelines for the Diagnosis and Management of Asthma, education for a partnership in asthma care was identified as one of four components critical for successful asthma management (National Institutes of Health, National Heart, Lung, and Blood Institute, 1997). Specifically, “education for an active partnership with patients remains the cornerstone of asthma management and should be carried out by health care providers delivering asthma care” (p. 5).

We were interested in how parents and physicians develop, at the onset of treatment, these “active partnerships” that foster pediatric asthma management. Therefore, this study examines emotional characteristics of the relationships developed between parents and physicians during an intensive, tertiary care day program for children with severe, chronic asthma. Specifically, this study estimates the prevalence of negative relationships, characterized by a negative emotional connection between parents and physicians, using a macroana-
analytic behavioral coding scheme. We also explored two secondary questions relating to qualities of the parent and the family that may influence the effectiveness of the parent-physician partnership. First, do some parents demonstrate a general tendency to negatively evaluate their home and referral center physician? Second, are problems in the parent-child relationships associated with negative parent-physician relationships?

The literature on patient-physician relationships in adult medical care suggests that a physician’s emotional communication behaviors significantly influence patient satisfaction with medical care, the estimation of their physician’s technical competence, and the likelihood that patients will remember and comply with medical advice (Ben-Sira, 1980, 1982; Buller and Buller, 1987; DiMatteo, Hays, & Prince, 1986; Heszen-Klemens & Lapinska, 1984). Studies using detailed microanalytic behavioral coding systems to study patient-physician interactions suggest that patients are more satisfied when physicians are affiliative, supportive, and friendly (Buller & Buller, 1987; Roter et al., 1997, Levinson, Roter, Mulhooley, Dull, & Frankel, 1997). In contrast, patients reported less satisfaction when physicians were dominant, asked more questions than the patients asked, and restricted the conversation to the discussion of biomedical topics (Buller & Buller, 1986; Roter et al., 1997), likely because patients perceive such physicians as critical, uncaring, or uninterested. Taken together, these studies indicate that the emotional climate developed between patients and physicians is a key determinant of the quality of this relationship.

Much less research has been conducted examining patient-physician interactions for pediatric medical care. Physician-patient interactions in pediatrics are more complex because they occur within the context of the family system and both the parent and child can have important roles in this process (Pantell, Stewart, Dias, Wells, & Ross, 1982). Even though the child is the patient and plays an active yet age-dependent role in his or her own medical care, parents are often responsible for monitoring and making important decisions regarding their child’s medical care. In fact, parents are ultimately responsible for making treatment decisions for minor children, including choosing and reimbursing a physician. Thus, it may be particularly important for physicians to attend to relationships with the parents in pediatric medical care.

The research reviewed suggested to us that early negative emotional appraisals of the parent-physician relationship may identify partnerships likely to have a negative outcome. For this task, we needed a measure of negative emotions in relationships that would be easy to administer in a busy pediatric day program yet still provide some of the rich information about interpersonal interactions previously identified by more time-consuming microanalytic techniques.

Accordingly, we chose to pilot the Five Minute Speech Sample (FMSS: Magana-Amato, 1989) to assess the emotional climate of the parent-physician relationship. The FMSS is a macroanalytic behavioral coding system that assesses criticism or emotional overinvolvement in relationships. The FMSS has been used to study family relationships of children with asthma (Hermanns, Florin, Dietrich, Rieger, & Hahlgard, 1989; Schöbinger, Florin, Zimmer, Lindemann, & Weinher, 1992; Wamboldt, Wamboldt, Gavin, Roessler, & Brugman, 1995). Although the FMSS has not been used to assess qualities of the patient-physician relationship in medical populations, there is reason to believe that this measure is feasible and relevant for this relationship. Similar measures of criticism and emotional overinvolvement have been used to assess relationships of staff working with chronically mentally ill patients at residential and day treatment facilities. Moore, Kuipers, and Ball (1992) used the Camberwell Family Interview, a long structured interview from which the FMSS was derived, to assess criticism in staff-patient relationships in a psychiatric residential treatment center. They found that 11.4 % of the staff were coded as having a critical appraisal of their relationships with patients. Stark and Soil (1994) used the FMSS and found that 33% of therapists gave critical appraisals of the relationships with their patients and that high critical ratings were likely not a “trait” of the therapist but rather a characteristic of a particular relationship. Accordingly, given the results of these two studies, our primary goal in this study was to obtain prevalence rates for criticism and emotional overinvolvement in the parent-physician relationship for pediatric asthma care using the FMSS.

Most of the literature we reviewed on the parent-physician relationship identifies physician communication behaviors that predict patient satisfaction. Another alternative is that parental characteristics may determine the effectiveness of this relationship. For example, some parents may be predisposed to appraise their physician negatively.
Therefore, as a secondary question, this study explored the similarity of parental appraisals of the parent-physician relationship across the home and referral center physicians.

An additional question of our study asked whether difficulties in the parent-child relationship would be associated with a negative parent-physician partnership. Some authors have suggested, primarily from clinical experience, that interactions in the parent-physician relationship often resemble those that occur within families (Ciompi, 1980; Moore, Kuipers, & Ball, 1992; Vaughn & Leff, 1984). However, in general, researchers have found no association between criticism expressed by family members about patients with schizophrenia and criticism expressed by therapists toward the same patients (Stark & Soil, 1994).

**Method**

**Participants**

Participants were recruited from the pediatric and adolescent day program at the National Jewish Medical and Research Center. Children are referred to the day program when their asthma has not responded to less intensive outpatient care. Within this program, children and their families receive a comprehensive evaluation and treatment, including both psychosocial and medical evaluations. Participants were admitted with a primary diagnosis of severe, chronic asthma and had no other medical difficulties except those typically seen with a diagnosis of asthma (e.g., sinusitis or eczema). Additionally, only children who were accompanied by at least one primary caretaker were approached to participate in the study. Whenever possible, mothers were chosen to participate. However, a father and a foster mother participated in this study because the child’s mother was not available. Of the parents approached, 57% agreed to participate. The reasons given for refusals related to feeling stressed by the hospitalization, feeling too busy with medical appointments, or not wanting to be videotaped. This rate of participation is comparable to rates previously obtained in another family-oriented study conducted within the same treatment unit (60%; Wamboldt, Weintraub, Krafchick, & Wamboldt, 1996).

Participants consisted of 20 children ages 8 to 16 years, with a mean age of 11.7 and a standard deviation of 2.67. Thirty-five percent of the participants were female. Ten percent of the participants were African American and the rest were Caucasian. The length of stay ranged from 10 to 34 days, with a mean of 22 days and a standard deviation of 9.2 days.

Physicians were asked to participate only if the parent agreed to participate and gave permission for the researcher to collect information about his or her children’s medical care during the hospitalization. Rather than recruiting the more senior attending physicians, we chose physician’s assistants and pediatric allergy-immunology fellows to participate in the study, because they had the majority of face-to-face contact with the families and were consistently present across the span of the admission, as opposed to the attending physician, who rotated on and off service on a monthly basis. For simplicity’s sake, we use “physician” to refer to the physician’s assistant or fellow throughout the remainder of this article. All physicians approached agreed to participate.

**Measures**

The Five Minute Speech Sample for the Parent-Physician Relationship (Magana-Amato, 1989). The FMSS was used to assess criticism and emotional overinvolvement in the client-therapist relationship in a manner fashioned after that employed by Stark and Soil (1984). The physician was asked to speak for five uninterrupted minutes, offering thoughts and feelings about the parent, what it was like working with the parent, and how he or she got along with this parent. Physicians were given the following probe: “I’d like to hear your thoughts and feelings about Mrs. Brown in your own words without my interrupting with any questions or comments. When I ask you to begin I’d like you to tell me what kind of person Mrs. Brown is and what it was like working with the parent, and how he or she got along with this parent. Physicians were given the following probe: “I’d like to hear your thoughts and feelings about Mrs. Brown in your own words without my interrupting with any questions or comments. When I ask you to begin I’d like you to tell me what kind of person Mrs. Brown is and what it was like working with her during this hospitalization. After you begin to speak, I prefer not to ask any questions until the five minutes are over. Do you have any questions before we begin?” Once the physician began to speak, minimal probes were then provided, other than “Please tell me anything about Mrs. Brown for just a few more minutes.”

The parents were also asked to speak for five uninterrupted minutes, stating their thoughts and feelings about the physician, what kind of physician he or she is, and how the physician got along with their family. Parents received the following probe: “I’d like to hear your thoughts and feelings...
about Dr. Smith in your own words and without my interrupting with questions or comments. When I ask you to begin, I’d like you to speak for five minutes, telling me what kind of physician Dr. Smith is and how he got along with you and your child during this hospitalization. After you begin to speak, I prefer not to answer any questions until the five minutes are over. Do you have any questions before we begin?”

The speech samples were then transcribed and coded according to the most recent manual by Magana-Amato (1989) and using coding modifications for emotional overinvolvement suggested by van Furth, van Strien, van Son, and van England (1993). Emotional overinvolvement is coded for the presence of statements reflecting self-sacrificing/overprotective or an emotional display (e.g., crying or tearing) during the interview. Criticism is coded for the presence of a negative initial statement, one or more criticisms, or an overall negative relationship. We broadened the criteria for the criticism dimension to more fully assess the partnership between parents and physicians. The presence of a negative relationship was also coded when the physician’s or the parent’s speech sample included any of the following: (1) difficulty eliciting the parent’s participation in treatment planning, (2) difficulty reaching agreement with the parent over important treatment decisions, and (3) pervasive noncompliance with treatment recommendations. For the parent-physician relationship, we renamed the criticism dimension “negative partnership” to reflect these broadened criteria.

Although the FMSS has not been used for the parent-physician relationship in this specific population, Stark and Soil (1994) used the FMSS to assess therapist-patient relationships in an outpatient psychiatric population and found that 33% of therapists gave critical appraisals of their relationships with their patients.

The Five Minute Speech Sample for the Parent-Child Relationship (Magana-Amato, 1989). For this relationship, we used the standard probe, method, and coding system described by Magana-Amato, again using the modifications for emotional overinvolvement suggested by van Furth, van Strien, van Son, and van England (1993). The parents are asked to speak for five uninterrupted minutes, stating their thoughts and feelings about their child, what kind of person their child is, and how they get along with the child. The speech sample is transcribed and coded for two components: criticism and emotional overinvolvement using only the standard criteria.

Criticisms have been previously identified as a significant predictor of many childhood behavioral disturbances (Hibbs et al., 1991) and has also been associated with negative outcomes for children with insulin-dependent diabetes and severe, chronic asthma (Hermanns et al., 1989; Schöbinger et al., 1992; Wamboldt et al., 1995). Additionally, FMSS ratings of high criticism for parents of children with asthma have been associated with more directly observed negative interactions in dyadic problem-solving tasks (Hermanns et al. 1989; Schöbinger et al. 1992).

Coding of Videotapes. Three research assistants received training in the FMSS coding system including (1) a detailed review of the manual and memorization of coding rules and definitions, (2) coding a series of training tapes until acceptable interrater reliability (85% agreement for all categories over two series of training tapes) was achieved and maintained, and (3) ongoing weekly consensus meetings with the reliability coder during which discrepancies in individually coded tapes were discussed and joint consensus codes were developed. Kappas were calculated to determine interrater reliability for codes of expressed emotion and emotional overinvolvement over all samples obtained (e.g., parent speaking about child, parent speaking about referring physician, parent speaking about day program physician, and day program physician speaking about parent). For criticism a $\kappa$ of .76 was obtained, and for emotional overinvolvement a $\kappa$ of .87 was obtained.

Medication Compliance at Admission. Medication compliance was assessed at admission for 18 of the 20 children who were taking either prednisone or theophylline upon admission. Medication compliance was rated on a 0 to 3 scale using blood chemistry data from the time of admission, with higher scores indicating better compliance. Points were assigned as follows: 1 for serum theophylline level $<$2 meq/ml; 2 for serum theophylline level $>$2 and $<$5 or $>$15; 3 for serum theophylline level $>$5 and $<$15. Compliance with oral steroids was assessed using morning cortisol levels for children prescribed $>$10 mg prednisone equivalents daily, a dose thought to be sufficient to suppress endogenous cortisol production. Points were assigned as follows: 1 for cortisol level $>$5 mcg/ml; 2 for cortisol level $>$1 and $<$5; and 3 for cortisol level $<$1mcg/ml. The overall compliance score was
calculated as the mean of the theophylline score and the cortisol score for all nonmissing data.

**Procedure**

Parents were recruited for this study on the second day of their child's admission. All parents were informed that their participation in this study was completely voluntary and in no way influenced the medical care their family received during the day program stay. They were informed about confidentiality and assured that no member of the treatment team would have access to information provided. Speech samples were obtained in a laboratory completely separate from the medical unit. When parents agreed to participate, their child's physician during the admission was then also recruited to participate in the study. Physicians were informed about confidentiality and assured that neither parent nor child would have access to information provided. Informed consent was also obtained from the physician. The protocol for this study was reviewed and approved by the institutional review board at the National Jewish Medical and Research Center.

At admission, two speech samples were obtained from the parent. One speech sample pertained to his or her relationship with the child, and the second was about his or her relationship with the referring physician. At discharge, a speech sample was collected about the child's physician during the day program stay. Also at discharge, physicians were asked to provide speech samples about their relationship with the parent. Blood chemistry data was obtained from chart review following discharge.

Prevalence rates were obtained for negative partnerships and emotional overinvolvement in the parent-physician relationships as expressed by the parent at admission and discharge (although these reports covered two different relationships). Prevalence rates were also obtained for negative partnerships and emotional overinvolvement in the parent-physician relationship as expressed by the day program physicians at discharge.

**Results**

**Preliminary Analyses.** Wilcoxon tests were performed between reports of negative parent-physician partnerships by both parents and physicians, the age of patient, and length of stay. We identified no significant associations. Chi-square tests were performed between reports of negative parent-physician partnerships and race and gender of the child. Again, we identified no significant associations.

**Power Analysis.** For a power of 80% or greater with an $\alpha = .05$, a sample size of at least 20 is needed to detect a significant difference.

**Prevalence of Negative Parent-Physician Partnerships.** At admission, the prevalence of a negative partnership in the parent-physician relationship (for the referring physician) as reported by the parent was 35%, and the incidence of emotional overinvolvement was 0%. At discharge, the incidence of a negative partnership in the parent-physician relationship (for the referring physician) was 15% at discharge and the incidence of emotional overinvolvement was 0%. No association was identified between parents' reports of a negative partnership in their relationship with their referring physician and parents' reports of a negative partnership with their child's inpatient physician ($\chi^2 = .04, p < .94$).

The incidence of a negative partnership in the parent-physician relationship as expressed by the day program physician was 40%. No physicians gave reports of relationships that were rated as emotionally overinvolved. No association was identified between a negative partnership in the parent-physician relationship as expressed by the parent and a negative partnership as expressed by the physician ($\chi^2 = .07, p < .80$).

**Relationship Between Negative Partnerships or Criticism, Emotional Overinvolvement, and Expressed Emotion in the Parent-Child Relationship and in the Parent-Physician Relationship.** To explore these secondary questions, we performed a series of $\chi^2$ tests between parental admission and discharge speech samples and the physicians’ reports of relationships with the parent. Significant effects were identified only with the admission data. The association between criticism in the parent-child relationship and the physicians’ reports of the partnership with the parent was not significant ($\chi^2 = 00, p > 1$). When parents expressed emotional overinvolvement in the parent-child relationship at admission, physicians were significantly more likely to report negative partnerships with the parent ($\chi^2 = 6.30, p < .02$).

**Associations Between Compliance at Admission and the Parent-Physician Partnership.** Wilcoxon tests were performed between parental reports of the parent-physician partnership at admission and discharge and medication adherence scores at admission, and between physicians’ reports of the parent-physician partnership at discharge and medication adherence scores at discharge.
partnership and medication adherence ratings at admission. We found no significant associations.

**Discussion**

A crucial component to the optimal medical management of children with severe, chronic asthma is the development of an effective parent-physician relationship. From a review of the literature on patient-physician relationships, we surmised that the emotional connection between parents and physicians was a significant first step for the establishment of an effective relationship. From this perspective, negative emotions between parents and physicians early in treatment can serve as a marker of difficulties in the formation of this relationship. To begin our study of this process, we wanted to identify a means of assessing problematic relationships between parents and physicians in pediatric asthma care settings. Accordingly, we chose to pilot the FMSS for identifying negative partnerships or emotional negativity in the parent-physician relationship.

**Prevalence of Relationship Difficulties in the Parent-Physician Relationship.** Emotional overinvolvement was not a relevant variable for this relationship. None of the parents or the physicians reported emotional overinvolvement in the parent-physician relationship. The FMSS did detect negative partnerships in the parent-physician relationship. Parents were coded as reporting a negative partnership with their referring physician 35% of the time and 10% of the time they reported a negative partnership with the day program physician. Physicians reported a negative partnership with parents 40% of the time. These rates are comparable to rates of critical appraisals made by therapists about their relationship with their patients for psychiatric populations. For example, Stark and Soil (1994) used the FMSS and found that 33% of therapists gave critical appraisals of the relationships with their patients. These results suggest that the FMSS was able to detect negative partnerships in the parent-physician relationship and that difficulties in this relationship occur fairly often.

To better understand what parents were responding to when they reported a negative partnership with physicians, we looked at how parents were assigning this code. Parents were assigning codes for a negative partnership for different reasons including a critical tone, critical comments about the physician’s abilities, and reports of conflict with the physician. For example, one parent said, “I have every faith in him as a doctor; unfortunately we have had a couple of experiences that left me having a hard time trusting him.” A different parent said, “She does listen to what you have to say, not necessarily that she takes it for what it is” (said with sarcastic tone).

We also examined how physicians coded negative partnership. All received a negative-partnership code for describing a relationship in which they had difficulty forming a collaborative partnership with the parents. This was usually reflected through a statement that the parents had their own ideas about asthma management that differed from what the physician was trying to communicate about the child’s illness management. Often this led to difficulties forming treatment plans or in nonadherence with medical recommendations during the day program stay. For example, one physician commented, “We felt that mom would just listen and be agreeable when we were the persons talking to her. Yet she definitely had her own set of ideas and beliefs and would go behind our backs and do things differently than what we had recommended. So I think that was a big struggle.” Of the physicians who received negative partnership codes, only three expressed specific criticisms about the parent, whereas all of the physicians who were coded with a negative partnership appraisal (including the three who expressed specific criticisms) made comments indicating relationship difficulties in the context of asthma management and treatment issues.

**Associations Among Parents’ Reports and Physicians’ Reports of the Parent-Physician Relationship.** We found no associations between parents’ reports of their relationship with their referring physician and their reports of their relationship with the day program physician. The lack of this association, as well as the observed difference in the rates of negative partnerships across these two relationships, suggests that this measure is relationship-specific rather than a measure of a trait of the respondent. This discrepancy could also explain why these families were referred for treatment at a major tertiary care center. Children often are referred for treatment at our program when their asthma had not responded to less intensive outpatient interventions. For at least some of these families, difficulties in the parent-physician relationship may have contributed to the treatment failure. Additionally, a variety of processes may make it easier for parents to report nega-
tive appraisals about relationships with people who are farther away from them at that moment (i.e., referring physicians) than those involved with their current care (i.e., day program physicians).

We identified no associations between negative partnerships in the parent-physician relationship as reported by the parents for their relationship with the physician and as reported by the physicians for their relationship with the parent. In the marital relationship literature, reciprocity of negative emotions is common in conflictual relationships (Gottman, 1993; Markman, 1979). A significant association between parents’ reports and physicians’ reports of this relationship would have been consistent with this literature. One possible explanation for the lack of this association is our limited sample size. However, reciprocity in relationships may need more time to develop. Additionally, social desirability may have influenced parents and physicians differently in their evaluations of this relationship.

**Associations Between Difficulties in the Parent-Child Relationship and the Parent-Physician Relationship.** We suspected that parents would have more difficulties establishing effective relationships with their child’s physician when they reported more criticisms toward their child. However, this was not the case. Instead, our data suggested that parents are often able to work successfully with their child’s physician despite evidence of conflict with their child.

Despite the lack of findings for criticism, emotional overinvolvement in the parent-child relationship at admission was significantly associated with the physicians’ reports of a negative parent-physician partnership. Most parents who received a code of emotional overinvolvement had demonstrated some lack of objectivity about their child’s behavioral difficulties. For example, such parents blamed their child’s behavioral difficulties on the child’s illness, and particularly on side effects from the child’s medication. For example, one parent noted, “I have to understand that when he’s short with me, it’s not him, it’s the medications.” This appraisal of their child’s behavior may reflect interpersonal processes within the parent-child relationship that could influence parental approach to a child’s asthma management. In this situation, this parent may be reluctant to actually give his or her child these medications if he or she attributes the child’s behavioral difficulties to these medicines. At the same time, the physician is likely to interpret the parent’s behavior as fostering nonadherence.

These results begin to suggest that difficulties within family relationships may be related to difficulties in the parent-physician relationship. However, this relationship is not a straightforward relationship. Conflict in one relationship does not imply conflict in the other relationship. This raises the possibility that a wider spectrum of family process difficulties may be related to difficulties in the parent-physician relationship. Future studies could examine associations between difficulties in the parent-physician relationship and a wider spectrum of family process variables.

We also examined the association between reports of problems in the parent-physician relationship and ratings of medication adherence upon admission. Because physicians had access to this information during the hospitalization, their ratings of their partnerships with parents could be merely a response to poor medication adherence by these families at the time of admission. However, the association was not found to be significant. Therefore, we conclude that physicians are responding to qualities of their relationship with the parent, above and beyond their knowledge of the child’s adherence behavior.

We see the FMSS as having promise for the study of parent-physician partnerships. However, caution is warranted in drawing conclusions from this pilot study. First, 43% of parents approached refused to participate in our study. Negative relationships with staff could have influenced refusal rates. Second, the power of the study is limited due to a small sample size. Therefore, some associations may not have been identified as significant simply due to low power. However, most of the associations identified in this study did not appear to approach significance even while taking into account the low power ($r > .60$ needed for significance, yet observed correlations range from $r = .001$ to $r = .37$). Therefore, it seems less likely that significant associations would be identified in a larger sample. Third, this study needs to be replicated with a larger sample, and the FMSS needs to be examined in relation to other outcome measures including alternative measures of parent-physician interactions, adherence behaviors, and asthma outcome.

**Clinical Implications.** To appreciate the applied significance of these findings, we need to understand the theoretical underpinnings of criticism and emotional overinvolvement. Hooley (1985) has presented an attributional model of criticism and emotional overinvolvement in which the respon-
dent makes attributions about the intentions or causes of the target person’s behaviors that then influence the quality of the interaction between the respondent and the target person. From this perspective, a respondent who has been coded as high on criticism has made the attribution that the target person is “bad” rather than “ill,” and thus they respond to them with increased negative affect. In this way criticism may be a reflection of ongoing family processes that present as a stress for the child (Hooley, 1985). Hooley (1985) has suggested that emotional overinvolvement reflects an unrealistic or exaggerated attribution that the child’s difficulties are beyond his or her control or a reflection of the child’s illness. Therefore, the parent responds by failing to expect age-appropriate responsibilities or behaviors from the child.

In conclusion, the FMSS appears capable of detecting negative partnerships in parent-physician relationships. Further study is needed concerning the psychometric properties of such use of the FMSS as well as the determinants and consequences of such negative partnerships.

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