
The impact of matching the patient’s vocabulary:

a randomised control trial

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Abstract

Background: Research in General Practice emphasises the importance of matched models, beliefs and vocabulary in the consultation. Aims: The present study aimed to explore the impact of matched and unmatched vocabulary on patient satisfaction with consultations. Setting: The study took place in one inner city general practice. Methods: Patients (n=62) were randomised to either matched or unmatched vocabulary consultations when consulting for problems relating to sexual or bodily function or anatomy. Matched consultations required the doctor to use the same vocabulary as the patient. Unmatched consultations required the doctor to use medical vocabulary. Completed questionnaires were received from 60 patients. The main outcome measure was patient satisfaction (using the Medical Interview Satisfaction Scale). This assesses total satisfaction and has four subscales: distress relief, communication comfort, rapport and compliance intent. Doctor satisfaction with the consultation was also assessed. Results: The results showed that the two groups were comparable for demographic variables and doctor satisfaction. However, patients in the matched consultation group had significantly higher total satisfaction scores and higher ratings of rapport, communication comfort, distress relief and compliance intent than those in the unmatched group. Conclusion: The results indicate that a doctor’s choice of vocabulary affects patient satisfaction immediately after a general practice consultation and that using the same vocabulary as the patient can improve patient outcomes.

Key words: matching, vocabulary, language, consultations, sharing, convergence
Introduction

Communication in the consultation is a complex process made up of many different components including the vocabulary used, the doctor’s and patient’s tone of voice, their body language and the style of interaction. Although these different components are interrelated some quantitative research has attempted to unpack consultation communication. Some work has focused on the meanings of the actual words used. For example Ogden et al (1-3) illustrated differences in how patients and doctors understand the terms ‘depression’, ‘obesity’ and ‘health’ and Ogden et al (4,5) examined how patients responded to either medical or lay diagnoses and to terms expressing uncertainty. In contrast, other work has focused on the style of interaction. For example, Roter (6) and Bensing (7) reported the impact of type of communicative behaviour on patients’ satisfaction with health care, and Carter et al (8) found a positive relationship between aspects of communication and subsequent adherence to medical recommendations. Similarly, Ogden et al (9) examined doctors and patients beliefs about different styles of interaction. One area of communication which can be particularly problematic is that relating to sexual and excretory function and anatomy. Research indicates that patients and doctors find discussion of sexual matters difficult (10-14) and that language relating to sexual function and anatomy varies considerably between different subjects and in different settings (11,14-19). Research also suggests that patients may not understand the medical terms used by doctors and that some prefer non-technical slang terms to describe sexual and excretory function (20-22). For example, many patient responses for the words ‘stool’, ‘urine’, ‘sexual intercourse’ and ‘bowel’ were judged to be inadequate by researchers (20).

In light of such problems, some clinicians and researchers have offered suggestions for improving doctor-patient communication. Early work by Ley (23,24) highlighted the importance of repetition, clarity and the use of simple language. In addition, Ley (23,24) suggested that doctors should supplement the consultation with simple written information and should check that the patients can repeat any information they had been given. Similarly, Scott and Weiner (25) proposed the compilation of a ‘patient speak’ dictionary to alleviate
some of the discrepancy in vocabulary and meaning that exists between doctors and patients. Although this work has informed much of the work on communication it could be criticised for patronising the patient and may underestimate the patient’s medical knowledge particularly given increased access to medical information in recent years. Other research has therefore suggested that rather than using ‘lay’ language per se the doctor should match his or her language to the patient’s. For example, Pendleton et al (26) emphasised the importance of matching both beliefs and language between doctors and patients. The concept of patient centredness also involves a recognition of and respect for the patient’s potentially different perspective (27,28), and concerns about shared decision making and patient participation highlight concordance in the consultation (29-32). Therefore this prescriptive literature suggests that communication can be maximised if language is matched between doctor and patient. This finds reflection in the empirical work of Bourhis et al (33) who described how different individuals use different linguistic codes and how these codes can be modified to hinder or facilitate communication. In particular, Bourhis et al (33) developed a theory of accommodation and argued that when in conversation some individuals show ‘divergence’ which involves accentuating differences in speech patterns others show ‘convergence’ which involves one speaker attempting to adopt the speech pattern of the other. Research using this theoretical perspective suggests that whereas divergence can result in conflict and discomfort, convergence can promote interpersonal liking and social integration (34,35). To date whilst some studies have focused on the language used by doctors (36), some have explored the impact of particular terms on patients (4,5) and others have highlighted the different meanings attributed to different words by doctors and patients (1-3) no studies have examined the impact of matched versus unmatched vocabulary on patient outcomes. In light of this, the present study aimed to explore the impact of matched and unmatched vocabulary on patient satisfaction. It focused on primary care consultations relating to sexual and excretory function as this has been identified as a particularly problematic area.

Method

Subjects
The study took place in one inner city general practice. All patients aged eighteen or over attending for appointments with one doctor were invited to participate in the study and given an information and consent form by the receptionist on arrival. Patients were asked to bring the completed information and consent form into the consultation with them. Patients were excluded from the study by the doctor if they were illiterate, unable to speak English, blind or partially sighted or suffering from a major mental illness such as schizophrenia. Patients were included in the study if they were able to speak and read English, even if this was not their first or main language. Study consultations were defined as those in which the patient initiated discussion of a matter involving, or likely to relate to, sexual or excretory function or anatomy. This did not have to be the main focus of the consultation, but had to involve a significant exchange (rather than being something mentioned merely in passing). Subjects who had already completed one study consultation were not included again. Ethical approval for the study was given by the local research ethics committee.

**Design**

The design involved a randomised trial with two arms (matched and unmatched consultations) based in one General Practice with one General Practitioner and was based upon the design used in a previous trial (37).

**Sample size**

In the absence of any previous research exploring the impact of matching vocabulary an interim analysis was carried out after the first 20 subjects had been recruited. On the basis of this analysis, a sample size of sixty was deemed sufficient to detect a significant difference between the two groups using non-parametric tests, with a power of 80% and an alpha of 95% based upon a medium effect size in the difference in patient satisfaction scores.

**Randomisation**

The receptionists enrolled patients into the study as they arrived at the practice. Patients that consented gave their completed consent form to the General Practitioner at the start of their
consultation. The GP had a set of cards on his desk stating whether the consultation was to involve matched or unmatched vocabulary, the order of which had been generated using a random number table. A card was turned over when the patient entered the room. If the consultation fulfilled the inclusion criteria then the card determined the type of consultation. If the consultation was excluded from the study then the card was replaced at the bottom of the pile. At the end of each study consultation the doctor completed a numbered study sheet, and patients were asked to complete a numbered questionnaire in the waiting room and hand it to the receptionist. Recruitment was continued until a sample size of 60 was achieved.

The interventions

Pilot study

In order to determine which terms were ‘medical’ and which were ‘lay’ a questionnaire was designed to assess how comfortable doctors and patients felt when using various terms relating to sexual and excretory function and anatomy in the medical consultation. Responses for each of the suggested terms were scored from one (very comfortable) to five (very awkward). Completed questionnaires were received by 93 consecutive patients from one practice (response rate 93%) and 30 General Practitioners from Camden and Islington Health Authority (response rate 42.9%). The mean age of the patients was 37.2 years, and of the doctors was 44.3 years. 69 (74%) of the patients and 13 (43%) of the doctors were female. Results showed that in general GPs were significantly more comfortable in using the terms faeces, defecate, urine, urinate, rectum, anus, penis, testicle, vagina and sexual intercourse. These terms were considered the ‘medical’ terms and formed the basis of the unmatched consultation.

Matched consultations required the doctor to adopt terms used by the patient to refer to sexual or excretory function or anatomy. For example, if the patient used the terms ‘willy’, ‘bum’, or ‘make love’ the doctor continued the consultation using these terms rather than the equivalent medical terms.

Unmatched consultations required the doctor to restrict himself or herself to the terms
faeces, defecate, urine, urinate, rectum, anus, penis, testicle, vagina and sexual intercourse.

Validation
Six consultations were videotaped and rated by an independent rater as either containing matched or unmatched vocabulary as a means to validate the interventions. The results from this analysis indicated that the matched and unmatched consultations were different in terms of the vocabulary used by the doctor. In addition, 6 study versus 6 non study consultations were videotaped and compared as a means to validate the inclusion criteria. The results from this indicated that the study consultations were more related to sexual and excretory function than the non study consultations.

Measures
At the end of each study consultation the patient was asked to complete a questionnaire consisting of the following items:

Profile characteristics
Patients were asked to describe their age, sex, ethnicity (white, Black, Asian, other), usual language, education (none, O level, A level, degree), occupation (unemployed, student, clerical or manual, professional) and number of consultations in preceding year (0-2, 3-4, 5 or more).

Patient satisfaction
Subjects completed the Medical Interview Satisfaction Scale (MISS) (38) which measures patient satisfaction with the consultation. Subjects rated 29 statements using a seven point Likert-type scale ranging from ‘very strongly disagree’ (1) to ‘very strongly agree’ (7). Subscale and total scores are calculated by simply adding all item scores without weighting. The MISS provides a measure of overall patient satisfaction ranging from 29 to 203 and four subscales relating to distress relief, communication comfort, rapport and compliance intent.
Doctor satisfaction
The doctor also rated his satisfaction with the consultation using a visual analogue scale, ranging from low (0mm) to high (100mm).

Hypothesis
It was hypothesized that matched consultations would result in greater patient satisfaction than unmatched consultations.

Data analysis
The results were examined in two ways. Firstly, the data were analysed to describe the profile characteristics of the subjects using descriptive statistics and to look for differences between the two groups. Secondly, the data were analysed to assess differences in satisfaction between the two groups.

Results
Participants
During the study period there were 855 consultations with adult patients. Consent was sought prior to 832 consultations, and 23 patients were inadvertently excluded. Consent was refused in 53 consultations, and in 66 consultations the patient was excluded by the doctor (45 unable to speak English, 11 illiterate, seven with major mental illness and two blind or partially sighted). Of the remaining 713 consultations, 62 were eligible for inclusion in the study. Two subjects failed to hand in completed questionnaires leaving 60 questionnaires for analysis. 31 subjects were allocated to the matched and 29 to the unmatched group. The clinical conditions presented during study consultations included urinary symptoms, vaginal bleeding, constipation, diarrhoea and other common general practice problems. Patients used a variety of slang terms and euphemisms when describing these problems such as ‘go to the toilet’, ‘have sex’, ‘down below’ and ‘pee’.

Profile characteristics
Profile characteristics of the study groups are shown in table 1.

There were no significant differences between the two groups in terms of age, sex, ethnic group, usual language, level of education, occupational group, number of consultations in previous year or whether the study topic formed all or part of the study consultation. The age, sex and ethnicity of subjects was comparable with surgery attenders in general. The mean age of patients who did not consent was 33.4 and 49 (92.5%) were women. The mean age of the patients excluded from the study was 40.1 and 29 (43.9%) were women.

**Satisfaction**

Ratings of patient and doctor satisfaction for the two groups are shown in table 2.

**Patient satisfaction**

The results showed a significant difference between the two groups for the total MISS score with patients in the matched group having higher satisfaction. In terms of the MISS subscales, there were significant differences between the two groups with patients in the matched group reporting higher distress relief, higher rapport, higher communication comfort and higher compliance intent than those in the unmatched group.

**Doctor satisfaction**

There was no significant difference in doctor satisfaction scores between the two groups.

**Discussion**

The present study aimed to explore the relative impact of matched and unmatched vocabulary on patient satisfaction. However, there are some problems with the study that need to be considered. First, the intervention involved only one GP who varied his vocabulary according to the arm of the trial. It is possible that this minimised the impact of the intervention as the GP would have his own style that may have been more similar to one of the intervention styles. This could have resulted in the doctor appearing more at ease for
some of the consultations. The doctor’s own satisfaction, however, did not differ between the two groups suggesting that this cannot be the only explanation of the differences found. Furthermore, a similar design has been shown to be effective in previous research (37) and the validation process indicated that the interventions did result in the use of different vocabulary. Second, the study only involved one General Practice which limits the generalisability of the results. However, the demographic profile of the patients suggests that they are comparable to patients in general indicating that some conclusions can be drawn. Finally, communication is a complex process involving a range of factors of which vocabulary is only one. The present study used an experimental design to try to manipulate vocabulary in isolation from the other factors. Using such a design, the results suggest that vocabulary does have an impact upon patient outcomes. However, it is possible that this is not just to do with vocabulary per se but also to do with other dimensions of the consultation that may change as vocabulary is changed. For example, using more medical terms may make the consultation more formal, which could be reflected in the doctor’s body language and the patients’ style of responding. In contrast using lay terms may make the consultation less formal. Although the results showed that the doctors’ satisfaction ratings of the consultations did not vary between consultations, there may have been more subtle changes which remained undetected. However, given these problems the present study does provide some insights into the impact of matched vocabulary on patient outcomes.

The results showed that patients in the matched vocabulary group were more satisfied with the consultation overall, and specifically more satisfied in terms of distress relief, rapport, communication comfort and compliance intent. This supports previous research indicating that styles of communication relate to patient outcomes (6-8) but indicates that not only may a broad style be important but also the specific vocabulary used. However, whereas previous research has explored the meaning of words per se (1-3,5) the results from this study suggest that it is not just the choice of words that is important but making this choice in the context of the patient’s own words. This is line with work emphasising the importance of matching between patients and doctors and suggests that not only should beliefs and models be
matched but also vocabulary (26, 29, 32). Further, this experimental study provides empirical support for the notion of convergent and divergent vocabulary and the prediction that the former may be of benefit to interpersonal relationships (33-35). Previous research has used the MISS to assess patient outcomes following a range of interventions (eg. 39,40). The results from the present study showed a 7.5% improvement in overall patient satisfaction following the use of matched vocabulary which is similar to that found following leaflets to empower patients (39) and suggests that this increase in satisfaction may be of clinical use.

To conclude, the study shows that patient satisfaction was higher when doctor used matched rather than unmatched vocabulary which complements the accepted concept of the consultation being a forum for exchanging ideas, as opposed to a vehicle for transmitting technical information from doctor to patient. General Practitioners should consider trying to adopt terms used by their patients in consultations relating to sexual and excretory problems. Further work is needed to clarify the implications of such a policy for doctors and patients.

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Conflict of interest: None

Funding: None
<table>
<thead>
<tr>
<th></th>
<th>Matched (n=31)</th>
<th>Unmatched (n=29)</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>9 (29%)</td>
<td>8 (27.6%)</td>
<td>p=0.9</td>
</tr>
<tr>
<td>Female</td>
<td>22 (71%)</td>
<td>21 (72.4%)</td>
<td></td>
</tr>
<tr>
<td><strong>Ethnic group</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>22 (71%)</td>
<td>18 (62.1%)</td>
<td>p=0.9</td>
</tr>
<tr>
<td>Afro Carribean</td>
<td>6 (19.4%)</td>
<td>3 (10.3%)</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>1 (3.2%)</td>
<td>6 (20.7%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2 (6.5%)</td>
<td>2 (6.9%)</td>
<td></td>
</tr>
<tr>
<td><strong>Usual language</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>26 (83.9%)</td>
<td>24 (82.8%)</td>
<td>p=0.59</td>
</tr>
<tr>
<td>Other</td>
<td>5 (16.1%)</td>
<td>5 (17.2%)</td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>4 (12.9%)</td>
<td>2 (6.9%)</td>
<td></td>
</tr>
<tr>
<td>0 level / GCSE</td>
<td>10 (32.3%)</td>
<td>14 (48.3%)</td>
<td></td>
</tr>
<tr>
<td>A level / technical</td>
<td>11 (35.5%)</td>
<td>9 (31.0%)</td>
<td></td>
</tr>
<tr>
<td>Degree</td>
<td>6 (19.4%)</td>
<td>4 (13.8%)</td>
<td></td>
</tr>
<tr>
<td>none / O level</td>
<td>14 (45.2%)</td>
<td>16 (55.2%)</td>
<td>p=0.44</td>
</tr>
<tr>
<td>Other</td>
<td>17 (54.8%)</td>
<td>13 (44.8%)</td>
<td></td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed student</td>
<td>16 (51.6%)</td>
<td>16 (55.1%)</td>
<td>p=0.5</td>
</tr>
<tr>
<td>student</td>
<td>0 (0%)</td>
<td>1 (3.4%)</td>
<td></td>
</tr>
<tr>
<td>clerical / manual</td>
<td>11 (35.5%)</td>
<td>8 (27.6%)</td>
<td></td>
</tr>
<tr>
<td>professional</td>
<td>4 (12.9%)</td>
<td>4 (13.8%)</td>
<td></td>
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<tr>
<td>Employed</td>
<td>16 (51.6%)</td>
<td>16 (55.2%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15 (48.4%)</td>
<td>13 (44.8%)</td>
<td></td>
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<tr>
<td><strong>Consultations in past year</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-2</td>
<td>8 (25.8%)</td>
<td>6 (20.7%)</td>
<td>p=0.8</td>
</tr>
<tr>
<td>3-4</td>
<td>11 (35.5%)</td>
<td>11 (37.9%)</td>
<td></td>
</tr>
<tr>
<td>5+</td>
<td>12 (38.7%)</td>
<td>12 (41.4%)</td>
<td></td>
</tr>
<tr>
<td>0-4</td>
<td>19 (61.3%)</td>
<td>17 (58.6%)</td>
<td></td>
</tr>
<tr>
<td>5+</td>
<td>12 (38.7%)</td>
<td>12 (41.4%)</td>
<td></td>
</tr>
<tr>
<td><strong>Role of excretory / sexual issue</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>whole consultation</td>
<td>28 (90.3%)</td>
<td>24 (82.8%)</td>
<td>p=0.3</td>
</tr>
<tr>
<td>part consultation</td>
<td>3 (9.7%)</td>
<td>5 (17.2%)</td>
<td></td>
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</tbody>
</table>
Table 2: Impact of intervention on patient and doctor satisfaction

<table>
<thead>
<tr>
<th></th>
<th>Matched (n=31) (Mean, SD, CIs)</th>
<th>Unmatched (n=29) (Mean, SD,CIs)</th>
<th>Mean difference (SE)</th>
<th>CIs of difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient satisfaction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total MISS*</td>
<td>155.45 ± 18.23 (148.9-162.0)</td>
<td>144.62 ± 8.92 (141.31-147.93)</td>
<td>10.83 (3.75)</td>
<td>3.43-18.23</td>
</tr>
<tr>
<td>MISS subscales:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>distress relief*</td>
<td>58.48 ± 6.67 (56.0-60.87)</td>
<td>54.89 ± 4.48 (53.23-56.66)</td>
<td>3.59 (1.48)</td>
<td>0.63-6.54</td>
</tr>
<tr>
<td>rapport*</td>
<td>54.7 ± 7.42 (52.04-57.36)</td>
<td>50.79 ± 3.88 (49.35-52.23)</td>
<td>3.95 (1.55)</td>
<td>0.89-6.99</td>
</tr>
<tr>
<td>communication comfort*</td>
<td>21.35 ± 2.64 (20.4-22.3)</td>
<td>19.27 ± 1.69 (18.64-19.9)</td>
<td>2.08 (0.57)</td>
<td>0.94-3.22</td>
</tr>
<tr>
<td>compliance intent*</td>
<td>20.87 ± 2.69 (19.9-21.84)</td>
<td>19.65 ± 1.49 (19.1-20.2)</td>
<td>1.22 (0.57)</td>
<td>0.09-2.34</td>
</tr>
<tr>
<td><strong>Doctor satisfaction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor satisfaction</td>
<td>49.90 ± 7.47 (52.58-47.22)</td>
<td>46.7 ± 7.19 (44.03-49.37)</td>
<td>3.14 (1.89)</td>
<td>-0.65-6.94</td>
</tr>
</tbody>
</table>

* significant difference between groups
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What is known already

Current literature in general practice highlights the importance of shared models, beliefs and language in the consultations.

The impact of a GP matching the patients language remains unexplored.

What this paper adds

This randomised control trial indicates that matching the patient’s language in consultations relating to sexual and excretory function results in improved patient satisfaction.

In particular matched language resulted in greater communication comfort, rapport and distress relief than unmatched language.