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Children's Contributions to Pediatric Outpatient Encounters

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ABSTRACT.

Objective. Generally, increasing attention is being paid to the quality of doctor-patient communication. However, children's contributions have been, until now, primarily ignored in communication research, although there are indications that considering their views increases satisfaction and compliance. In the present study, we examined how children contributed to communication during outpatient pediatric encounters and what factors were associated with children's contributions.

Patients. Twenty-one consulting pediatricians videotaped a total of 302 consecutive outpatient encounters.

Design. Multilevel analysis was used to take into account the similarity among encounters with the same pediatrician.

Results. Children's contributions to the outpatient encounters were limited to 4%. Pediatricians directed one out of every four statements to the child. Although pediatricians asked children a lot of medical questions (26%), only a small part of the medical information (13%) was directed at the children. Apart from social talk and laughter, the amount of pediatrician-child communication increased with children's age. Communication with children suffering from disorders of the nervous system seemed to differ from that with children suffering from other diseases. Allowing children more room in the medical visit did not seem to increase the duration of the visit.

Conclusions. Although recent legislation requires children to be adequately informed, in pediatric outpatient encounters information still tends to be directed primarily at the parents. Children do get the opportunity to talk about social and psychosocial issues. Pediatricians may need to acquire similar communication skills to discuss medical-technical issues with the children.

Communication with patients is generally acknowledged as an essential part of patient care. In pediatric health care doctors' communication tends to be directed more to the parent than to the child. In addition, the first studies on doctorpatient communication focused exclusively on the communication between pediatricians and parents. Thus far the nature of the communication with children remains unclear.[1,2] Of course, a lot of medical recommendations have to be performed by the parents. Further, the medical setting reflects

ongoing familial interpersonal relationships that may have relevance for the way patient's complaints are handled and responded to in domestic surroundings.[3] As such, there may seem to be no medical necessity to encourage children's contributions to the medical visit. However, one should realize that a lot of children of school age are quite capable of providing relevant information and feedback about their complaints[4] and seem to be able to understand a lot of medical information.[5] Furthermore, taking children's views into consideration seems to contribute to the effectiveness of the therapeutic relationship in terms of satisfaction and compliance.[5] The reason why a pediatrician's communication is nevertheless still primarily directed at the parents is unknown. It may be that pediatricians do not feel confident about communicating with children or fear that it will take too much time.[6]

The presence of the child will undoubtedly effect both the structure and the content of the interaction. However, because the above-mentioned studies either exclusively reported on the nature of the communication with the parent[2,7–9] or focused on family practitioners instead of pediatricians interacting with children,[4,10] little is known about the nature of the child's contribution in pediatric outpatient visits. The few studies that did pay attention to communication with the child in outpatient care used only small sample sizes.[7,11] The tentative findings from these studies suggest that doctors patterns of communicating with parents differ from those they use with children; they rely on children for information yet provide feedback primarily to parents. One might hypothesize that this information exchange will depend on characteristics of the child (age, sex, diagnosis) as well as the encounter (initial vs follow-up visit, length of the visit). For these reasons the present research addresses the following questions:

1. How much do children contribute to pediatric outpatient encounters?
2. What is the nature of children's conversational contribution?
3. What child (eg, age, sex, diagnosis) or encounter characteristics (length of visit, initial vs follow-up visit) are associated with the communication between children and pediatricians?

METHODS

As a part of a broader study investigating the effects of a communication-training on the communication between consulting pediatricians, parents, and children in general hospitals, 21 pediatricians gave permission for a series of consecutive outpatient encounters to be videotaped. Contrary to practices in the United States, consulting pediatricians in the Netherlands are not primary care providers but medical specialists doing diseasespecific encounters. Patients can only visit a pediatrician after being referred by their family physician. In this paper we confine ourselves to the precourse observations. There were 12 male and 9 female pediatricians with mean ages of 48 and 42, respectively. They had 3 to 25 years of pediatric experience. Approximately one week before the appointment with the pediatrician, parents were informed of the nature of the study and were asked to give written consent to allow recording for research purposes. Patients' chief complaints were classified into various diagnostic categories, according to a recently developed classification of diseases in pediatrics, derived from the International Classification of Diseases, 10th Revision.[12]

Analysis of Communication

The verbal and nonverbal communication between pediatrician, parent and child was measured by four independent raters directly from the video recordings using the CAMERA computer system, which is especially designed for coding behavioral interactions from video recordings.[13]

Verbal Behavior

The verbal communication process was analyzed using an adjusted version of the Roter Interaction Analysis System, which is specially designed to code both doctor and patient communication.[14] This system distinguishes among instrumental or taskrelated and affective or socioemotional verbal utterances by doctors and patients. Instrumental categories refer to those communication aspects that primarily focus on solving problems, such as giving information, asking questions, and counseling in medical or psychosocial topics. Affective categories refer to those aspects needed to establish a therapeutically effective relationship between the interactants, such as giving comfort and reassurance and showing empathy, optimism, concern, and understanding. Based on the findings from earlier studies, the categories were reduced to 16 clusters,[15,16] identical for pediatrician, parent, and child (Table 1). To control for potential differences in lengths of visits, clusters were divided by the total number of utterances.

Nonverbal Behavior

Patient-directed gaze, ie, the time the pediatrician looked directly into the parent's or the child's face, was measured and adjusted for the time the pediatrician was in sight. In addition, the relative duration of pediatrician's affirmative head nods and smiling was measured. Camera angles did not permit coding of nonverbal communication for the parent or the child nor of the direction of the pediatrician's nonverbal behavior.

Interrator Reliability

All four observers coded the same 16 encounters to establish interrator reliability. Interrator reliability was calculated for all clusters with a mean frequency .2%.[17] The overall average pairwise Pearson correlation coefficient was 0.79. Pediatrician clusters had a mean correlation of 0.83 (range, 0.70–0.99) and the average correlation for parent clusters was 0.71 (range, 0.46–0.89). No interrator reliability could be calculated for child clusters because none of these occurred .2%.

The overall interrator reliability for nonverbal communication, ie, the time the pediatrician was in sight, the duration of patientdirected gaze, nodding and smiling, was 0.84 (range, 0.58–0.99).

Analysis

As pediatricians were asked to videotape several encounters, we had to take into account the similarity among encounters by one pediatrician. This exploration required a relatively new statistical method: multilevel analysis.[18,19] Multilevel analysis creates the option of analyzing data at the level of the pediatrician, without disregarding the variance on the patient level. Using the appropriate software for multilevel analysis (MLN-Software, London, England, Institute of Education, University of London), first intraclass correlation coefficients were calculated to investigate whether encounters by one pediatrician had a greater degree of similarity than encounters of different pediatricians. These coefficients reflect the proportion of total variance of an observation that is associated with the class (in our case the pediatrician) to which it belongs.[20] For example (Table 1), a coefficient of .14 for giving reassurances indicates that 14% of the variance in giving reassurances is among pediatricians, whereas the remaining 86% is attributable to other sources. In this case, one must conclude that in terms of giving reassurances the encounters by one pediatrician are more alike than encounters by different pediatricians. Tables 1 and 2 show the intraclass correlation coefficients for all pediatrician behaviors. The highest coefficients were those of the pediatrician asking the parent for understanding (.45), seeking agreement with the parent (.31), indicating their orientation to the parent (.28), and in Table 2 of smiling (.36). This means that the use of these particular communication behaviors depends more on

pediatrician characteristics than, for instance, the provision of medical information or medical counseling. Weighted means and standard errors were calculated for all communication behaviors to take into account the apparent similarity among encounters of the same pediatrician. MLN-Software was also used to explore the association between child-dependent factors and pediatricianchild communication. In addition, we also explored the influence of the rank order (initial vs follow-up visit) as well as the length of the encounter.

[TABLE 1]

[TABLE 2]

RESULTS

Sample Characteristics

The 21 pediatricians videotaped a total of 326 consecutive outpatient encounters (mean 15.5, range, 13–19). In 24 encounters more than one child-patient was present, leaving 302 outpatient encounters for analysis. The 302 encounters had a mean duration of 14.2 minutes (range, 3.4 –59.5). There were 40 (13.2%) initial visits and 262 (86.8%) follow-up visits. The study sample consisted of 180 boys (60%) and 122 girls (40%), their mean age was 5.3 years (SD 6 4.6). In 110 encounters (36%) the child did not verbally participate at all, in 26 encounters (8.6%) the pediatrician did not engage in any verbal communication with the child.

In Fig 1, a distribution of patients' chief complaints is listed. The percentages in Fig 1 show that almost one-third of the patients reported respiratory problems. One out of every nine patients attended the pediatrician either for problems that had their origin in the perinatal period, for behavioral problems or for gastrointestinal problems.

[FIGURE 1]

Conversational Contribution

As the conversational contributions of children, pediatricians and parents are interrelated, each participants' contribution will be attended to in this section. The participants' conversational contribution was measured by the weighted proportion of the total count of utterances during an outpatient visit. In Table 3, these relative contributions are presented both in terms of the overall communication and of the underlying affective and instrumental communication. In addition, the pediatrician's communication is displayed in terms of the total contribution as well as in the proportion directed at the child and the parent separately.

Table 3 shows that, on average, pediatricians' contribution to the encounter was ;60%, mainly by communicating instrumentally. Children's contributions were limited to 4%, divided up proportionally into affective and instrumental statements. One out of every four pediatrician's statements (14.58/59.31) was directed to the child; slightly more of these were affective ones (29%).

[TABLE 3]

Communication Behaviors

More detailed information about the nature of interactants' contributions is presented in Table 4. In this table the communication behaviors are displayed as percentages of the total count of utterances during an outpatient visit. The majority of the affective communication between pediatricians, parents and children seemed to concern social communication, ie, social talk, jokes, and laughter, and showing agreement or understanding. Fifty-four percent [3.94/(3.94 1 3.35)] of pediatricians' social communication behaviors seemed to be directed at the child, in contrast with 18% of their medical statements (medical information, questions and counseling). With respect to information exchange, 26% of pediatrician's medical questions were directed at the child; whereas, the child received only 13% of pediatrician's medical information. Pediatricians directed almost as many psychosocial questions (44%) to the child as to the parent.

[TABLE 4]

Factors Related to Child's Contributions

The factor that was most strongly associated with the communication between pediatrician and child was the child's age. The frequency of pediatrician communication behaviors increased with the child's age, with one exception; pediatricians used the same amount of social behavior regardless of the child's age. The majority of the child communication behaviors seemed to increase with age as well, though no significant relationships were found with the frequency of four least observed child communication behaviors, ie, reflections, psychosocial questions, psychosocial counseling, and disagreements.

Another factor associated with the communication was the rank order of the medical visit, ie, initial versus follow-up visit. If pediatrician and patient had not met before, they both expressed more orientations than when they were already acquainted with each other. In addition, in comparison with initial visits, children expressed less social behavior and less paraphrases in follow-up visits.

Child's sex was the third factor associated with child's contributions. Paraphrases, asking for under- standing, and providing psychosocial information were less frequently observed in girls than in boys.

Finally, there were a few diagnostic categories that seemed to be associated with the pediatrician-child communication. In one diagnostic category, referring to disorders of the nervous system (mostly cases with headache or epilepsy), children seemed to receive more signs of agreement or understanding, more reflections, reassurances, medical questions, and medical advice from their pediatrician when compared with patients in other diagnostic categories. Children diagnosed as having a disorder of the nervous system expressed more concerns, asked more medical questions, and gave more medical and psychosocial information, compared with children suffering other diseases. In another diagnostic category, ie, psychological or behavioral problems, patients were found to express more reflections and psychosocial questions when compared with patients suffering from other disorders.

No significant correlation (r 5 2.04) was found between the relative contribution of the child during the outpatient encounter and the duration of the encounter.

DISCUSSION

The purpose of this study was twofold: to explore the extent and the nature of children's contributions to pediatric outpatient encounters and to gain insight into the factors associated with their contribution.

Verbal communication during the outpatient encounters seemed to be dominated by the pediatrician, which is in agreement with previous studies[7] and with studies investigating other specialists' communications, eg, oncologists[21] and diabetologists.[16,21] In each study specialists' contribution to the encounter is ~60%, regardless of the dyadic or triadic nature of the encounter. This may suggest that the child's participation in the encounter does not occur at the expense of the pediatrician but at the expense of the parent. It may furthermore explain why allowing children room to participate in the encounter does not seem to increase the duration of the encounter.

Overall, children's participation seemed to be small and almost exclusively limited to social talk and laughter and the provision of medical information. In correspondence with previous, tentative, findings we found that although pediatricians asked children a lot of questions, they only directed a small proportion of the information at the child. There would seem to be a contradiction, in that children are considered capable of providing information, yet not sufficiently capable of receiving information. Apparently, pediatricians perceive parents as primarily responsible for education and management.[4] Furthermore, our video recordings showed that parents frequently answered a question that was directed at the child. Pediatricians may have to be encouraged to ask parents more explicitly to let their children do the talking.

Pediatricians do consider children capable to discuss nonmedical aspects. In case of social talk and psychosocial issues, children were more frequently addressed directly by the pediatrician. The observed nonage dependent exchange of social behavior between pediatrician and child is important as social talk is considered to be the first step in establishing a therapeutic relationship that may facilitate further communication.[22,23] As such, the practice of pediatrics can indeed be considered family-centered,[6] implying that both parent and child need to be attended to with respect to medical and psychosocial issues.

Surprisingly, compared with other health problems, disorders of the nervous system displayed a different kind of communication style by both the pediatrician and the child. One might assume that these differences were attributable to pediatrician characteristics. Yet, cases with disorders of the nervous system did not seem to be nested with a small number of pediatricians. Alternatively, these disorders of the nervous system might require both more medical-technical information exchange and more affective attention than other disorders. Whether this specific communication pattern is dictated by the complexity of the diagnosis or by the fact that they have major medical and psychosocial consequences for the child's every day life needs to be sorted out in future studies.

No differences were found in pediatrician communication with female or male children. Yet, compared with girls, boys showed a more active communicative attitude toward the pediatrician during the encounters. These differences could not be explained by the fact that boys had a higher mean age than girls; on the contrary, boys tended to be younger than girls (P 5 .06). Pediatricians are therefore encouraged to encourage the expression of questions and uncertainties in their girl-patients.

A few methodological issues are worth mentioning. Unfortunately, in this study we were not able to code parent or child nonverbal communication nor the direction of the pediatrician's nonverbal behavior. As a result the fact that pediatricians use nonverbal communication differently for parent and child cannot be excluded. One might expect that, in line with the predominance of pediatricians' social behavior toward the child, pediatricians would also direct more nonverbal communication at the child. At least, in very young children, smiling and gazing is often the only possible strategy to put children at ease and to make contact with them. Attention to conditions that might facilitate the recording of nonverbal communication is therefore highly recommended.

Furthermore, our results show less social behavior and orientations in follow-up visits. Apart from the fact that a follow-up visit in itself require less time to socialize and give patient instructions about what is going to happen, these differences probably also result from the fact that pediatricians have twice as much time to spend for initial visit than for follow- up visits. Again, this stresses the importance of being careful not to mix the results of initial and repeat visits, nor to generalize findings from initial and subsequent visits.[16]

As dictated by our data, we explored the degree of similarity between the encounters by the same pediatrician and subsequently calculated weighted means to control for the similarity. This analysis yielded interesting results that have relevance beyond our primary research questions and will therefore be attended to in this section. To our knowledge, there has been no previous attempt to take the similarity among encounters by one physician into account by calculating weighted means. In a previous study, intra-class correlations were calculated to measure the level of nesting in encounters among general practitioners.[24] The correlations in this latter study were much lower when compared with our results, particularly with respect to certain affective communication behaviors, eg, patient-directed gaze and social behavior. Apparently, when compared with general practitioners in these areas, pediatricians are more influenced by general attributes than by the demands of the situation. A possible explanation for this discrepancy is that general practitioners are more familiar with the concept of communication, which has been a central part of the medical curriculum for decades, whereas the curriculum of pediatricians and other medical specialists has, until now, primarily focused on acquiring technicalmedical skills and knowledge. As a consequence, medical specialists may be less familiar with the affective and process sides of the encounter, which is reflected by a more stereotypical behavior on these aspects. Consequently, these stereotyped behaviors may be expected to decrease as a result of a more elaborate communication training. Recently, we developed a training program based on pediatricians' misgivings about interacting with parents and children and on the family-centered concept of pediatrics.[6] At present, this program has been evaluated by comparing the pediatrician's style of communicating before and after training with that of a control group.

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ARE PHYSICIANS INTERCHANGEABLE?

Physicians used to think of themselves as parents, scientists, soldiers, or something else, but in an era of managed care they have come to see themselves largely as conduits of power only, and increasingly as one unit interchangeable with any other. Randomized clinical trials (RCTs) have done the same in holding all physicians as equal in trials, to suggest implicitly that the specific physician does not matter. The placebo effect and the benefit it brings should make us all once again regard physicians as potentially active healing agents, however idiosyncratic and differing their personalities.

HARRINGTON A, ed. The Placebo Effect. Cambridge, MA: Harvard University Press; 1997
Submitted by Student

TABLES AND FIGURES

TABLE 1. Intraclass Correlation Coefficients for Pediatrician Verbal Communication Directed to the Child or the Parent

	Pediatrician → Child Intraclass *r*	Pediatrician → Parent Intraclass *r*
Affective communication		
Social behavior	.20	.21
Agreement	.10	.31
Paraphrases	.04	.16
Reflections	.01	.13
Concerns	.07	.06
Reassurances	.14	.10
Disagreements	.0	.07
Instrumental communication		
Orientations	.10	.28
Ask for understanding	.15	.45
Medical questions	.01	.25
Psychosocial questions	.06	.05
Medical information	.09	.04
Psychosocial information	.05	.09
Medical counseling	.0001	.02
Psychosocial counseling	.03	.07
Administrative	.03	.30

TABLE 2. Intraclass Correlation Coefficients for Pediatrician Nonverbal Communication Behaviors and Length of Visit

	Pediatrician (Overall) Intraclass *r*
Nonverbal communication	
Eye gaze	.26
Head nodding	.16
Smiling	.36
Length of visit	.14

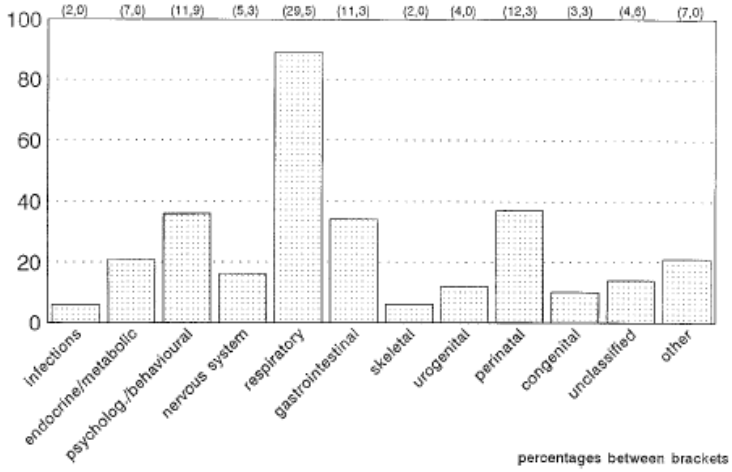

Fig 1. Frequency of primary diagnosis ($N = 302$) in conformity with the classification of diseases in pediatrics (Dutch Organization for Applied Scientific Research, 1997).

TABLE 3. Weighted Mean Proportions and Standard Errors (SE) of Communication Behaviors in 302 Visits

Variable	Interactant	Mean (SE)	Pediatrician → Child	Pediatrician → Parent
Verbal behavior (%)*				
Utterances	Pediatrician (overall)	59.31 (0.53)	14.58 (1.05)	44.73 (0.98)
	Parent	36.64 (0.62)		
	Child	4.05 (0.45)		
		100%		
Affective	Pediatrician (overall)	20.90 (0.65)	6.02 (0.45)	14.88 (0.62)
	Parent	16.77 (0.53)		
	Child	2.14 (0.25)		
		40%		
Instrumental	Pediatrician (overall)	38.47 (0.90)	8.55 (0.74)	29.82 (0.79)
	Parent	19.88 (0.59)		
	Child	1.91 (0.27)		
		60%		
Nonverbal behavior (%)†				
Gaze	Pediatrician	49.78 (2.49)		
Head-nodding	Pediatrician	3.79 (0.49)		
Smiling	Pediatrician	4.18 (0.59)		

* Relative to the total count of utterances.
† Relative to the time the pediatrician was in sight.

TABLE 4. Weighted Mean Proportions and Standard Errors of Distinct Communication Behaviors in 302 Visits

Variable	Pediatrician → Child M (SE)	Child → Pediatrician M (SE)	Pediatrician → Parent M (SE)	Parent → Pediatrician M (SE)
RIAS (%)*				
Affective				
Social behavior	3.94 (0.37)	1.20 (0.17)	3.35 (0.31)	3.50 (0.28)
Agreements	.67 (0.07)	.74 (0.12)	6.64 (0.44)	9.37 (0.41)
Paraphrases	.76 (0.08)	.05 (0.01)	2.36 (0.17)	1.34 (0.07)
Reflections	.11 (0.02)	.00 (0.00)	.43 (0.05)	.02 (0.00)
Concerns	.08 (0.02)	.03 (0.01)	.49 (0.06)	1.52 (0.12)
Reassurances	.45 (0.07)	.009 (0.00)	1.47 (0.10)	.79 (0.06)
Disagreements	.03 (0.01)	.10 (0.02)	.11 (0.02)	.22 (0.04)
Instrumental				
Orientations	3.17 (0.27)	.09 (0.02)	5.76 (0.40)	.76 (0.05)
Ask for clarification	1.32 (0.13)	.05 (0.01)	2.53 (0.27)	.69 (0.04)
Medical questions	1.06 (0.11)	.06 (0.02)	3.08 (0.28)	1.14 (0.09)
Psychosocial questions	.31 (0.07)	.005 (0.00)	.40 (0.06)	.03 (0.01)
Medical information	1.80 (0.31)	1.21 (0.16)	12.46 (0.50)	13.2 (0.61)
Psychosocial information	.23 (0.07)	.40 (0.11)	1.01 (0.19)	3.18 (0.35)
Medical counseling	.46 (0.08)	.01 (0.00)	3.27 (0.26)	.13 (0.02)
Psychosocial counseling	.07 (0.03)	.001 (0.00)	.26 (0.06)	.03 (0.01)
Administrative	1.13 (0.02)	.08 (0.03)	.17 (0.19)	.72 (0.09)

* Relative to the total count of utterances.