

# Video analysis of communication in paediatric consultations in primary care

Patricia Cahill and Alexia Papageorgiou

## ABSTRACT

### Background

There is a paucity of research evidence concerning communication in paediatric consultations between GPs, adults, and child patients.

### Aim

This study was carried out to identify features of the interaction between a doctor, a child patient aged 6–12 years, and their carer in the consultation associated with the child's participation.

### Design of study

A qualitative analysis of video recordings of 31 primary care paediatric consultations was undertaken, using strategies from the methodology of conversation analysis.

### Setting

Primary care, Suffolk, UK.

### Method

NHS GPs from three primary care trusts (PCTs), were invited to participate in this study. Sixteen volunteers from this sample took part.

### Results

Analysis of the interaction in the consultations revealed that the children had little involvement. Children participated when invited to do so, and took more time than adults to answer a doctor's question. An adult carer was less likely to answer on behalf of a child, when they were in a position to see that the doctor's gaze was directed at the child, and the doctor addressed the child by name. Adult carers, who had not voiced their own concerns first, were seen to interrupt doctor–child talk. In consultations where the participants sat in a triangular arrangement, all parties being an equal distance apart, triadic talk was noted.

### Conclusion

Child involvement in the primary care consultation is associated with adult carers being able to voice their own concerns early in the consultation, and children being invited to speak with the appropriate recipient design.

### Keywords

children; communication; consultation; general practice; paediatric; triadic.

## INTRODUCTION

In a substantial proportion of primary care consultations, the patient is a child.<sup>1</sup> However, published research evidence to guide clinicians regarding the communication in these consultations is sparse.<sup>2,3</sup> Children are nearly always accompanied by their parent or adult carer when they visit a doctor. The little evidence that exists on the child's part in medical consultations indicates that the child, although the patient, has a very subordinate role.<sup>2–6</sup> In particular, children do not participate fully in the interaction. Parent, doctor, and child all contribute to this situation, possibly because they are socialised to behave in a way that promotes child non-participation.<sup>7,8</sup>

However, by primary school age many children are likely to be able to participate in their consultations in partnership with their carer and doctor.<sup>9</sup> Children in this age group have shown that they are interested in and wish to understand health issues.<sup>10</sup> When asked, some children complain that they are ignored in their primary care consultations and would like more say.<sup>11</sup>

Involving children in their own health management has been shown to have a beneficial effect on their health outcomes.<sup>12,13</sup> Current government health policy and professional guidelines advocate that children should be involved in their healthcare decisions, in a way that is appropriate for the individual child and carer.<sup>14,15</sup>

A study from the US examined the interaction in the opening part of a paediatric consultation.<sup>16</sup> The

*P Cahill, MSc, DRCOG, DCH, DGM, MRCP, GP, The Norwich Road Surgery, Ipswich. A Papageorgiou, BA, MSc, PhD, consultation skills lecturer, School of Medicine, Health Policy and Practice, University of East Anglia, Norwich.*

### Address for correspondence

Dr Patricia Cahill, The Norwich Road Surgery,  
199 Norwich Road, Ipswich, Suffolk.  
E-mail: patricia Cahill@doctors.org.uk

**Submitted:** 28 November 2006; **Editor's response:** 19 January 2007; **final acceptance:** 24 April 2007.

©British Journal of General Practice 2007; 57: 866–871.

researcher conducting this study found that when the doctor was addressing the child, the parent usually answered. The current study used similar methods to those used in the work by Stivers.<sup>16</sup> A video analysis of the communication process in the paediatric primary care consultations was undertaken. This was done specifically to look for features of the interaction between a doctor, a child in the 6–12 years age group, and their adult carer associated with the child's involvement in the consultation.

## METHOD

### *Study design*

This was a qualitative study using techniques drawn from conversation analysis in order to analyse video recordings of triadic paediatric consultations. Some quantitative observations were also made.

Conversation analysis methodology is now an established method to analyse communication in medical encounters.<sup>17</sup> It is based on what is seen and heard in the interaction. What the participants of an interaction say and do is captured on a recording. This is then transcribed in detail to carefully display the interaction, capturing, for example, relative timing of utterances between the participants. The recordings and the transcriptions are examined for recurrent patterns of interaction rather than, as is more commonly seen in health research, for codes or themes. In a conversation, what one participant says goes on to shape what another participant then says or does. Stable, recurrent, and predictable patterns of interaction are found in conversation between people.<sup>18</sup> The seeking of such patterns and repeated sequences of interaction is central to the type of analysis used for this study.

### *Selection of participants and study site*

Ethical approval was obtained for the study. An invitation was sent to 191 GP principals in three primary care trusts in Suffolk, UK, to participate in the study, together with a request to ask these doctors to extend the invitation to any non-principal doctors in their practices. Thirty-one doctors volunteered, with 16 taking part in the study. The GP participants were selected to represent a diversity of practice types; urban, rural, suburban, training, and non-training.

The sample included 13 principal doctors, two salaried GPs, and one registrar, with lengths of service ranging from 30 years to the registrar in training. Nine of the GPs videotaped two consultations each, five GPs one, and two of the GPs videotaped four consultations.

Thirty-five patients aged 6–12 years and their accompanying adult who attended a surgery being videotaped for the study, were approached and

## *How this fits in*

Children aged 6–12 years old may be involved in the information-gathering parts of the consultation and with social conversation, but not usually in the decision making and planning parts of the consultation. There is very little research evidence available in this area. Children are more likely to participate in their paediatric consultations if the parent or the adult carer can express their concerns early in the consultation and the child is then invited to speak.

invited to take part. Three of the children declined. One video was excluded from the study due to a technical fault. The invitation to participate in this study accompanied a survey concerning a GP's attitude to involving a child in the consultation.

### *Data collection*

Thirty-one GP consultations were videotaped over the period of October 2004–April 2005. The researcher spoke to the participants both before and after the consultation to ask for informed written consent to having a video made of their consultation. The participants were then asked to sign a further consent form allowing the video to be used for research purposes. One, and in some cases two, cameras were used and placed in such a way as to capture as much of the interaction as possible. The researcher was not present during any of the consultations.

The participants reported that the video cameras did not affect their behaviour.

### *Analysis*

The audio part of the video recording was transcribed in full using a version of Jefferson orthography.<sup>19</sup> Non-verbal communication was then added to the transcriptions. An example of an extract of a transcript is shown in Box 1 along with some of the transcription conventions used (Supplementary Box 1). The transcriptions, in tandem with the original video recording, were analysed in their entirety using strategies from conversation analysis.<sup>19</sup>

Conversation analysis involves analysing the data for the following: repeated sequences, looking for recurrent patterns; turn-taking, the order of who was speaking; interruptions and pauses in talk; tone of voice; pitch, pace, and volume of speech; choice of words; and places where different parties' talk overlaps.

Non-verbal communication, gaze, and physical positioning between the parties were also examined. All the consultations were transcribed and analysed by the principle researcher. In order to increase the reliability and validity of the analysis, sections of the data were subjected to co-analysis by a second analyst, and by a data group.

## RESULTS

### Child participation

Children in these consultations were notably quiet. The mean percentage of the total verbal utterances in a consultation made by a child was 5.42% (Standard deviation = 6.89).

### Seating

In the recordings when the doctor sat next to a child without an adult in-between, the child was more likely to participate in the consultation than if the child and doctor were separated by the adult. Some doctors orchestrated the seating. This is exemplified in the following consultation. (An excerpt from the transcription of this consultation is shown in Supplementary Box 2).

In this consultation, the doctor directs a father and son to their respective seats when they enter the consulting room. The doctor sits in a triangular arrangement with the adult and the patient and triadic conversation occurs. Towards the end of the consultation, the doctor offers the child and his father the option of antibiotics. The doctor is able to easily turn his head from the parent to the child ensuring they can all participate in the discussion. When the doctor was sitting equidistant from the adult and child in a triangular arrangement as here, and in three of the other consultations in the study,

the child participated more than when seating was in a linear arrangement.

It is reported elsewhere that doctors often talk to children using a high-pitched singsong type of speech that has been described as 'motherese'.<sup>20</sup> Of note in this sequence was that the doctor's voice sounded the same when talking with the parent and the child. In this study, 'motherese' was not associated with triadic talk in the consultations recorded.

### Interruptions

In 26 of the consultations the adults were able to express their concerns at the outset, either because they volunteered this information, or the child, as occurred in nine of the consultations, when offered an opening turn by the doctor, delegated the turn to the adult by either turning to them or asking them. In these consultations, when the doctor then engaged with the child later on, the adult carer did not interrupt.

In five of the consultations the doctor invited the child to explain the reason for their attendance, which the child accepted, and the child and the doctor then went on to converse. In these interactions, analysis of the turn-taking patterns revealed that the adults interrupted the doctor and the child's talk until the adult was able to voice their concerns and the consultations reverted to a doctor-adult conversation. In all examples where the adult had not expressed their concerns early in the consultation, the adult interrupted any doctor-child dialogue. This 'interrupting' is illustrated in the consultation transcription excerpt shown in Box 1.

In Box 1 the doctor is holding the consultation initially with the child. He looks at the child and uses her name. The child makes a minimal response to the first open question in line 1, but can give an answer to the more closed question in line 3. The mother reveals that she has brought the child for this consultation because a doctor the child had seen previously had reportedly said that if the child's skin condition did not resolve, the child would be referred to a dermatologist. Up to line 6, the conversation is between the doctor and the child; in line 6 the mother takes the opportunity to break in to have her say when there is a slight pause created by the doctor drawing breath. She speaks quickly to avoid the likelihood of interruption before she finishes talking.

When she has stated that she was hoping for a referral, the doctor returns to asking the child about the history. Later in the consultation he asks how long the problem has been going on (line 7). The mother interrupts to upgrade the child's answer concerning the length of time the problem has

### Box 1. Excerpt of a consultation to illustrate adult interruption of doctor-child dialogue.

1. d. ok now I've got you on the computer now (0.2) how are you doing ...?  
*Doctor smiling, looking at the child, mother looking at doctor.*
  2. c. (3.0) hhh e:s
  3. d. yer ::: so (.) um have you come about: your skin again? *Child smiling at the doctor. Doctor glances back at the computer.*
  4. c. (2.0) yer = *Doctor looks at child, glances at mother and back to child.*
  5. d. = eh •hhhh° °hhhh
  6. a. <dr. brunell said after (.) >2 weeks we may get her referred now cause 'h still the same thing again =
- Lines of transcription omitted.
7. d. and how long have you had it like that now? *Doctor glances at computer, child glances at mother.*
  8. c. (1.0) mm (( Laugh )) (.) for quite a few w[eeeks° °]
  9. m. .° ° [months] (( laugh ))
  10. d. yer
  11. c. (0.5) months *child smiling and looking at mother.*

*'hhh = Audible inhalation; hhh = Audible exhalation; : = Extended sound; ? = Rising inflection; ° ° = Talk is quieter than the surrounding talk; < > = Talk is faster than the surrounding talk; (=) = Latched utterance, no interval between utterances; [ ] = Beginning and end of overlapping talk; (.) = A pause of less than 0.2 seconds; (0.0) = Silence measured in seconds and tenths of seconds; Italic writing = non-verbal actions.*

persisted from weeks to months. The mother may be using phrasing in a way that obliges the doctors to take the problem seriously.

In line 11 the girl changed her answer to the doctor's question to agree with her mother's version. A child changing her answers in this way was a recurring observation in the consultations we analysed. Children were also more likely to answer 'closed' questions, those inviting a narrow selection of responses (for example, line 3 and line 7), with greater ease, than 'open' questions, where a wide range of responses are possible, for example, line 1.

The tendency of an adult carer interrupting doctor-child talk until the adults concerns are expressed, was seen throughout the study. Supplementary Box 3 provides a further example of this.

### *Inviting the child to speak*

The children in these video recordings did not initiate talk, but rather waited for an invitation from an adult. The children responded using verbal or non-verbal means to a doctor's question, if a question was directed to them using their name and the doctor looked at them. This is illustrated in the excerpt of the consultation above, as well as in the consultation transcription excerpts shown in Supplementary Boxes 3 and 4.

### *Switching pause*

In speech there is a pause after a question is asked. When this results in a change of speakers, the term a 'switching pause' can be used. Previous research has shown that in children, the switching pause is longer than for an adult.<sup>21</sup> This study confirmed this finding. The adults frequently answered for the child, possibly because the child was taking too long. In the recordings, the adult carers were less likely to answer a question for a child if they were in a position to see that the doctor's gaze was directed at the child. If the adult answered a question that had been directed at the child, and then a subsequent question was addressed to the child with the doctor continuing to direct his gaze at the child, the adults in these examples did not answer, and instead let the child do so.

### *Children's world*

In the consultations there were examples of children answering doctor's questions in terms of the child's world of school and family. This was exemplified in a consultation with a mother and a 6-year-old patient complaining of earache. (Supplementary Box 4). In this example the doctor asks the child to formulate his reason for attendance in line 1. The doctor waits 6 seconds for an answer. The mother indicates that she

realises that the doctor wants the child to answer, so she waits to speak until asked to do so by the child.

The mother then explains her concerns and the doctor goes on to take up the discussion of the problem with the child successfully. The child tells him that his pain started in art class at school. The child and doctor interact with the child answering the doctor's questions. During this part of their discussion, the doctor talked to the child in the same tone of voice and pace that he used with the mother.

The doctor then asks the child which ear was causing the pain. The child answers the question in line 5 of the transcription excerpt, with 'year 4' (the words 'year' and 'ear' could not be distinguished on the tape).

This answer made sense in the child's world as he had told the doctor that the problem had started while he was at school. From the doctor's point of view, ear infections can affect hearing. The doctor indicated that he believed the child has heard the word year instead of ear because of a hearing problem. However, as the child's answer was sensible, there was no reason to assume he was deaf. Once the child had given his 'year 4' answer, the doctor finished his talk with him. The doctor went on to carry out the consultation with the child's mother.

## **DISCUSSION**

### *Summary of main findings*

This study was carried out to identify features of the interaction in the primary care paediatric consultation associated with the participation of the child. Like previous studies, a low level of participation by children in the sample was found. This study showed that these children participated more in the consultation when their parents or adult carers had expressed their own concerns early in the consultation, and the child was then actively invited to take part, particularly with using the child's name.

### *Strengths and limitations of the study*

The strength of this study was that the data came from a diverse collection of consultations and the data collected was 'naturally occurring', meaning it was derived from real consultations. However, the study is set in one part of the UK and there is considerable sample bias as this is a sample of volunteers. There is also a bias as the GP participants had all taken part in the survey study. The participants' knowledge of involvement in research may have affected their behaviour in the consultation.

### *Comparison with existing literature*

In conversation, usually only one person speaks at a time.<sup>18</sup> In triadic conversation, when the current speaker finishes saying something this leaves two

**Table 1. The study's findings summarised: factors in the interaction between the doctor, child and adult that were seen to be associated with child participation.**

- ▶ The child sitting close to the doctor without an adult between them.
- ▶ The adult being able to express their concerns early in the consultation.
- ▶ The doctor invites the child to speak using the appropriate recipient design.
- ▶ This 'recipient design' when addressing the child includes:
  - Using the child's name.
  - The doctor looking at the child.
  - Waiting to see that the adult can see the doctor is looking at the child
  - Allowing a 'long' pause after a doctor's questions.
- ▶ When an adult answers for the child, if another question is asked with the doctor maintaining gaze towards the child, this appears to facilitate the child answering the second question.
- ▶ The doctor using the same tone of voice when addressing the parent and also with the child, which was noted in episodes of triadic talk.
- ▶ Awareness that the parents or adult carers may use phrasing that encourages the doctor to take the problem seriously.
- ▶ An awareness also that the children's answers to the doctor's questions may change to 'agree' with their adult carer's answers, and that children sometimes appear to express themselves in terms of their world.
- ▶ Children seem to be able to answer closed questions more easily than open ones.

people who could possibly take the next turn. The current speaker can nominate the next person to speak by addressing the recipient in such a way that they know they are meant to speak. This can be termed 'recipient design', for example, by using a person's name.<sup>18</sup> This study indicates that the child and the adult in the triad know that a turn is meant for the child, when the child is clearly addressed using the appropriate recipient design.

If no next speaker is nominated by the current speaker to take the next turn, there is a tendency for the speaker who has just finished speaking to speak again in the next turn when the current speaker has finished; that is, for a two-way conversation to ensue.<sup>18</sup> This can lead to the assumption that if the initial reason for coming to the doctor is stated by the child, it is likely that the child will have more say in that consultation. Some of the doctors taking part in this study may have unconsciously attempted to maximise child participation by actively trying to involve the child at the outset of the consultation.

However, in this sample of consultations if a doctor successfully engages with a child and interaction ensues between the doctor and the child without the adult concerns having being voiced, the parent/carer interrupts. In these instances, the consultations reverted to an adult-doctor conversation, with the child being excluded.

### Implications for clinical practice

Factors associated with child participation in the consultation as observed in the recordings made for this study are summarised in Table 1.

Many doctors will unconsciously interact with children in the methods outlined in Table 1. Specifically, the study showed that to promote child involvement, doctors should invite the child to participate and allow the child time to answer questions. It also shows the importance of getting all the participants' agendas for the consultation out at the beginning, and that in order to let the child speak without interruption, the parent or the adult carer need to be allowed to express their concerns early on in the consultation. It cannot be assumed that every child in the 6-12 year-old age group is going to necessarily want, or be ready, to participate in their primary care consultation.<sup>15</sup> Current policy advocates clinicians including children in the consultation, in a way, however, that is sensitive to the individual child.<sup>14,15</sup>

There are still many unanswered questions in this field. It is known that some children would like more involvement in their consultation.<sup>11</sup> Further work could be carried out on children's views on how doctors should communicate with them in primary care. This study looks at a small group of doctors and could be replicated on a larger sample, with other health professionals and in other settings. This could also provide an impetus for building educational packages with skills that increase children's involvement in primary care consultations.

### Supplementary information

Additional information accompanies this article at <http://www.rcgp.org.uk/bjgp-supinfo>

### Funding body

Not applicable

### Ethics committee

This study was granted ethical approval by the Suffolk Local Research Ethics committee (reference 04/Q0102/19)

### Competing interests

The authors have stated that there are none

### Acknowledgements

This study would not have been possible without the participants; we would like to thank the doctors, children, and adults who gave so generously of their time. We would also like to thank Professor Paul Chilton for his pivotal involvement in this research project. He gave so generously of his time to co-supervise the this project, participate in the design the study, analyse data, check the transcriptions, and read drafts of this paper

### Discuss this article

Contribute and read comments about this article on the Discussion Forum: <http://www.rcgp.org.uk/bjgp-discuss>

### REFERENCES

1. Saxena S, Majeed A, Jones M. Socioeconomic differences in childhood consultation rates in general practice in England and Wales: prospective cohort study. *BMJ* 1999; **318**(7184): 642-646.
2. Tate K, Meeuwesen L. Doctor-parent-child communication. A (re)view of the literature. *Soc Sci Med* 2001; **52**(6): 839-851.



3. Cahill P, Papageorgiou A. Triadic communication in the primary care paediatric consultation: a review of the literature. *Br J Gen Pract* 2007; **57**: 904–911.
4. Aronsson K, Rundström B. Child discourse and parental control in pediatric consultations. *Text* 1988; **8**: 159–189.
5. Tate K, Meeuwesen L. 'Let Mum have her say:' turn taking in doctor–parent–child communication. *Parent Educ Couns* 2000; **40**(2): 151–162.
6. Wassmer E, Minnaar G, Abdel Aai, *et al*. How do paediatricians communicate with children and parents? *Acta Paediatr* 2004; **93**(11): 1501–1506.
7. Tate K, Elbers Ed, Meeuwesen L, Bensing J. Doctor–parent–child relationship: a 'pas de trios.' *Patient Educ Couns* 2002; **48**(1): 5–14.
8. Tate K, Meeuwesen L, Elbers E, Bensing J. 'I've come for his throat': roles and identities in doctor–parent–child communication. *Child Care Health Dev* 2002; **28**(1): 109–116.
9. Alderson P, Montgomery J. *Health care choices, making decisions with children*. London: Institute for Public Policy Research, 1996.
10. Borland M, Laybourn A, Hill M, Brown J. *Middle childhood. The perspectives of children and parents*. London: Jessica Kingsley, 1998.
11. Boylan P. *Children's voices project: feedback from children and young people about their experience and expectations of health care*. National Health Service England and Wales: Commission for Health Improvement, 2004.
12. Lewis C, Rachelefsky G, Lewis M, *et al*. A randomized trial of A.C.T. (asthma care training) for kids. *Pediatrics* 1984; **74**(4): 478–486.
13. Staab D, Diepgen T, Fartasch M, *et al*. Age related, structured educational programmes for the management of atopic dermatitis in children and adolescents: multicentre, randomised controlled trial. *BMJ* 2006; **332**(7547): 933–938.
14. Department of Health. *National Service Framework for children, young people and maternity services*. London: Crown Copyright, 2004.
15. BMA (British Medical Association). *Consent, rights and choices in health care for children and young people*. London: BMJ books, 2001.
16. Stivers T. Negotiating who presents the problem: next speaker selection in pediatric encounters. *J Commun* 2001; **51**(2): 252–282.
17. Drew P, Chatwin J, Collins S. Conversation analysis: a method for research into interactions between patients and health-care professionals. *Health Expect* 2001; **4**(1): 58–70.
18. Sacks H, Schegloff E, Jefferson G. A simplest systematics for the organization of turn-taking for conversation. *Language* 1974; **50**(4): 696–735.
19. Ten Have P. *Doing conversation analysis: a practical guide*. London: Sage, 1999.
20. Tannen D, Wallat C. Doctor–mother–child communication: linguistic analysis of a paediatric interaction. In: Fisher S, Todd AD, eds. *The social organisation of doctor–patient communication*. Washington DC: Centre for Applied Linguistics, 1983; 203–219.
21. Garvey C, Berninger G. Timing and turn taking in children's conversations. *Discourse Process* 1981; **4**: 27–57.