

# Communication between South Asian patients and GPs: comparative study using the Roter Interactional Analysis System

Richard D Neal, Nasreen Ali, Karl Atkin, Victoria L Allgar, Shahid Ali and Tim Coleman

## ABSTRACT

### Background

The UK South Asian population has poorer health outcomes. Little is known about their process of care in general practice, or in particular the process of communication with GPs.

### Aim

To compare the ways in which white and South Asian patients communicate with white GPs.

### Design of study

Observational study of video-recorded consultations using the Roter Interactional Analysis System (RIAS).

### Setting

West Yorkshire, UK.

### Method

One hundred and eighty-three consultations with 11 GPs in West Yorkshire, UK were video-recorded and analysed.

### Results

Main outcome measures were consultation length, verbal domination, 16 individual abridged RIAS categories, and three composite RIAS categories; with comparisons between white patients, South Asian patients fluent in English and South Asian patients non-fluent in English. South Asians fluent in English had the shortest consultations and South Asians non-fluent in English the longest consultations (one-way ANOVA  $F = 7.173$ ,  $P = 0.001$ ). There were no significant differences in verbal domination scores between the three groups. White patients had more affective (emotional) consultations than South Asian patients, and played a more active role in their consultations, as did their GPs. GPs spent less time giving information to South Asian patients who were not fluent in English and more time asking questions. GPs spent less time giving information to South Asian patients fluent in English compared with white patients.

### Conclusions

These findings were expected between patients fluent and non-fluent in English but do demonstrate their nature. The differences between white patients and South Asian patients fluent in English warrant further explanation. How much of this was due to systematic differences in behaviour by the GPs, or was in response to patients' differing needs and expectations is unknown. These differences may contribute to differences in health outcomes.

### Keywords

communication; ethnic minorities; fluency; general practice.

## INTRODUCTION

There are three main purposes of medical communication: to create good interpersonal relationships; to exchange information, and to make treatment related decisions.<sup>1,2</sup> Good communication is a key element of successful consultations between patients and doctors and there is systematic review evidence that many elements of communication are related to positive outcomes in terms of physiological measurements, adherence to treatment, functional status, satisfaction with care, quality of life, and evaluations of health status.<sup>1,5</sup> Poor communication is the most common source of dissatisfaction with medical care, and most diagnoses are made from history alone.<sup>6</sup>

The South Asian population in the UK have poorer health than white patients<sup>7</sup> and there is a growing body of evidence to demonstrate that, compared with white patients, South Asian patients' experience of health care is different. South Asians use their GP in different ways compared with white patients and may have different outcomes to their consultations,<sup>8</sup> in addition, their assessments of primary health care are lower.<sup>9</sup>

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## How this fits in

It is well established that South Asian populations in the UK have poorer health outcomes and use primary care services differently to the white population. The findings from this study show differences between South Asian and white patients in their patterns of communication with their GPs. Some of these differences persist even when fluency in English is taken into consideration. These differences may contribute to the differences in health outcomes and warrant further study.

South Asian patients are more likely to be frequent attenders,<sup>10</sup> yet report more difficulty in accessing primary care, and dislike telephone consultations and out-of-hours care.<sup>11</sup> Compared with white patients, South Asian patients are less likely to have psychological problems recognised,<sup>12</sup> and are less likely to receive successful drug treatment for depression.<sup>13</sup> GPs hold less positive attitudes towards South Asian patients who are perceived to need longer consultations, be less compliant, and make excessive and inappropriate use of health services.<sup>14</sup> Poor communication is likely to be an important factor relating to the health outcomes and experiences of health care for members of the South Asian community. Effective communication may be impeded by a poor understanding of cultural differences, language and other barriers related to class, status, sex and age; barriers to communication are, therefore, more than language specific.

While there have been several landmark studies of communication within general practice consultations, few studies have examined cultural factors,<sup>15</sup> and consultations between South Asian patients and GPs have not been widely explored. Most literature concerning the consultations of South Asian patients focuses on access to, use of, and outcomes of health care, rather than what actually happens within consultations.<sup>16</sup> The aims of this study were to compare the ways in which white and South Asian patients communicate with white GPs. Secondary aims were to determine the effect of fluency on South Asians patients' communication, and to establish whether the perceived differences (if they exist) between white and South Asian patients' experiences of health care can be measured directly. The findings will demonstrate whether differences in the process of care include differences in the patterns of communication; this in turn might partially explain differences in health outcomes. Given that there are about 55 million general practice consultations with South Asian patients in the UK every year, this is clearly of importance.

### METHOD

We undertook an observational study, applying the Roter Interactional Analysis System (RIAS) to

videotaped recordings of general practice consultations.<sup>17</sup> We chose to use video rather than audio because video recording captures all modalities of the interactions between participants.<sup>18,19</sup> Some aspects of data collection in this study have previously been reported.<sup>20</sup>

### Recruitment of GPs

White GPs whose practices were located within areas of high South Asian population (identified using census data and ward data) were approached, informed about the aims of the study, and asked to participate. Snowballing methods were also used to identify other GPs.<sup>21</sup> We recorded surgery consultations with the same GP over a period of time that varied from 1 week to 3 months to allow for any differences in behaviour. We aimed to record as many as possible of each GP's consultations on each day that we were conducting fieldwork. Five of the practices were located in Bradford, two in Keighley, with one each in Shipley and Leeds. Six were training practices. In two of the practices, two doctors participated in the study. Of the 11 participating doctors, five were men, and six were women; five were members of the RCGP; and they ranged in age from 44 to 58 years.

### Patient recruitment and data collection

Patients recruited were aged 20–60 years, either white or South Asian, and fully registered for General Medical Services. With the assistance of reception staff and interpreters (where appropriate), eligible patients were identified and informed consent sought using the appropriate community language with multilingual patient information sheets and consent forms.<sup>20</sup> NHS interpreters were used in two practices that had significant numbers of patients speaking Pahari (sometimes referred to as Mirpuri, and a Punjabi dialect spoken in Azad Kashmir from where the majority of migrants in some practices originated from). Data were recorded from patients regarding self-reported ethnicity, religion, how long they have been in the UK, age and sex, and fluency in English (N Ali, unpublished data, 2003).<sup>20</sup> There is a great debate about using the term 'white' when describing an individual's ethnic origin,<sup>8</sup> we used a self-reported 'tick-box' definition.

### Defining fluency in English

Difficulties arise in both the concept of defining what is meant by fluency, and in determining whether people are fluent or not.<sup>22</sup> Hence there was no standard way of defining fluency in English that we could have used for this study. We defined fluency as the 'use of English to a standard that communication within the consultation is not impeded at all by language use', and divided this

further into three dimensions: speaking, understanding, and understanding medical language. Participants were asked: 'How good are you at understanding/speaking/reading/writing/ordinary everyday English/understanding the technical medical language your GP uses?', with 'very good', 'good', 'average', 'some' or 'very little', as response options.

GPs and the researcher completed similar sheets after the consultation. The levels of agreement between patient/GP/researcher for the understanding, speaking and technical language were explored using the  $\kappa$  statistic. A combination of this, how often each group over- and underestimated the scores of other groups, and pragmatic decisions regarding numbers informed the process of dividing the south Asian sample into a 'fluent' and 'non-fluent' sample for the purposes of the main analysis.

It was decided to use the patient's self-reported level of understanding as the marker for fluency, dividing between those who answered 'very good', 'good', or 'average', with those who answered 'some' or 'very little.' This was because of the high levels of agreement on the 'understanding' variable with the other variables and between the raters. Pragmatically, it is the concept that seemed to underpin the notion of fluency best and had validity with the other raters (N Ali, unpublished data, 2003).

### **Roter Interactional Analysis System (RIAS)**

RIAS is a well-established analytical tool, which categorises communication into a number of discrete factors (Box 1). It captures both 'cure' (for example: history taking and information giving) and more affective aspects of communication (for example: showing concern for or empathy with patients). It is suitable for analysing and describing medical encounters in clinical settings, can be used to assess both verbal and non-verbal communication, and has been used worldwide. Elements of speech (by doctors, by patients, and third parties such as an interpreter) are broken down into 'utterances' (defined as 'the smallest discriminable speech unit to which a classification can be assigned'), and each utterance is classified into one of 34 discrete and mutually exclusive categories.<sup>17,23</sup>

An abridged version of the coding scheme, using 16 discrete categories, was used because of greater reliability between raters without loss of micro-detail, and because it is quicker to administer.<sup>15</sup> All verbal communication, in English, between patients and GPs, and between others present in the consultation and GPs, was coded. This included data from trained interpreters, family members or patients' advocates who acted as translators. RIAS coding was performed manually. We adhered to the definitions of codes as described in the RIAS manual.<sup>17</sup> Coding decisions and difficulties were discussed between the researchers at intervals throughout the study. Videotaped consultations were timed using a stop clock at the beginning and end of each consultation while watching the tapes; the start was defined as the point where the GP first acknowledged the patient, and the finish as the point where the communication ended and the patient got up to leave the room.

### **Data analysis**

All data were coded and entered into SPSS version 11 for analysis. Data checks were performed at various stages. Descriptive statistics were undertaken, along with the appropriate statistical tests. We compared three groups of patients: 'white' patients (who were all fluent in English), South Asian patients fluent in English and South Asian patients not fluent in English. We used white patients as a comparison group, reflective of the general population, although we are aware that 'white' can be a rather vague category, potentially comprising several different ethnic groups.

### **Consultation length**

Median consultation lengths were determined for the three groups and compared using one-way ANOVA. In order to make the findings more comparable with the literature, we also report mean consultation length.

### **RIAS coding**

*Inter-rater reliability.* The process of checking inter-rater reliability for the RIAS coding was based upon the approach taken by the tool's developers (Debra Roter, personal communication, 2001).<sup>1</sup> Two of the researchers independently coded 18 random consultations, and the results of these were compared

#### **Box 1. Composite categories from the original RIAS categories practice characteristics.**

| Process                 | Affective          | Content                        | None       |
|-------------------------|--------------------|--------------------------------|------------|
| 1. Social behaviour     | 2. Agreement       | 10. Asks questions — medical   | 16. Others |
| 3. Paraphrase           | 5. Showing concern | 11. Asks questions — social    |            |
| 4. Verbal attention     | 6. Reassurance     | 12. Gives info — medical       |            |
| 8. Giving direction     | 7. Disagreement    | 13. Gives info — social        |            |
| 9. Asking clarification |                    | 14. Counsels/directs — medical |            |
|                         |                    | 15. Counsels/directs — social  |            |

**Table 2. Consultation length (minutes) and verbal domination scores.**

|                     | All sample | White      | South Asian | South Asian |
|---------------------|------------|------------|-------------|-------------|
|                     |            |            | Fluent      | Non-fluent  |
| <i>n</i>            | 183        | 100        | 51          | 29          |
| Consultation length |            |            |             |             |
| Mean                | 8.68       | 8.32       | 7.75        | 11.25       |
| Median              | 8.10       | 7.65       | 7.43        | 11.35       |
| Range               | 1.03–25.30 | 1.03–25.30 | 1.67–18.08  | 1.67–19.00  |
| Verbal domination   |            |            |             |             |
| Median              | 0.77       | 0.78       | 0.75        | 0.74        |
| IQR                 | 0.77–0.91  | 0.67–0.92  | 0.66–0.94   | 0.63–0.84   |

IQR = interquartile range.

in terms of the total number of codes applied; verbal domination scores for each consultation (see below); and Pearson's correlation coefficient for each of the individual RIAS categories where the mean number of codes per consultation was greater than two. K values were not calculated because many of the codes had no data.

**Verbal domination.** The RIAS can be used to measure 'verbal domination', a simple, summary measure that indicates the overall level of patients' participation in consultations by expressing patients' total speech time as a fraction of physicians'. Because of the presence of third parties in some consultations, and the inclusion of their communication in the RIAS coding, the standard measure of 'verbal domination' scores (total patient utterances/total GP utterances),<sup>17</sup> was not sufficient to reflect the contribution of third parties. It was not possible to separate the roles of third parties (varying from professional translator to a relative saying the occasional word), hence we calculated verbal domination scores as: verbal domination scores = (total patient utterances + total third party utterances) / total GP utterances. Levels of verbal dominance in the three groups were compared using one-way ANOVA.

**Analysis of composite RIAS categories.** Individual RIAS categories were combined to form 'composite categories' according to standard RIAS procedure (Table 2). These composites represent three different aspects of medical communication that can be considered important in their own right. 'Affective' communication is that which reflects emotion, the 'content' category includes communication that is necessary for the medical tasks of the consultation (for example: giving advice and asking questions in history taking) and the 'process' category reflects conversation that is intended to facilitate the process of history taking. Medians and inter-quartile ranges were calculated for each category, for each of the three patient groups, and for GP, patient and third party codes.

**Analysis of each RIAS category.** Comparisons between the three patient groups were undertaken using the Kruskal–Wallis test for GP, patient and third party codes.

**Statistical significance.** There has been much debate that a more stringent criterion be used for statistical significance than the conventional  $P < 0.05$ . There are tests available that can be used to make adjustments for multiple testing, such as Bonferroni adjustments. The aim is to reduce the chance of making a type I error. However, adjusting for statistical significance for the number of tests that have been performed on the data can create more problems than it solves. The main weakness is that the interpretation of a finding depends on the number of other tests performed. The likelihood of a type II error is also increased, so that truly important differences are deemed not significant. Hence our approach has been to describe what was done and why, and to discuss the possible interpretations of each result in order to enable the reader to reach a reasonable conclusion without the help of adjustments.

## RESULTS

### Number and description of patients invited to participate and consent rates

Two hundred and sixty patients were invited to participate, and provided biographical data (whether or not they consented to have their consultation recorded). Of these, 201 (77.3%) patients provided consent for video-recording. Differences in consent rates between ethnic groups and by fluency in English have previously been reported.<sup>20</sup>

### The sample

Of the 201 patients who consented, consultations were recorded for 183; this included one person with two consultations. 'Third party' data were coded in 43 consultations. Of these, 26 were professional interpreters, five were spouses, five were their children, five were other family members, one was a care worker, and one the researcher. Out of the total, 101 consultations were with white patients, and 82 with South Asians (71 Pakistanis, 8 Bangladeshis, 2 Kashmiris and 1 Indian). Seventy-nine patients were Muslim, 55 Church of England, 20 Catholic, 12 'none' and 8 'other': one of each of the six religions, and three missing. There were 121 women and 62 men, and the mean and median ages of the patients were 37.55 and 37.5 years with a standard deviation of 12.3 years. Of the 82 South Asians: 65 were women and 17 were men; 51 were 'fluent' in English and 29 regarded themselves as 'non-fluent' (two were unclassifiable due to missing data); and the mean and median ages were 33.59 and 31.5 years with a standard deviation of 11.6 years.

### Consultation length

There were marked differences in consultation lengths between the three groups, with South Asians fluent in English having the shortest consultations and South Asians non-fluent in English having the longest consultations (one-way ANOVA  $F = 7.173$ ,  $P = 0.001$ ) (Table 2).

### RIAS coding

*Inter-rater reliability.* One rater had a tendency to code more utterances using RIAS categories and overall attributed 5.2% more codes (total 2011 versus 1911 codes) to utterances than the other, but this was similar across consultations and verbal domination scores were similar for both raters. We were able to calculate Pearson's coefficient for 12 of the codes, these values were 0.515 (GP – social behaviour), 0.632 (patient – social behaviour), 0.755 (GP – giving directions), 0.887 (patient – asks questions medical), 0.940 (GP – asking clarification), 0.947 (GP – agreement), 0.978 (GP – counsels / directs medical), 0.979 (GP – gives info medical), 0.979 (patient – agreement), 0.984 (patient – gives information medical), 0.993 (GP – asks questions medical), and 0.999 (other – gives information medical).

*Verbal domination.* There were no significant differences between verbal domination scores for the three groups (one-way ANOVA  $F = 1.301$ ,  $P = 0.275$ ) (Table 2).

*Analysis of composite RIAS categories.* Table 3 shows that consultations between white GPs and white patients contain more affective (or emotional) communication than others. Also both patients and GPs appear to take a more active role in these consultations as indicated by the greater amount of communication in the patient and GP content categories. As expected, non-fluent South Asian patients' consultations contain more communication (affective and content) between third parties and doctors. This undoubtedly reflects the role that translators and relatives have in consultations between non-fluent South Asian patients and white doctors. Additionally, white patients played a more active role in their consultations (greater patient content) as did GPs (greater GP content). As expected, third parties played a greater role in the consultations of non-fluent South Asian patients as this groups' consultations showed significantly more 'other content' and 'other affective' communication.

*Analysis of individual RIAS categories.* Supplementary Table 1 gives us an indication of where the differences in these consultations actually lie. This demonstrates

the relative absence of direct communication between white GPs and non-fluent South Asian patients and also indicates the specific areas where communication patterns differ greatly between these groups. GPs ask most questions in consultations with non-fluent South Asian patients but also spend the smallest amount of consultation time giving information to this group. White GPs also spend less time giving information to fluent South Asian patients than to white patients. The difference in affective behaviour between consultations is mainly due to more agreement between white doctors and white patients.

## DISCUSSION

### Summary of main findings

This is the first study of its kind that we are aware of; no other work has focused on communication between white GPs and South Asian patients in the UK. Our main findings were that South Asian patients who were not fluent in English had longer consultations than 'white' patients, who had longer consultations than South Asian patients who were fluent in English. Verbal domination scores were similar for the three groups of patients. There were considerable differences between the three groups for both individual and composite categories both with, and without, adjustment to account for confounders. The most striking finding was the significant differences across all of the 'content' categories, with various of the 'process' and 'affective' categories also showing significant differences. The content categories predominantly covered communication relating to the 'medical' parts of the consultations (asking questions, giving

**Table 3. Composite RIAS categories – medians and Kruskal–Wallis test.**

| RIAS combined category | White           | South Asian fluent | South Asian non-fluent | Kruskal–Wallis |            |
|------------------------|-----------------|--------------------|------------------------|----------------|------------|
|                        | Median (IQR)    | Median (IQR)       | Median (IQR)           | $\chi^2$       | $P$ -value |
| <b>Process</b>         |                 |                    |                        |                |            |
| Patient                | 3 (2–6.75)      | 3 (1–4)            | 1 (0–2)                | 38.158         | <0.001     |
| GP                     | 14 (10–20)      | 13 (8–22)          | 10 (7–22)              | 1.428          | 0.490      |
| Other                  | 0 (0–0)         | 0 (0–0)            | 1 (0–2)                | 56.900         | <0.001     |
| Total                  | 19 (14–26.75)   | 18 (11–24)         | 14 (8.5–23)            | 3.908          | 0.142      |
| <b>Affective</b>       |                 |                    |                        |                |            |
| Patient                | 6 (3–9.75)      | 2 (0–5)            | 0 (0–1)                | 46.894         | <0.001     |
| GP                     | 4 (2–7)         | 2 (1–3)            | 2 (1–3.5)              | 17.198         | <0.001     |
| Other                  | 0 (0–0)         | 0 (0–0)            | 0 (0–4.5)              | 39.195         | <0.001     |
| Total                  | 10.5 (6–15.75)  | 4 (3–9)            | 5 (2–11)               | 23.128         | <0.001     |
| <b>Content</b>         |                 |                    |                        |                |            |
| Patient                | 25 (17–36.75)   | 21 (10–36)         | 0 (0–6.5)              | 39.936         | <0.001     |
| GP                     | 30 (19–39)      | 23 (14–36)         | 29 (22.5–40)           | 4.326          | 0.115      |
| Other                  | 0 (0–0)         | 0 (0–0)            | 19 (11–31)             | 85.515         | <0.001     |
| Total                  | 58.5 (36–80.75) | 50 (33–69)         | 57 (40.5–75)           | 2.140          | 0.343      |

$P < 0.001 = \text{significant}$ .

information, and advising about treatments), and the affective and process measures can be regarded as the processes needed to facilitate progress towards successful 'content' measures. Putting these findings together, South Asian patients had shorter consultations and less appeared to happen within them, and although South Asian patients who were not fluent in English had longer consultations, doctors spent more time asking questions and less time giving information. White doctors appeared to have less affective consultations with South Asian patients.

### **Strengths and limitations of the study**

The South Asian population is not heterogeneous in terms of ethnicity, religion, languages and cultural practices. Our sample comprised mainly of Pakistanis and Bangladeshis, reflecting the make up of the South Asian population in West Yorkshire. We successfully engaged with GPs working in areas with large ethnic minority populations, and undertook difficult and labour intensive fieldwork, often in quite chaotic settings to achieve a dataset of 183 video-recorded consultations. The practices where we collected data, the GPs who participated, and the patient sample, varied in their characteristics, adding to the validity of the findings. Like most tools, there is a danger that the ethnocentricity of RIAS may not fully reflect the experiences of ethnic minority groups.<sup>24</sup> Apart from one ongoing study looking at African-American doctors and their white and African-American patients compared with white doctors and their patients in primary care (D Roter, personal communication, 2001),<sup>1</sup> we are not aware of any other work that has used the RIAS to study the consultations of ethnic minorities.

This study will therefore contribute to the development and refinement of the RIAS with this population. One fundamental difficulty is that real language tends to be multifunctional (that is, we do different things with language at the same time) and while systems such as RIAS have a great deal of validity, these systems are all limited by their rigidity. It can also be difficult to distinguish between language form and function, although this to a degree can be overcome by more than one rater analysing the text. One further limitation is that we do not know whether doctors' and patients' consulting behaviour changes while they are being video recorded, although we do have some evidence that doctors do not change their behaviour.<sup>25</sup>

### **Comparison with existing literature**

*Consultation length.* Our findings on consultation length differ from the existing literature. The only other study that has reported data on consultation length between ethnic groups found that consultations with patients whose first language was

not English had shorter consultations than white British patients.<sup>26</sup> Our findings may differ because our sample comprised more patients who were not fluent in English. This group of patients had significantly longer consultations, most probably as a result of the use of translators, and were probably more likely to take longer to get to the point of their consultation. Other explanations are that the GPs in our study may have consulted differently as a result of seeing more South Asian patients on a daily basis, and because our study was undertaken predominantly in areas of socioeconomic deprivation where the case mix of presented problems may have been more complex.

*Verbal domination.* The overall verbal domination scores were in keeping with established figures. The fact that there were no significant differences between the three groups was unexpected, and may have occurred because of the way we calculated these scores (by including the contribution of 'others'). Verbal domination is a somewhat crude measure, and may be affected by many issues, including linguistic fluency and the ability to set the agenda within the consultation.

*Individual and composite RIAS categories.* Data analysis from both the individual and composite categories, both with and without adjustment to account for confounders, showed considerable differences between the three groups across a range of variables. The purpose of adjusting is to determine whether these effects are as a result of the fluency/ethnicity groups per se, but by doing so takes the 'reality' of the consultation out of context. By approaching the issue from both perspectives, we can draw conclusions about how different the consultations actually were, and disentangle the factors that seem to cause these differences. Even in the presence of interpreters or other family members it would perhaps have been expected that the content measures would have been similar between the groups. The differences that we found may be due to linguistic issues and patients' abilities to set the agenda within the consultation. Differences in affective and process measures (which could be regarded as the processes needed to facilitate progress towards successful 'content' measures) were expected to be different, although not of the magnitude found in this study. Precise reasons for these differences, and the consequences of them, are not known, and warrant further work.

### **Implications for further policy practice and research**

These findings have implications for clinical and process outcomes of consultations, and for

undergraduate and postgraduate education and training. They also suggest that the involvement of interpreters and translators may not necessarily be having a significant effect on communication within the consultation. The fact that communication within the consultation differs between white and South Asian patients suggests that cultural awareness should be a central part of medical education and general practice training; that there is a need for specific training aimed at GPs who see patients who speak foreign languages;<sup>27</sup> that translating services need to be more accessible in primary care;<sup>28</sup> and that GPs should be better trained in the use of interpreters for health outcomes of using family members in the communication process.<sup>29,30</sup> Future research needs to focus on the outcomes of consultations between white and South Asian patients and white and Asian GPs; understanding the use of, and effect of, interpreters and family translators on consultations in primary care, exploring GPs' perceptions and beliefs about their consultations with South Asian patients; and examining the relationship between ethnicity and social class, age and sex in the consultation process. We have undertaken qualitative work to explore some of these issues.<sup>31</sup> Perhaps most importantly, more trial evidence is needed on the effect of interventions on the interaction between patients and practitioners and health outcomes as the current evidence base is very low.<sup>32</sup>

### Supplementary information

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

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### Ethics committee

Ethical approval was provided by Northern and Yorkshire MREC (0/3/25), and by Leeds, Bradford, and Airedale LRECs

### Competing interests

The authors have stated that there are none

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## REFERENCES

- Roter DL, Hall JA. *Doctors talking to patients, patients talking with doctors: improving communication in medical visits*. Dover: Auburn House, 1992.
- Ong LML, de Haes JCM, Hoos AM, Lammes FB. Doctor-patient communication: a review of the literature. *Soc Sci Med* 1995; **40**: 903-918.
- Stewart M. Studies of health outcomes and patient-centred communication. In: Stewart M, Weston WW, Brown JB, et al (eds). *Patient centred medicine*. Thousand Oaks, CA: Sage, 1995: 117-131.
- Beck RS, Daughtridge R, Sloane PD. Physician-patient communication in the primary care office: a systematic review. *J Am Board Fam Pract* 2002; **15**: 25-38.
- Kaplan SH, Greenfield S, Ware JE Jr. Assessing the effects of physician-patient interactions on the outcomes of chronic disease. *Med Care* 1989; **27**: S110-27.
- McAvoy BR, Sayeed A. Communication. In: McAvoy BR, Donaldson L (eds). *Health care for Asians*. Oxford: Open University Press, 1990: 57-71.
- Erens B, Primatesta P, Prior G. *Health survey for England: the health of minority ethnic groups*. London: The Stationary Office, 2001.
- Atkin K. Primary health care and South Asian populations: institutional racism, policy and practice. In: Ali S, Atkin K (eds). *South Asian populations and primary health care: meeting the challenges*. Oxford: Radcliffe, 2004: 9-19.
- Campbell JL, Ramsay J, Green J. Age, gender, socioeconomic, and ethnic differences in patients' assessments of primary health care. *Qual Health Care* 2001; **10**: 90-95.
- Scaife B, Gill P, Heywood P, Neal R. Socio-economic characteristics of adult frequent attenders in general practice: secondary analysis of data. *Fam Pract* 2000; **17**: 298-304.
- Rashid A, Jagger C. Attitudes to and perceived use of health care services among Asian and non-Asian patients in Leicester. *Br J Gen Pract* 1992; **42**: 197-201.
- Odell SM, Surtees PG, Wainwright NW, et al. Determinants of general practitioner recognition of psychological problems in a multi-ethnic inner-city health district. *Br J Psych* 1997; **171**: 537-541.
- Cornwell J, Hull S. Do GPs prescribe antidepressants differently for South Asian patients? *Fam Pract* 1998; **15** Suppl 1: S16-18.
- Ahmad WI, Baker MR, Kernohan EE. General practitioners' perceptions of Asian and non-Asian patients. *Fam Pract* 1991; **8**: 52-56.
- Van der Brink-Muinen A, Verhaak PFM, Bensing JM, et al. Communication in general practice: differences between European countries. *Fam Pract* 2003; **20**: 478-485.
- Robinson M. *Communication and health in a multi-ethnic society*. Bristol: The Policy Press, 2001.
- Roter DL. *The Roter method of interaction process analysis coding manual*. Baltimore: John Hopkins University, 1991.
- Inui TS, Carter WB. Problems and prospects for health services research on provider-patient communication. *Med Care* 1985; **23**: 521-538.
- Coleman, T. Using video-recorded consultations for research in primary care: advantages and limitations. *Fam Pract* 2000; **17**: 422-427.
- Neal RD, Ali NA, Allgar VL, Coleman T. Consent rates for video-recording general practice consultations: effect of ethnicity and other factors. *Fam Pract* 2004; **21**: 219-220.
- Mason J. *Qualitative researching*. London: Sage Publications, 1996.
- Chambers F. What do we mean by fluency? *System* 1997; **25**(4): 535-544.
- Roter DL, Stewart M, Putnam SM, et al. Communication patterns of primary care physicians. *JAMA* 1997; **277**: 350-356.
- Gunaratnam Y. *Researching 'race' and ethnicity: methods, knowledge and power*. London: Sage Publications, 2003.
- Pringle M, Stewart-Evans C. Does awareness of being video recorded affect doctors' consultation behaviour? *Br J Gen Pract* 1990; **40**: 455-458.
- Howie JGR, Heaney DJ, Maxwell M, et al. Quality at general practice consultations: cross sectional survey. *BMJ* 1999; **319**: 738-743.
- Bischoff A, Perneger TV, Bovier PA, et al. Improving communication between physicians and patients who speak a foreign language. *Br J Gen Pract* 2003; **53**: 541-546.
- Jones D, Gill P. Breaking down language barriers. *BMJ* 1998; **316**: 1476.
- Phelan M, Parkman S. How to do it: Work with an interpreter. *BMJ* 1995; **311**: 555-557.
- Free C, Green J, Bhavnani V, Newman A. Bilingual young people's experiences of interpreting in primary care: a qualitative study. *Br J Gen Pract* 2003; **53**: 530-535.
- Ali N, Atkin K, Neal RD. The role of ethnicity and culture in communication between white GPs and their South Asian patients in West Yorkshire. *Ethn Health* 2006: in press.
- Griffin SJ, Kinmonth AL, Veltman MW, et al. Effect on health-related outcomes of interventions to alter the interaction between patients and practitioners: a systematic review of trials. *Ann Fam Med* 2004; **2**: 595-608.