Personality differences between doctors and their patients: implications for the teaching of communication skills

Gillian B Clack,[1] Judy Allen,[2] Derek Cooper[1] & John O Head[3]

OBJECTIVE To establish, as part of a wider study into specialty choice and job satisfaction, whether the personality profiles of a sample of doctors differed from those of the UK population at large, i.e. their potential patients, and the implications this might have for the doctor/patient consultation process.

DESIGN The Myers-Briggs Type Indicator (MBTI)®, which measures normal personality differences, was administered by post to five cohorts of doctors ($n = 464$) who had qualified from a London medical school during the 1980s.

SETTING United Kingdom.

PARTICIPANTS 313 (67.5%) of the medical graduates.

MAIN OUTCOME MEASURES Personality profiles of the respondents compared to those of the UK adult population norms, a proxy for their potential patients.

RESULTS The doctors in this sample differed significantly from the UK adult population norms on most of the dimensions of personality measured, including those which measure an individual's preferred mode of perception, i.e. how one likes to take in information and learn about things. This suggests potential points for miscommunication in the doctor/patient consultation process.

CONCLUSIONS This research should be replicated to see if the results are generalizable. Nevertheless, the findings do indicate that these doctors might benefit from education in the concept of psychological type differences and how these could affect communication with their patients. Training in how to 'flex' their consultation style, when necessary, to take into account possible personality differences between themselves and their patients could enhance the outcome of the interaction for both parties.

KEYWORDS clinical competence, *standards; communication; education, medical, undergraduate/*methods; interpersonal relations; personality; physician patient relation; teaching.

Medical Education 2004; 38: 177–186
doi:10.1046/j.1365-2923.2004.01752.x

INTRODUCTION

This paper is concerned with how communication between doctor and patient might be enhanced if medical education included training in how personality type differences can affect an interaction. Most complaints about doctors relate to poor communication, not clinical competence.[1] Good communication is also a key determinant of patient satisfaction and concordance,[2] yet doctors often misunderstand what information patients want and use language that is unclear.[3–6]

Increased emphasis has been placed in recent years on this aspect of doctors' training[7–11] and it is argued that communication skills can be taught and learnt.

[1]GKT School of Medicine, King's College London
[2]Freelance researcher and writer, London,
[3]Department of Education & Professional Studies, King's College London

Correspondence: Dr Gillian B Clack, Honorary Senior Lecturer, Division of Medical Education, GKT School of Medicine, Sherman Educational Centre, 4th Floor, Thomas Guy House, Guy's Hospital, London, SE1 9RT, UK. Tel: +44 (0) 20 7955 5000, Ext. 7774; E-mail: gill.clack@kcl.ac.uk

Key learning points

Most complaints about doctors are about poor communication not clinical competency.

Personality differences between doctors and their patients may lead to miscommunication.

Doctors' personality profiles have been found to differ significantly from the UK adult norms, i.e. their potential patients.

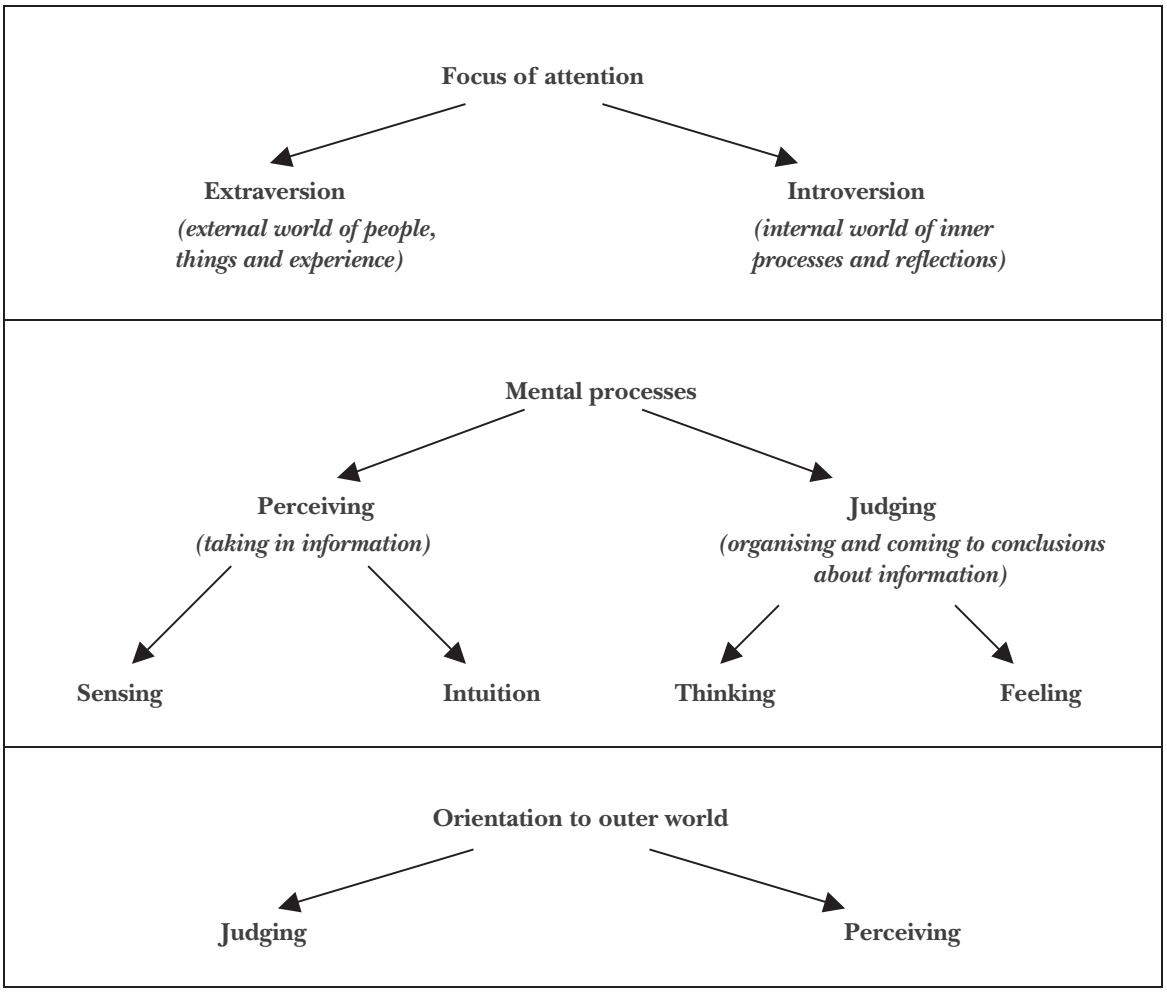
This has implications for the teaching of communication skills.

Training doctors and medical students in how to recognise these differences and adapt their consultation style is recommended.

Teaching can be both instructional and experiential and may use videotapes of student consultations with simulated patients, allowing students to learn to cope with difficult situations in a 'safe' environment.[12] Courses typically cover the importance of listening skills and training in how to communicate with the angry or upset patient. However, this largely generic approach does not take account of possible personality differences between doctor and patient that may also be relevant.

It is suggested that, in order for effective communication to occur between two individuals, there needs to be a 'meeting of minds' in the interaction. Psychological type, as measured by the Myers-Briggs Type Indicator (MBTI)®,[13–16] can help in characterizing differences and similarities in how people process the kind of material doctors and patients regularly discuss. It has been demonstrated in studies of relationships using MBTI® that couples with

Box 1 Personality preferences and the MBTI®



Box 2 CHARACTERISTICS OF THE MBTI® PERSONALITY PREFERENCES AS EXPRESSED IN THE CONTEXT OF COMMUNICATION

(Adapted from Allen & Brock. FLEX Care® Participant Materials. Gainesville, FL: Center for Application of Psychological Type.[30] (In Press) (Reprinted with permission)

PREFERRED FOCUS OF ATTENTION	
Extraversion	**Introversion**
Appears to think aloud	Pauses while giving information
Interrupts	Shorter sentences - not run on
Louder volume of voice	Quieter voice volume
PREFERRED MODE OF ASSIMILATING INFORMATION	
Sensing	**Intuition**
Asks for step by step information or instruction	Asks for current and long-term implications
Asks ''what'' and ''how'' questions	Asks ''why'' questions
Uses precise descriptions	Talks in general terms
PREFERRED BASIS FOR DECISION MAKING	
Thinking	**Feeling**
Appears to be ''testing you'' or your knowledge	Strives for harmony in interaction
Weighs the objective evidence	May talk about what they value
Not impressed that others have decided in favour	Asks how others acted/resolved the situation
PREFERRED APPROACH TO MANAGING ONE'S LIFE	
Judging	**Perceiving**
Impatient with overly long descriptions or procedures	Conversation may move through many areas
The tone is ''let's get it done''	May feel put off by closing a conversation before they're ready
May even decide prematurely and not want to listen to important considerations	No decision before its time - often at last minute or when absolutely necessary in their view

similarity in communication style, or those who can easily adjust to the communication style preferences of others, derive more satisfaction in the relationship. It has been argued that to achieve effective communication requires adjustment on the part of at least one or preferably both dyad members.[17–22] In the field of health care, too, it has been shown that differences in the personalities of those involved in consultations can affect the way in which those interactions are perceived by the participants.[23] Training in how appropriate adjustments can be made may help overcome misunderstandings arising from these differences.[23]

This paper reports the results of an investigation into the psychological type profiles of a sample of graduates from a London medical school that were then compared to the UK adult population,[24] i.e. a proxy for their potential patients. If the personalities of the doctors differed from those of their potential patients, this would affect their preferred communication styles. Training in how to adjust or 'flex' their style to move closer to the preferences of their patients could improve the doctor/patient consultation process.

PSYCHOLOGICAL TYPE AND THE MYERS-BRIGGS TYPE INDICATOR®

The concept of psychological type relates to normal personality differences, i.e. how individuals differ in

the way they prefer to use their minds.[13] These differences can be identified by the Myers-Briggs Type Indicator (MBTI)®. It is a valid and reliable instrument which is currently the most widely used personality questionnaire in the world, some two million administrations being undertaken each year.[16,25–27] The different personality preferences that it reveals are regarded as innate, explaining why some processes come easily and naturally, whereas others require more concentration and effort, e.g. like being right- or left-handed.

The MBTI® identifies, firstly, where individuals prefer to focus their attention, in either the outer world of things and people (Extraversion) or the inner world of ideas and experiences (Introversion) and, secondly, how people like to take in information and learn about things, either through their five senses with a focus on the present (Sensing Perception) or by seeing the 'big picture' and different possibilities with a focus on the future (Intuitive Perception). Thirdly, it covers the process by which people then reach decisions about the information they have received, some preferring to apply logical analysis with a focus on objectivity (Thinking Judgement), others preferring to decide with reference to personal values and the potential impact on those affected (Feeling Judgement). Finally, it identifies those who prefer to use their Judging process in the outer world, who tend to live in a planned orderly way, wanting structure in their lives and to have things settled and decided. This is in contrast to those who prefer to use their Perceiving process, who like to live in a more flexible, spontaneous way, preferring to leave things open in order to be able to consider further options before deciding (see Box 1).[14–16] These differences in preferences go a long way towards explaining apparently unpredictable differences in behaviour and have been found to affect an individual's preferred ways of communicating (see Box 2).[28]

METHOD

As part of a larger survey investigating specialty choice and job satisfaction, the MBTI® was circulated to 464 traceable medical graduates who had qualified

Box 3 COMMUNICATION STYLES PREFERRED BY INDIVIDUALS WITH DIFFERENT MBTI® PERSONALITY PREFERENCES

(*Adapted from Allen & Brock. FLEX Care® Participant Materials. Gainesville, FL: Center for Application of Psychological Type.*[30]
(In Press)(Reprinted with permission)

FACTS WITH PRACTICALITY ***(Sensing perception with Thinking judgement)***	PERSONAL SERVICE ***(Sensing perception with Feeling judgement)***
Be brief, give concise facts Be straightforward and honest Know the facts about my condition and expect to be questioned on them Present the information in a logical way, do not go off on a tangent	Listen carefully to me, give me your time and complete attention Be warm and friendly Give me factual information honestly, but with a personal touch - for example, remember what I've already told you Provide practical information and examples about my condition
LOGICAL OPTIONS WITH COMPETENCE *(Intuitive perception with Thinking judgement)*	SUPPORTING THE VISION *(Intuitive perception with Feeling judgement)*
Respect my intelligence and my need to understand Demonstrate your competence Answer my questions in an honest, open way do not hide anything Give me overall options so I can see a pattern	Treat me with respect, as a whole person, not a case number Listen to and value my concerns Provide overall solutions, an overview without details Take time to discuss my concerns, be honest but kind

Box 4 HOW PATIENTS WITH DIFFERENT MBTI® PERSONALITY PREFERENCES SAID THEY PREFERRED TO HEAR BAD NEWS

(*Adapted from Allen & Brock. FLEX Care® Participant Materials. Gainesville, FL: Center for Application of Psychological Type.*[30] *(In Press)(Reprinted with permission)*

SENSING PERCEPTION/THINKING JUDGEMENT	SENSING PERCEPTION/FEELING JUDGEMENT
''I do not want to hear all sorts of irrelevant stuff, that makes me nervous … I just want to hear the facts.''	''The blunt way he broke the news made it so much worse to bear, what helped was the kindness of the nurse.''
''When my Mother was dying - they kept asking how I felt. In the end I began to think that I should be feeling more than I actually was. It felt intrusive and wasn't helpful. Do not expect me to open up before I know you are trustworthy.''	''The worst thing was hearing the news alone, I wished my partner was with me.'' ''It really helped me to have his full concentration, not to be hurried.''
INTUITIVE PERCEPTION/THINKING JUDGEMENT	**INTUITIVE PERCEPTION/FEELING JUDGEMENT**
''I just wanted the truth, the whole situation and what I could expect.''	''I hated being seen as just another case. I felt better when treated as a person and allowed to work things through with the doctor in my own time.''
''If I have a serious decision to make that might affect my whole life, I want to be sure I am dealing with someone who knows what it is all about - not an amateur.''	''I immediately thought of my family … how it would be for them.''

from the King's College School of Medicine and Dentistry between 1985/86 and 1989/90.

The resulting personality profiles of the respondents were then compared to the personality preferences of a representative sample of the UK adult population,[24] i.e. the doctors' potential patients, to see if differences existed which might contribute towards miscommunication between doctor and patient. The UK norms were derived from research conducted in 1996 of a stratified sample of 1634 individuals, commissioned by the Office of Population, Censuses and Surveys, as part of their monthly 'Omnibus' survey. It is possible that there are regional variations in the distribution of psychological type preferences amongst the UK population but data on this does not exist and, in any case, the medical graduates surveyed were practising medicine throughout the UK, not just in the South-East Region.

The Selection Ratio Type Table (SRTT) program, developed by the Center for Applications of Psychological Type (CAPT),[29] was used for this analysis. This program employs the chi-squared test, or Fisher's Exact Test where appropriate, to compare the proportion of individuals with particular personality preferences present in a sample with those found in a base population, in this case comparing the doctors with UK adult population norms. This program is a convenient way of examining the personality types of two samples and produces the same result as would have resulted from using any standard statistical package. The only difference is that it uses 'type table' input, i.e. the distribution of the sample between the 16 psychological types, rather than a standard variable list as input. Each respondent, however, contributes to only one of the 16 cells of the table and there is no repeated measure even when the separate preference scales are examined.

In this study only the four dichotomous preferences (Extraversion/Introversion; Sensing/Intuitive Perception; Thinking/Feeling Judgement; Judging/Perceiving orientation) together with the different combinations of perception and judgement (Sensing with Thinking; Sensing with Feeling; Intuition with Thinking, Intuition with Feeling) are reported for the sake of simplicity. It should be recognised,

Table 1 Percentages of MBTI personality preferences amongst medical graduates compared to UK adult norms[18]

MBTI dimension	UK adult norms (All) ($n = 1634$)	All medical graduates ($n = 313$)	*P*-value	Male medical graduates ($n = 151$)	*P*-value	Female medical graduates ($n = 162$)	*P*-value
Extraversion	52.3	47.0	N.S.	39.1	$P < 0.01$	54.3	N.S.
Introversion	47.7	53.0		60.9		45.7	
Sensing	76.5	49.5	$P < 0.001$	45.0	$P < 0.001$	53.7	$P < 0.001$
Intuition	23.5	50.5		55.0		46.3	
Thinking	45.9	63.6	$P < 0.001$	80.8	$P < 0.001$	47.5	N.S.
Feeling	54.1	36.4		19.2		52.5	
Judging	58.3	68.1	$P < 0.01$	64.2	N.S.	71.6	$P < 0.001$
Perceiving	41.7	31.9		35.8		28.4	
Sensing with Thinking	36.4	32.3	N.S.	39.7	N.S.	25.3	$P < 0.01$
Sensing with Feeling	40.1	17.2	$P < 0.001$	5.3	$P < 0.001$	28.4	$P < 0.01$
Intuition with Feeling	14.0	19.2	$P < 0.05$	13.9	N.S.	24.1	$P < 0.001$
Intuition with Thinking	9.5	31.3	$P < 0.001$	41.1	$P < 0.001$	22.2	$P < 0.001$

P-value shows significance when the medical graduates were compared to the UK population norms as a whole.

however, that all the different combinations of preferences involved in psychological type result in contrasting behavioural expression. However, limitation of space precludes an exploration of all combinations here.[30]

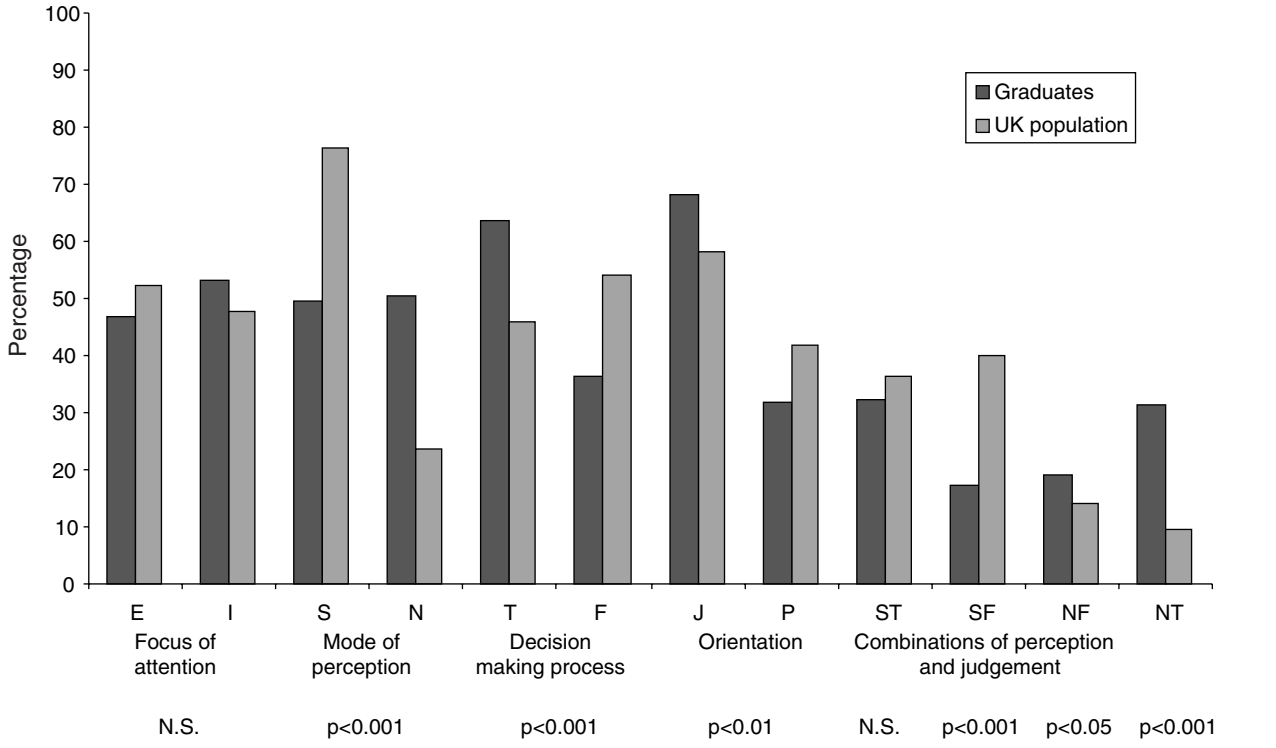
The combinations of Perception and Judgement have been included since they have been shown to be important in communication.[23] Allan & Brock's research demonstrated that some individuals prefer being given the straightforward facts in a clear, concise and practical manner (Sensing with Thinking), others to be given factual information in a caring manner (Sensing with Feeling), some to have the overall picture delivered in a personalised manner (Intuition with Feeling), others to be provided with logical options by a competent practitioner in a manner that respects their intelligence (Intuition with Thinking) (see Boxes 3 and 4).[28]

RESULTS

In all, 313 graduates completed the MBTI® (67.5% of sample).

A summary of the distribution of psychological type preferences of the medical graduates and those in the UK adult population is shown in Table 1. Most doctors had a preference for Introversion (53.0%) rather than Extraversion (47.0%), Intuitive Perception (50.5%) rather than Sensing Perception (49.5%), Thinking Judgement (63.6%) rather than Feeling Judgement (36.4%) and a Judging orientation (68.1%) rather than a Perceiving orientation (31.9%). In terms of the combinations of perception and judgement the most common pairing was Sensing with Thinking (32.3%) followed by Intuition with Thinking (31.3%), with a much lower proportion preferring Intuition with Feeling (19.2%) and Sensing with Feeling (17.2%).

When gender comparisons were made, there were significantly more Introverts ($P < 0.01$) and Thinking-deciders ($P < 0.001$) amongst the male doctors compared to the female doctors. Conversely, there were significantly more Extraverts and Feeling-deciders amongst the female doctors when compared to the males.



E - Extraversion
I - Introversion
S - Sensing perception
N - Intuitive perception
T - Thinking judgement
F - Feeling judgement
J - Judging orientation
P - Perceiving orientation

ST - Sensing perception with Thinking judgement
SF - Sensing perception with Feeling judgement
NF - Intuitive perception with Feeling judgement
NT - Intuitive perception with Thinking judgement

Figure 1 Personality preferences of all medical graduates ($n = 313$) compared to the UK adult norms ($n = 1634$).

The differences between the psychological type preferences of the doctor sample compared to the UK adult norms are shown in Fig. 1. There were therefore more Introverts (N.S), significantly more Intuitives ($P < 0.001$), Thinking-deciders ($P < 0.001$) and those with a Judging orientation ($P < 0.01$) amongst the medical graduates than in the UK adult population. Conversely, there were more Extraverts (N.S), significantly more Sensors ($P < 0.001$), Feeling-deciders ($P < 0.001$) and those with a Perceiving orientation ($P < 0.01$) in the UK adult population than amongst the medical graduates, although, as with the graduates, a majority preferred the Judging orientation. Thus, in three of the four basic personality dimensions there was a significant difference between the UK adult norms and the medical graduates. As far as the preferred mode of perception was concerned (Sensing/Intuition), important in the context of communication, the difference was marked, with under half the doctors preferring Sensing as their mode of perception compared to over three-quarters of the UK population. When the four combinations of perception and judgement were compared, there were fewer doctors with the combination of Sensing with Thinking (N.S), significantly fewer with Sensing with Feeling ($P < 0.001$), but significantly more with Intuition with Feeling ($P < 0.05$) and Intuition with Thinking ($P < 0.001$) than in the UK population.

When the male and female doctors were compared separately to the UK adult norm totals, amongst the

male doctors there were significantly more Introverts ($P < 0.01$), Intuitives ($P < 0.001$) and Thinking-deciders ($P < 0.001$) than in the UK population. There were also significantly more Intuitives with Thinking ($P < 0.001$) and fewer preferring Sensing with Feeling ($P < 0.001$). In the case of the female doctors there were also significantly more Intuitives ($P < 0.001$), those with the Judging orientation ($P < 0.001$) and those preferring Intuition with Thinking ($P < 0.001$) and Intuition with Feeling ($P < 0.001$), whilst there were significantly fewer with a preference for Sensing with Feeling ($P < 0.01$) and Sensing with Thinking ($P < 0.01$) than in the UK population.

DISCUSSION

These results demonstrate that there are differences between the personality profiles of the doctors included in this sample of London medical graduates compared to the UK adult norms in all the dichotomous preferences but particularly Sensing/Intuitive Perception, Thinking/Feeling Judgement, and the Judging/Perceiving orientation which has been found to be relevant in the context of communication (Box 2).[28] It was also found that most of the combinations of Perception (how individuals like to take in information and learn about things) and Judgement (how they then prefer to process that information and come to conclusions about it) were also significantly different. This applied to both the male and female doctors. The differences in preferred mode of perception were particularly marked, most importantly in interactions between health care professionals and their patients, as Allen & Brock have demonstrated (see Boxes 3 & 4).[23,28]

Whilst it is acknowledged that many contextual factors affect the success or otherwise of an interaction, e.g. subject of consultation, environment and socio-situational factors, these results could well have considerable relevance to doctor/patient communication. If the two individuals involved in the interaction differ to this extent, they are likely to be talking on different wavelengths, resulting in potential misunderstandings unless there is some adjustment or 'flexing' of style. For example, a patient with preferences for Sensing with Feeling (40.1% of the UK population) will have only a 1 in 6 chance of seeing a doctor with the same preferences. Similarly, a doctor with preferences for Intuition and Thinking (31.3% of this sample) will have only a 1 in 11 chance that the patient will be the same as them. Some adjustment on the part of one or both parties involved in the interaction is therefore likely to be needed if effective communication is to occur. These results may help explain the number of complaints from patients about poor communication, the lack of understanding and poor compliance reported in the literature[1–6] if these doctors have not learned to adjust their interaction styles to accommodate these differences. Experienced clinicians are likely to learn how to do this through trial and error over many years of medical practice and developing maturity. What we are suggesting therefore is that medical students may benefit from learning these differences at an early stage of their training, so they are aware of them and can appreciate the effect of these differences during clinical and other encounters. This might help them develop the ability to adjust or 'flex' their style more quickly than relying solely on experience.

It has been found that education can ameliorate such differences and that health care professionals can be taught to recognise the ways in which their own personality preferences affect their communication style and 'flex' their approach when necessary to suit the preferences of their patients. They can be trained to pick up their patients' likely personality preferences from the language they employ and from behavioural cues. They may then adapt their communication style to meet their patients half way, arguably resulting in a better outcome from the consultation for both parties.[23]

CONCLUSIONS

Since the personality profiles of this sample of doctors from one medical school have been shown to differ significantly from their potential patients, this research should be replicated on a larger scale to see if the differences found are representative of UK doctors generally. It has been shown that training can ameliorate the potential difficulties resulting from such personality differences, thereby improving the outcome of the interaction.[23,28] It is therefore recommended that the application of psychological type to the doctor/patient consultation process should be included in the communication skills' training of health care professionals and that this intervention be evaluated.

FUNDING

The King's Fund; Lambeth, Southwark & Lewisham Health Authority; Joint Research Committee of King's

Healthcare NHS Trust and King's College School of Medicine and Dentistry; Jules Thorn Charitable Trust; Maurice Wohl Charitable Foundation and University of London Central Research Fund.

CONTRIBUTORS

Drs Clack and Head had the original idea for the study and designed the project, Dr Clack conducted the literature review and traced the participants. Mrs Allen contributed data from her research that showed that patients' personalities affect the way they prefer to communicate and how this might be overcome. Drs Clack and Cooper analysed the data and Dr Clack wrote the paper. All authors contributed to the final draft and Dr Clack is guarantor for the paper.

COMPETING INTERESTS

Judy Allen was involved in the development of the FLEX Care® training package designed to help health care professionals overcome difficulties in communication due to personality differences.

ACKNOWLEDGEMENT

We thank all the doctors who participated in the survey, the grant giving bodies that funded the study, Bob Patton who was Administrative Assistant to the project, and the Dean of the King's College School of Medicine and Dentistry for his support throughout this research. We are also grateful to Dr Anita Houghton and Dr Peter Roseveare, for their helpful comments on earlier drafts.

REFERENCES

1 Richards R. Chasms in communication.. *BMJ.* 1990;**301**:1407–8.

2 Simpson M, Buckman R, Stewart M, Maguire P, Lipkin M, Novack D, Till J. Doctor–patient communication: the Toronto consensus statement. *BMJ* 1991;**303**: 1385–7.

3 Frances V, Korsch BM, Morris MJ. Gaps in doctor–patient communication: patient response to medical advice. *N Engl J Med.* 1969;**280**:535–40.

4 Simpson MA. *Clinical psycholinguistics: the language of illness and healing.* New York: Irvington; 1980.

5 Faden RR, Becker C, Lewis C, Freeman J, Faden AI. Disclosure of information to patients in medical care. *Med Care* 1981;**19**:718–33.

6 Makillop WJ, Stewart WE, Ginsberg AD, Stewart SS. Cancer patients' perceptions of disease and its treatment. *Br J Cancer* 1988;**58**:355–8.

7 General Medical Council. *Tomorrow's doctors.* London: General Medical Council; 1993.

8 Audit Commission. *What seems to be the matter? Communication between hospitals and patients.* London: HMSO; 1993.

9 Department of Health. *Acting on complaints.* (EL(95)37). Leeds: National Health Service Executive; 1995.

10 Meryn S. Improving doctor–patient communication: not an option, but a necessity. *BMJ.* 1997;**316**:1922.

11 Royal College of Physicians of London. *Improving communication between doctors and patients. A report of a Working Party.* London: Royal College of Physicians of London; 1997.

12 Aspegren K. BEME Guide, 2: Teaching and learning communication skills in medicine – a review with quality grading of articles. *Med Teacher* 1999;**21**(6):563–70.

13 Jung CG. *Psychological types.* London: Routledge; 1999.

14 Myers IB. *Introduction to type, 5th edn. [European English version].* Oxford: Oxford Psychologists Press; 1993.

15 Myers IB, Myers PB. *Gifts differing: understanding personality type.* Palo Alto, CA: Consulting Psychologists Press; 1993.

16 Myers IB, McCaulley MH, Quenk NL, Hammer AL. *MBTI® Manual: a guide to the development and use of the Myers-Briggs Type Indicator, 3rd edn.* Palo Alto, CA: Consulting Psychologists Press; 1998.

17 Sherman RG. Typology and problems in intimate relationships. *Res Psychol Type* 1981;**4**:4–23.

18 Yeakley FR Jr. Communication style preferences and adjustments as an approach for studying effects of similarity in psychological type. *J Psychol Type* 1982;**5**:19–23.

19 Yeakley FR Jr. Implications of communication style research for psychological type theory. *J Psychol Type* 1983;**6**:2–13.

20 Carey JC, Hamilton DL, Shanklin G. Psychological type and interpersonal compatibility: evidence for a relationship between communication style preference and relationship satisfaction in college roommates. *J Psychol Type* 1985;**10**:36–9.

21 Reynolds BC. *An investigation of the relationship among psychological types and health service team members' evaluations of themselves, their teams, and teammates.* Unpublished doctoral Dissertation. University of Minnesota; 1996. Cited in Hammer AL, eds. *MBTI applications: a decade of research on the Myers-Briggs Type Indicator.* Palo Alto, CA: Consulting Psychologists Press; 1996.

22 Marioles NS, Strickert DP, Hammer AL. Attraction, satisfaction and psychological types of couples. *J Psychol Type* 1993;**36**:16–27.

23 Allen J, Brock SA. *Health care communication using personality type: patients are different!* London: Routledge; 2000.

24 Kendall E. *The Myers-Briggs Type Indicator (MBTI)®: [European English Edn.] Manual (Suppl.).* Oxford: Oxford Psychologists Press; 1998.

25 Myers IB, McCaulley MH. *A guide to the development and use of the Myers-Briggs Type Indicator.* Palo Alto, CA: Consulting Psychologists Press; 1985.

26 Harvey RJ, Thomas L. Using item response theory to score the Myers-Briggs Type Indicator: rationale and findings. *J Psychol Type* 1996;**37**:16–60.

27 Houghton A. Using the Myers Briggs Type Indicator for career development. *BMJ Classified: Career Focus* 2000;**3**(June):2–3.

28 Allen J, Brock SA. *FLEX Care® Participant Materials.* Gainesville, FL: Center for Application Psychol Type; 2002; in press.

29 Granade JG, Myers IB. *The Selection Ratio Type Table PC Program.* Gainesville, FL: Center for Applications of Psychological Type; 1987.

30 Clack GB. *Is personality related to doctors' specialty choice and job satisfaction?* Unpublished PhD Thesis. University of London; 2002.

Received 17 July 2002; editorial comments to authors 16 October 2002, 1 May 2003; accepted for publication 4 June 2003