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Do patients want choice? An observational study of neurology consultations

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Objectives – To determine how often patients are given choice in neurology outpatient consultations and whether choice is associated with greater patient satisfaction.

Methods – Prospective study in outpatient clinics in two United Kingdom centres. Interactions between 14 neurologists and 223 patients were studied. Participating doctors and patients completed post-appointment questionnaires asking whether choice had been offered / perceived. Patients completed the Medical Interview Satisfaction Scale 21 (MISS-21).

Results – Choice was reported after most encounters (patients 71.8%, neurologists 67.9%). Patients and Neurologists failed to agree about whether choice was offered after 32% of consultations. Choice was not associated with increased patient satisfaction. In fact, satisfaction was greater when no choice had been offered ($p=0.05$). Satisfaction scores were also greater when doctors were more certain about the diagnosis and when symptoms were considered explained by a medical condition ($p\leq 0.001$).

Conclusions – Choice featured in the majority of clinical interactions but clinicians and patients often disagreed whether this was the case. Choice was not associated with greater patient satisfaction.

Practice Implications – Clinicians need to be very explicit if they want patients to know that they are being given choices. Choice is not necessarily valued by patients in all clinical interactions.

1. Introduction (revised)

'Patient choice' has been increasingly prioritised in UK health policies over the past decade. Yet the very concept of patient choice is contested and used in different ways across academic, political and policy literatures [1]. Even within the NHS, patient choice may mean very different things. The NHS Choice Framework [2], for example, outlines specific markers of choice, such as a patient's choice of location of care and of the clinician they see. In contrast, other NHS policies emphasise choice in the context of the patient's right to decline treatment and to be involved in choosing test or treatment options [3]. For instance, a 2010 Government White Paper sets out a "vision of an NHS... where 'no decision about me, without me' is the norm" [4]. Likewise, the General Medical Council (GMC, the regulatory body which controls the training and accreditation of doctors in the UK) has declared that practitioners should maximise patients' opportunities and ability to make decisions for themselves [5]. Recently, the NHS 2014 Five Year Forward View announced that "empowering patients" is a key goal, with choice seen as central to achieving this outcome [6]. The issue of choice has been particularly highlighted in the management of chronic conditions (which make up a high proportion of neurological disorders), where patients often understand their diseases as well as, or better than, health professionals [7].

'Patient choice' in the NHS is, then, multi-faceted. Not only does the focus vary (i.e. choice about what?), but research in this area has used diverse definitions and measures, with 'choice' often embedded within broader concepts such as 'patient-centred care', 'patient empowerment', 'patient involvement' or 'shared decision-making' [8-11]. Moreover, despite the widespread claim - within the NHS and beyond - that good practice entails a more 'shared' (as opposed to a more 'paternalist') approach, the empirical literature offers far less consensus. For instance, only some studies investigating the association between measures of patient satisfaction and shared decision-making (SDM) have found a positive correlation [12], with some research suggesting that this depends on the extent to which patients have a preference for autonomy [13]. A systematic review of the use of decision aids "designed to help people make specific and deliberative choices among options" found that they improved patients' knowledge of treatment options and their condition, but seemed to have "no effect on satisfaction with decision-making, anxiety and health outcomes" ([12] p. 220). In contrast, a 2001 Cochrane systematic review found that interventions designed to increase patient-

centredness generally succeeded in increasing patient satisfaction [14]. However, the same review found that these interventions did not necessarily produce positive health outcomes, with some studies showing “clear negative effects” (cited in [15], p. 1374-5). This may reflect differences across demographic subgroups and patients’ presenting complaints. For instance, a review of SDM in oncology concluded that, overall SDM is associated with better outcomes and greater patient satisfaction, however there may be variability across patient groups and cancer types with respect to how involved patients want to be in decision-making processes [16].

One of the few studies to focus explicitly on choice in the NHS [17] found that patients distinguished both between having a choice and making one, and between the appearance of choice and substantive choice. Crucially, while patients valued having a (meaningful) choice, they often reported not wanting to make the final decision. In addition to this, the importance of personal ‘choice’ has varied cultural and social constructions. In some cultures choice is conceptualised as essential to autonomy and fundamental to well-being [18], while in others it may be less valued as a contributor to happiness [19]. This type of difference may make it difficult to draw general conclusions relating to choice where patients are culturally and ethnically diverse. The acknowledgment of variability amongst patients and types of choices complicates the argument that offering ‘more choice’ is necessarily better for all; arguably, the rights of patients to opt out of greater involvement in decision-making ought to be treated with as much respect as those of patients whose desires and values are in line with current policies on patient choice [20].

In an attempt to address some of these issues, we previously conducted a large, prospective conversation analytic study which was primarily designed to determine whether and how choice (regarding treatments and investigations) is implemented in two outpatient neurology settings [21]. The current study further explores these data, to try and assess how often clinicians offer such choice during consultations and how frequently neurology patients perceive it as having been offered. Secondly, we measure the degree to which patients actually value being offered choice by clinicians, by assessing the influence that the perception of such choice has on patient satisfaction. In our analyses we consider the effects of neurologists’ certainty about the diagnosis, agreement with the patient (eg. about choice), and the extent to which neurologists consider the presenting symptoms ‘medically explained’ on patients’ satisfaction with their interaction with the doctor, because these features have

been found to correlate with patient satisfaction with decision-making or satisfaction more generally in some previous studies [22-25].

2. METHODS

2.1 Participants

This prospective, multicentre study was conducted in neurology outpatient clinics at the Southern General Hospital in Glasgow and the Royal Hallamshire Hospital in Sheffield. All neurologists at the two sites were invited to participate (20 in Sheffield, 23 in Glasgow). Consecutive new and follow-up patients attending outpatient appointments between February and June 2012 in Glasgow, and April and September 2012 in Sheffield, with one of 14 participating neurologists were approached. Out of all patients informed about the study, 223 (66%) agreed to take part. Most patients (97.2% in Sheffield, 70.2% in Glasgow) were recruited in subspeciality rather than general neurology clinics (MS, epilepsy, neuromuscular, headache, neuro-oncology). All participants were 16 years or older. Only patients with capacity to give written informed consent and the ability to complete the post-interview questionnaires unaided were included.

2.2 Data and Procedure

The present data were collected as part of a larger study involving audio or video recording of consultations. Patients' demographic characteristics were recorded in a Background Information questionnaire. As well as asking about age, gender and ethnicity, patients were also asked about their current employment status, and their highest qualifications. Ethnicity was recoded into two groups: White British and Other. Education was recoded from an 8 category variable to a dichotomous variable, in which all patients were classified as either having post-school qualifications or not. The employment variable employed distinguishes between those who are currently in work, and those who are not. A further dummy variable codes for patients who are on leave or out of work due to disability or sickness, and those who are not.

Post-appointment questionnaires were also completed by both neurologists and patients immediately after the clinical encounter. The questionnaire for neurologists asked whether they had offered ‘a choice about treatment or further management’ (to which they could answer yes or no) and ‘to what extent are this patient’s symptoms explained by a medical/neurological disorder (for which they could choose between ‘completely / largely explained’, ‘partly explained / partly unexplained’ and ‘completely / largely unexplained’). They were also asked ‘how certain are you of the diagnosis’, which they rated on a ten point scale ranging from very uncertain (1) to very certain (10).

The patient questionnaires asked patients to state whether or not they had been offered “choice about any tests or treatment you might have or the next step in the management of your condition”, and included the Medical Interview Satisfaction Scale-21 (MISS-21). A variable that described whether patients and doctors agreed whether choice had been offered was derived. The categories of this variable were ‘Agree choice’ (i.e. both doctor and patient agree a choice was offered), ‘Agree no choice’, ‘Patient yes, doctor no’ (i.e. the patient believed a choice was offered but the doctor didn’t) and ‘Patient no, doctor yes’. Details about the characteristics and distributions of the above variables can be seen in Tables 1 and 2.

2.3 Measures

The MISS-21, developed from the United States MISS-29 measure, has been validated for use in UK patient populations [26]. It is a well-established 21-item self-report tool, which uses provider-patient interactions as an index of quality and patients’ perceptions and attitudes regarding their consultations [27]. Respondents rate items on a seven-point Likert scale ranging from ‘very strongly disagree’ to ‘very strongly agree’. Previous Factor analyses conducted using MISS-21 data have identified four subscales within this scale, which have been shown to represent discrete but overlapping aspects of satisfaction [26]. These four subscales have been labelled ‘distress-relief’, ‘communication comfort’, ‘rapport’ and ‘compliance intent’. The MISS-21 has been found to have satisfactory internal reliability (Cronbach’s alpha values cited as between 0.67 and 0.92 for subscales) and scores have been found positively to correlate with satisfaction with previous appointments [26].

2.4 Statistical Analysis

In view of the fact that the MISS-21 had not previously been used in neurology clinics, we initially carried out a factor analysis (principal components extraction with promax rotation) on the items captured by the MISS-21. A cut-off point of 0.5 was chosen to determine significant loading of particular items onto factors [28] (Table 3.)

The relationships between the MISS-21, its factors, and the range of clinical and interactional variables shown in Tables 1 and 2 were examined using Pearson correlation coefficients for continuous variables and ANOVA for categorical variables (see Tables 4a and 4b). All of the clinical, demographic or interactional factors showing an association (at the 0.2 level) with overall patient satisfaction were subsequently entered into three multiple regression models to assess their contribution to the overall MISS-21 score and to its two most important subscores (see Table 5).

Some individuals did not respond to all items on each questionnaire. For the purpose of analysing overall MISS-21 scores, missing values were replaced using median replacement if less than 10% of responses were missing from a particular patient. Replies with 10% or more of missing data were discounted. For other variables, listwise deletion was employed to deal with missing data. Information on the distribution of missing data can be seen in Table 1.

3. RESULTS

3.1 Sample characteristics

Table 1 shows the demographic breakdown of the sample. While participants recruited in Glasgow were significantly younger and more likely not to be working because of illness, we could not discern any clinical or demographic differences between the patients at the two different sites that suggested it would not be appropriate to combine the datasets for the analyses conducted in this study.

3.2 Choice

3.2.1 Frequency of choice

Patients perceived that they were given choice following 71.8% of encounters, whilst neurologists stated they had offered choice after 67.9% of encounters. Patients' perceptions of choice were not associated with age, gender, ethnicity, educational achievements, employment status, appointment type (new or follow-up), whether or not they were accompanied, duration of the appointment, the clinician's certainty in the diagnosis, or the clinician's gender. However, patients who attended a general neurology clinic were more likely to perceive choice being offered than those who attended a subspecialist appointment ($p=0.004$, Chi-Square=9.895). Neurologists' reports of whether they had offered choice were not associated with any of the demographic or clinical factors listed above. However, univariate analysis showed that offering choice was significantly associated with greater self-reported diagnostic certainty [certainty level 8.7 (SD 1.5) vs. 8.0 (SD 2.2), $p=0.006$, ($t=2.782$)].

3.2.2 Agreement about presence of choice

Figure 1 shows the extent of doctor-patient agreement over whether choice was offered. Just over 50% of consultations were characterized as involving patient choice by both doctor and patient. Patients and clinicians disagreed after 32% of encounters about whether or not choice had featured in the appointment. An interrater reliability analysis using the Kappa statistic was performed to determine consistency between patients and doctors. The interrater reliability for patients and doctors was found to be Kappa = 0.24 ($p = .001$). While this shows a significant link between patient and doctor, a Kappa statistic between .21 and .4 indicates only a 'fair' level of agreement [29].

Insert Figure 1 here please

3.3 Patient Satisfaction

3.3.1 Factor Analysis

The factor analysis in this study generated four factors. Table 2 shows the loading of the items on each of the four factors (three items on the MISS-21 did not contribute to any of the four factors identified). Two of the factors were very similar to the ‘rapport’ and ‘distress relief’ subscales identified in previous factor analyses of the MISS-21 [8]. Therefore, we also labelled these factors ‘rapport’ and ‘distress relief’. The remaining two subscales differed from those identified in previous research, and explained less variance in the model, so were not carried forward for further investigation. Reliability testing of the items loading onto the ‘rapport’ and ‘distress relief’ factors showed both the retained subscales had high internal reliability (Cronbach’s alpha of 0.937 and 0.873 respectively).

3.3.2 Bivariate analyses

Tables 4a and 4b show the results of analyses examining the relationships between patient satisfaction as the dependent variable, and a number of other demographic, clinical and interactional variables, as well as variables measuring choice, as independent variables.

Satisfaction was greater in the Sheffield sample, when doctors had greater diagnostic certainty, and when symptoms were considered ‘medically explained’. There were no significant correlations between satisfaction and patient’s age, gender or employment status, and the type of appointment (new versus follow-up). Satisfaction scores were not related to whether or not patients perceived that they had been offered choice and or whether clinicians believed that they had offered choice. Satisfaction scores were also unrelated to the multi-category predictor describing whether or not patient and doctors agreed that choice had been offered. However, patient satisfaction was greater when neurologists and patients agreed that choice had not been offered, compared to all other options ($F(1,172)=3.853, p=0.05$).

3.3.3 Multivariate analyses

Table 5 shows the results of the three OLS Regression models that show the extent to which different variables explain variance in the ‘rapport’ and ‘distress relief’ subscales, as well as in MISS-21 scores as a whole. As well as replicating the bivariate finding that scores in Sheffield were significantly higher, this analysis also shows that when a clinician believed that symptoms were medically explained, this had a significant positive impact on patients’ ratings of ‘rapport’, and their overall MISS-21 score. It is worth noting that if the three category ‘symptoms’ variable is treated as continuous, or dichotomised to distinguish between ‘unexplained’ and ‘partly explained / unexplained’ (results not shown here) then all three models show a significant association between ‘symptoms’ better explained by neurological disorder and greater patient satisfaction. These models also show that when clinicians were certain of the diagnosis, scores on the ‘distress-relief’ subscale were significantly higher. The bivariate finding that patient satisfaction was higher when patients and doctors both agreed choice had not been offered was not replicated in the multivariate analysis.

4. DISCUSSION AND CONCLUSION

4.1 Discussion

4.1.1 Are patients offered choice?

Our findings suggest that the neurologists included in this study have embraced NHS and GMC guidance on engaging patients in clinical decision-making processes and that patient choice features in over two thirds of clinical encounters in Glasgow and Sheffield neurology clinics, irrespective of demographic factors such as age and educational level. The fact that choice was perceived more commonly by patients who had attended general rather than subspecialist neurology appointments, and when clinicians reported greater certainty about their diagnosis, suggests that the reasons choice featured in interactions were more likely to be clinical than related to personal background or demographic factors.

Having said this, it is striking that doctors and patients disagreed after 32% of appointments on whether choice had been given or not. This finding is in line with previous work on patients' and clinicians' perceptions of clinical encounters [30]. It suggests that it is difficult to objectify the concept of 'patient choice' in interaction. What is more, it demonstrates that it is not entirely straightforward for clinicians to provide patients with choice in a way that patients perceive as such. Preliminary qualitative work has provided some reasons why clinicians' and patients' views may diverge: for instance clinicians may use the "machinery" of choice (including a list of options followed by a question eliciting the patient's view) whilst heavily 'loading' the list and actually making a strong recommendation, rather than offering a choice between evenly 'balanced' alternatives [31].

4.1.2 Does choice lead to higher patient satisfaction?

In this study we found no evidence that the provision or perception of choice increases patients' satisfaction with the clinical encounter or the clinician. Indeed, initial analyses appeared to indicate that those consultations in which doctors and patients agreed that choice had not been provided were associated with higher overall satisfaction ratings than all other encounters (although this finding was not replicated in the multivariate analysis, when whether or not patient symptoms were medically explained was taken into account). Our preliminary Conversation Analytic study [21], in which five different major types of 'no choice' consultations were identified, could be of relevance here. The five different types were consultations in which: 1) No treatment was required because there was no medical problem; 2) nothing was offered because the medical problem was not neurological; 3) nothing needed to be done because no treatment was required for the neurological problem at present; 4) nothing needed to be done because treatment for the neurological problem had been exhausted; and 5) no change was needed because the treatment for the neurological problem was working. Analysis of these interactions suggests that decisions were actually made during these clinic appointments, but it seems that "no action" or "no change" decisions are often not recognised as a matter of choice by either party involved in the interaction. Nevertheless, it is worth noting that encounters in which such decisions were made left patients feeling more satisfied than those involving decisions about changes.

The fact that ‘choice’ had no positive impact on patient satisfaction cannot be explained by a lack of sensitivity on the part of the MISS-21 instrument. While there is no universally accepted definition of ‘satisfaction’, measures like the MISS-21 are thought to capture an important dimension of the quality of care [32]. For instance, one study has shown that higher overall satisfaction ratings as measured by the MISS-21 were positively associated with subsequent symptom resolution [33]. In our study, in addition to the observation that patients expressed greater satisfaction after ‘agreed no choice’ encounters, patients reported greater satisfaction on the ‘distress-relief’ scale when the clinician was more certain about the diagnosis, **providing some additional support for the sensitivity of the scale.** Patients whose symptoms were considered ‘medically explained’ expressed greater satisfaction overall, as well as on the ‘rapport’ subscale, than those whose symptoms were thought ‘medically unexplained’. **This finding may reflect the fact that patients with ‘medically unexplained’ (or functional) neurological problems report a poor understanding of their symptoms [34]. They also tend to reject a psychological explanation of their symptoms and show marked interactional resistance when neurologists try to provide an explanation which links their symptoms with emotional or personal problems [35 36].** It has been argued that the ‘rapport’ subscale of the MISS-21 has particular clinical relevance because studies using other measures have demonstrated that interactions in which physicians are perceived as being empathic, reassuring and as showing positive affect are associated with better patient outcomes [37-41]. **The observation that patients with ‘medically unexplained’ findings reported low satisfaction on this subscale could indicate that some neurologists have a less sympathetic attitude to these patients than those with ‘medically explained’ problems [42].** This subscale has previously been used in Conversation Analytic (CA) research and been shown to be sensitive to interactional features in primary care consultations [43].

~~In our study, in addition to the observation that patients expressed greater satisfaction after ‘agreed no choice’ encounters, patients reported greater satisfaction on the ‘distress-relief’ scale when the clinician was more certain about the diagnosis. Patients whose symptoms were considered ‘medically explained’ expressed greater satisfaction overall, as well as on the ‘rapport’ subscale, than those whose symptoms were thought ‘medically unexplained’. It has been argued that the ‘rapport’ subscale of the MISS-21 has particular clinical relevance because studies using other measures have demonstrated that interactions in which physicians are perceived as being empathic, reassuring and as showing positive affect are associated~~

with better patient outcomes [34–38]. This subscale has previously been used in Conversation Analytic (CA) research and been shown to be sensitive to interactional features in primary care consultations [39]. In keeping with the findings of our study, CA studies have shown that consultations with patients whose symptoms are ‘medically unexplained’ are particularly challenging for both parties involved in the interaction [40–41].

4.1.3 Limitations of the study

Our study has a number of limitations. Although we captured the communication practice of 14 neurologists and recruited a large number of patients from a wide range of different outpatient clinics in two neuroscience centres, it is not clear to what extent the findings of this study can be generalised to other medical settings. For instance, we are likely to have captured a patient cohort with a relatively high prevalence of chronic or complex disorders. Whilst it has been argued that patient involvement in decision-making is particularly important in such patient groups [7], it may be that patient satisfaction is influenced by other factors if presentations are related to more acute disorders. Our findings may also have been affected by a lack of clarity of what we meant by the term ‘choice’ in the questionnaires completed by patients and doctors.

4.2 Conclusions

Despite these limitations, our study demonstrates that, in line with the recommendations of the UK Department of Health and the General Medical Council, ‘patient choice’ features in the majority of clinical encounters in neurology outpatient appointments. However, doctors and patients often disagree about whether choice featured in the clinic interaction. There was no evidence that choice increased patient satisfaction.

4.3 Practice Implications

This study demonstrates that government policy and GMC guidance to implement patient choice are not easily realised in practice. Clinicians and their patients do not always have the

same perception of what constitutes choice. Doctors need to be very explicit in their interactions if they want to be sure that the patient has understood that they are being given choice. Having said that, doctors should realise that ‘choice’ is not universally valued by all patients in all clinical scenarios. Importantly, the absence of ‘choice’ does not always indicate an absence of shared decision-making. Indeed, initial qualitative work on our dataset suggests that ‘choice’ might not be the defining feature of shared decision-making. Further work needs to be done to establish whether there are particular interactional scenarios in which patients value ‘choice’ more highly.

Patients appear to value being given a certain and medically-based diagnosis for their symptoms. In situations where this is possible, patients rate their rapport with their clinician as greater, and their overall satisfaction as higher.

FOOTNOTES

Contributors: MR, MT, RD and RS were involved in the development of the study, the design of the data collection tools and the collection of data. HW and PC analysed the data. HW drafted the paper and all other authors provided input for revisions. MR is guarantor.

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Competing interests: All authors have completed the Unified Competing Interest form at www.icmje.org/coi_disclosure.pdf (available on request from the corresponding author) and declare that HW, MR, MT, RD, RS, and PC have had no support from any organisation for the submitted work, no financial relationships with any organisations that might have an interest in the submitted work in the previous three years, and no other relationships or activities that could appear to have influenced the submitted work.

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Data sharing: no additional data available.

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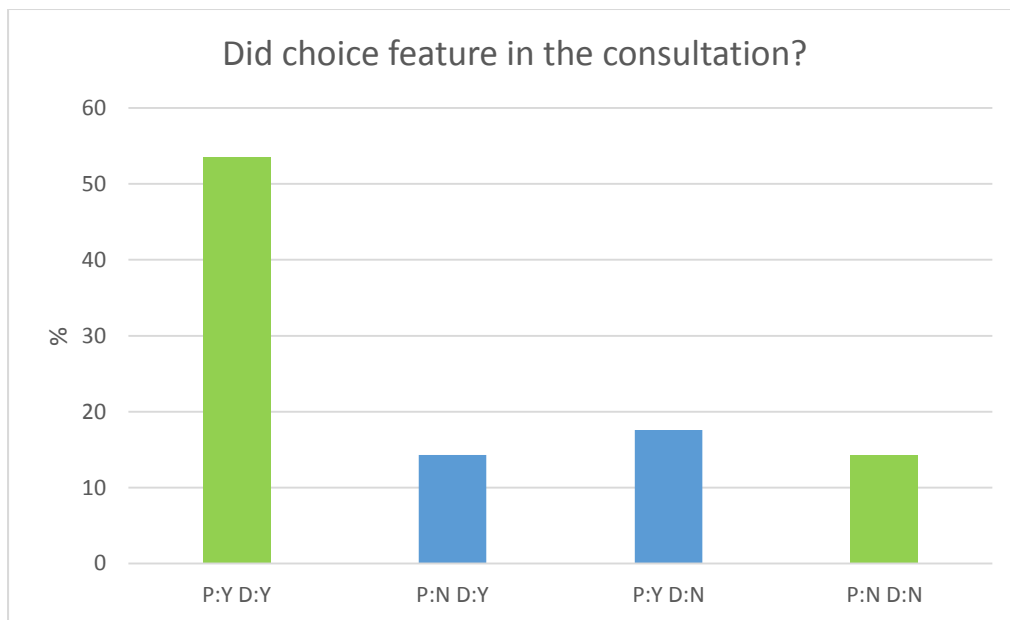
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Figure 1. Did choice feature in the consultation?



Note. P: Patient; D: Doctor; Y: Yes, there was choice; N: No, there was no choice

Table 1. Characteristics of consultations stratified by location.

	Sheffield	Glasgow	Combined	Difference Glasgow vs. Sheffield
<u>Neurologists</u>				
N	7	7	14	-
Age (years)	43.7	41.4	42.6	n.s.
% Female	42.9	42.9	42.9	n.s.
<u>Patients</u>				
N	109	114	223	-
Age (years)	49.1	41.4	42.6	**
MISS-21	101.0	95.0	98.0	***
% Female	53.8	65.8	59.9	n.s.
% White British	89	96.5	92.8	n.s.

% Without post-school qualifications	39.2	31.0	34.9	n.s.
% In work / education	45.9	37.7	41.7	n.s.
% On leave / out of work because of sickness / disability	16.7	33.3	25.3	**
<u>Consultations</u>				
N	109	114	223	-
Diagnostic certainty (1-10)	8.27	8.65	8.47	n.s.
% Accompanied	46.8	52.6	49.8	n.s.
% First appointment	26.7	32.1	29.3	n.s.
% Seen in general clinics	2.8	29.8	16.7	***
% Completely / largely explained	72.5	53.5	62.8	** ^a
% Partly explained, partly unexplained	19.3	26.3	22.9	** ^a
% Completely / largely unexplained	3.7	17.5	10.8	** ^a
% Patient perceived choice	74.3	69.3	71.8	n.s.
% Doctor perceived choice	66.0	69.6	67.9	n.s.
<u>Patient / doctor agreement on choice</u>				
N	97	100	197	-
% Agree choice	52.6	55.0	53.8	n.s. ^a
% Agree no choice	11.3	17.0	14.2	n.s. ^a
% Patient yes doctor no	14.0	21.6	17.8	n.s. ^a
% Patient no doctor yes	14.4	14.0	14.2	n.s. ^a

***p≤.001, ** p≤.01, *p≤.05, ~p≤.10

Note. Significance tests marked ^a show Chi square results of comparisons between all categories of the dependent variable in question.

Table 2. Descriptive characteristics of continuous variables

	N	Min	Max	Mean	S.D.	Skew	Kurtosis
<u>Age</u>	221	17	80	46.3	15.3	-.11	-.47
<u>Certainty</u>	217	1	10	8.5	1.8	-1.46	2.65
<u>Rapport</u>	184	-2.35	1.36	0	.98	-.26	-1.35
<u>Distress-relief</u>	184	-3.04	1.59	0	.96	-.46	.30
<u>Total</u> <u>MISS-21</u>	189	63	132	98.0	11.0	-.08	.88

Table 3. Loadings of items of the MISS-21 on four factors generated by factor analysis.

Item	Rapport	Distress-Relief	Doctor's Understanding	Communication Difficulties
1.The Doctor told me just what my trouble is	.052	.918*	-.197	-.094
2.After talking with the doctor, I know just how serious my illness is	.090	.917*	-.166	-.015
3.The doctor told me all I wanted to know about my illness	.107	.809*	-.064	-.159
4. I am not really certain about how to follow the doctor's advice	-.119	-.058	.116	.717*
5. After talking with the doctor, I have a good idea how long it will	-.312	.769*	.352	.057

be before I am well again

6. The doctor seemed interested in me as a person	.827*	.107	.043	.146
7. The doctor seemed warm and friendly to me	.964*	-.058	-.001	.060
8. The doctor seemed to take my problems seriously	.871*	-.068	.027	-.112
9. I felt embarrassed while talking with the doctor	-.012	-.168	.007	.758*
10. I felt free to talk to this doctor about private matters	.732*	-.057	.028	-.079
11. The doctor gave me a chance to say what was really on my mind	.867*	-.024	.040	.021
12. I really felt understood by my doctor	.811*	.102	.058	-.034
13. The doctor did not allow me to say everything I had wanted about my problems	-.226	.106	-.406	.212
14. The doctor did not really understand my main reason for coming	-.122	.118	-.616*	.298
15. This is a doctor I would trust with my life	.499	-.006	.430	.062
16. The doctor seemed to know what s/he was doing	.663*	.064	.117	-.124
17. The doctor has relieved my worries about my illness	-.046	.500*	.582*	.105
18. The doctor seemed to know just what to do for my problem	.245	.489	.350	.083
19. I expect that it will be easy for me to follow the doctor's advice	.237	-.036	.740*	.150
20. It may be difficult for me to do exactly what the doctor told me to	.165	.081	-.472	.564*

do

21. I'm not sure the doctor's treatment will be worth the trouble it will take .091 .027 -.504* .411

*Item loads on to this factor (>0.5)

Table 4a. Satisfaction dimensions and continuous clinical / interactional variables.

		Rapport	Distress-Relief	Overall MISS-21 Score
Age	n	183	183	188
	Correlation	-0.070	0.056	.001
	p-value	0.346	0.454	.998
Diagnostic certainty	n	182	182	187
	Correlation	-0.002	0.298***	.131~
	p-value	0.979	0.000	.074

***p≤.001, ** p≤.01, *p≤.05, ~p≤.10

Table 4b. Satisfaction dimensions and categorical clinical / interactional variables

	Rapport		Distress Relief		Overall MISS-21	
	Mean	t-test or ANOVA (p-value)	Mean	t-test or ANOVA (p-value)	Mean	t-test or ANOVA (p-value)
Gender						
N	184		184		189	
Male	-.07	.47	-.04	.53	97.22	.45
Female	.04		.03		98.47	
Location						
N	184		184		184	
Sheffield	.32	.00**	.28	.00**	101.0	.00**
Glasgow	-.33		-.27		95.01	
Ethnicity						
N	175		175		180	

White British	-.01	.74	.02	.16	98.07	.63
Other (n=9)	.11		-.44		96.22	
Education						
N	154		154		158	
Post-school qualifications	.07	.84	.04	.73	99.37	.49
No post-school qualifications	.04		.09		98.14	
Employment status						
N	184		184		189	
On leave – ill health	.14	.24	-.01	.91	99.50	.27
Not on leave	-.05		.00		97.46	
Accompanied?						
N	184		184		189	
Yes	.08	.32	-.01	.89	98.71	.38
No	-.07		.01		97.29	
First appointment?						
N	145		145		150	
Yes	.068	.78	-.05	.40	98.17	.73
No	.02		.08		98.85	
Seen in general clinic?						
N	184		184		189	
Yes	-.27	.11	-.21	.20	94.63	.07~
No	.05		.04		98.62	
Patient perceived choice						
N	174		174		179	
Yes	.02	.69	.07	.29	98.60	.39
No	-.05		-.10		97.02	
Doctor perceived choice						
N	179		179		184	
Yes	.00	.97	.04	.32	98.17	.75
No	-.00		-.11		97.60	
<u>Choice^a</u>						
N	169		169		174	
Agree choice	.01	.84	.06	.42	97.96	.88
Agree no choice	-.09	.63	-.25	.16	94.17	.05~
Patient yes doctor no	.06	.74	.09	.63	100.9	.13

Patient no doctor yes	.01	.99	-.03	.80	99.78	.46
Symptoms ^a						
N	184		184		189	
Completely / largely explained	.12	.03*	.21	.00***	99.91	.00**
Partly explained, partly unexplained	-.16	.22	-.42	.00**	95.49	.09~
Completely / largely unexplained	-.54	.01*	-.48	.03*	91.10	.00**

***p≤.001, ** p≤.01, *p≤.05, ~p≤.10

Note. Significance tests for variables marked ^a show results of dichotomous dummy comparison of mean tests between the category in question and all other valid cases.

Table 5. Series of regression models examining the relationship between satisfaction scores (MISS-21), characteristics of the clinician appointment and patient characteristics

	Rapport B(SE) (95% CI)	Distress-Relief B(SE) (95% CI)	MISS – 21 B(SE) (95% CI)
Location	.60*** (.40) (.30 – .89)	.57** (.15) (.27 – .87)	4.49* (1.75) (1.03 – 7.96)
Patient ethnicity	--	-.43 (.30) (-1.03 – .17)	--
Seen in general clinic?	.00 (.20) (-.39 – .40)	.01 (.20) (-.40 – .39)	2.62 (2.48) (-2.26 – 7.51)
<u>Agreement on choice</u>			
Agree no choice	--	.10 (.24) (-.57 – .38)	4.44 (2.82) (-1.13 – 10.02)
Agree choice	--	-.03 (.18) (-.38 – .32)	2.97 (2.20) (-1.36 – 7.31)
Patient no doctor yes	--	-.09 (.24) (-.57 – .38)	-.26 (2.89) (-5.95 – 5.44)
<u>Symptoms</u>			
Completely/ largely explained	.26~ (.22) (-.18 – .70)	.25 (.23) (-.25 – .64)	5.50* (2.60) (.37 – 10.63)
Partly explained, partly unexplained	.08 (.25) (-.40 – .56)	-.80 (.24) (-.56 – .40)	2.81 (2.79) (-2.69 – 8.31)
Certainty	--	.12** (.05) (.04 - .21)	.36 (.48) (-.57 – 1.30)
N	168	167	172
R-squared	.119	.214	.146

***p≤.001, ** p≤.01, *p≤.05, ~p≤.10

Note. Reference groups for Symptoms and Agreement on choice categorical variables are Patient yes doctor no and Completely / largely unexplained.