

## Effects of referral to a specialist for headache<sup>1</sup>

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**Summary:** Patients consulting neurological outpatient clinics for headaches that were found not to be due to a serious structural lesion were followed up one year afterwards. Considerable improvement in symptoms was found in the sample. This was only partly attributable to any medical treatment received at the clinics or subsequently from a general practitioner. Improvement was associated with previously expressed satisfaction with the clinic consultation, and a nonspecific 'placebo' response is postulated.

### Introduction

A substantial part of the work in outpatient clinics of such specialties as gastroenterology, cardiology and neurology is the management of symptoms which have no clearly-defined basis in structural disease. The outcome of such management has only recently begun to receive attention (Mayou 1976). Neurologists are particularly concerned with the management of headache. It has been found that there is a reduction in subsequent consultations with the general practitioner by patients who have consulted a neurologist for their headaches (Grove *et al.* 1980, Fitzpatrick & Hopkins 1981), but it is not known if this is due to significant improvement in symptoms, nor how such improvements might be produced.

This paper reports the long-term outcome of referrals to neurology clinics in patients with headache not due to structural lesions, and identifies aspects of patients' experiences of referral that appear to be responsible for the subsequent outcome.

### Methods

A sample of patients was obtained from the clinics of 18 neurologists working in 11 different hospitals in two Regional Health Authorities. The criteria for inclusion in the study were any patient who: (1) was a new referral for headache rather than a 'follow-up'; (2) was aged 16 or over; and (3) was not suspected after investigation of having a serious organic lesion responsible for the presenting symptoms.

Ninety-five patients were interviewed before their first consultation with the neurologist and again between two and three weeks afterwards in the patient's home. One year later 75 of the sample were reinterviewed at home. The majority of the 20 who were not reinterviewed had either moved address or could not be recontacted.

All three interviews were tape-recorded and guided by a 'non-schedule standardized interview' (Brown & Rutter 1966) designed to encourage maximum expression of the respondent's own views. From the history of symptoms obtained in the hospital interview, patients were graded according to a 6-point scale of frequency of headaches (ranging from 'every day' to 'less than once a month'), and an 8-point scale for the typical period of time their headaches lasted (ranging from 'more than 5 days' to 'less than half an hour').

In the second interview, soon after the hospital consultation, a fuller account was obtained of their history of headaches, prior medical treatment, circumstances of referral and satisfaction with their hospital consultation. The ratings of satisfaction discussed in this paper are the research rater's assessment, from the tapes of interviews, of the predominant reactions

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of patients to their consultation. The patients described as dissatisfied expressed very strong disappointment in both the content and tone of their comments. The remaining patients were satisfied in varying degrees.

In the third interview, one year later, information was obtained on the progress of symptoms, compliance with medication and further use of health services. The information regarding symptoms made it possible to grade respondents on the scales of frequency and typical duration of headaches used before.

Neurologists were interviewed with regard to their diagnoses and management of the sample.

### Results

The social and medical characteristics of patients referred to hospital with headache have been described elsewhere (Fitzpatrick & Hopkins 1981). Only details essential to an understanding of the main results of the paper are given here. The sample was quite young (average age 36.8 years) and contained slightly more middle-class individuals than expected. The majority of patients (69%) were female.

In general, the headaches presented were quite severe and, on all dimensions that allowed comparison with a community sample of headache sufferers (Waters 1974), their symptoms were worse. Thus 40% of the outpatient sample compared to only 5% of Waters' sample were suffering headaches twice-weekly or more frequently. Thirty percent had suffered their headaches for more than ten years. The most common diagnoses given by the neurologists were 'migraine' (53%), 'tension headache' (32%) and 'migraine combined with tension headache' (6%).

Of the 75 patients in the follow-up study, 55 (73%) had received a prescription as a result of their consultation. For migraine patients this was most likely to be a prophylactic treatment such as clonidine, or symptomatic treatment such as ergotamine. The most frequently-prescribed medications for tension headache were benzodiazepines or antidepressants.

Eighteen of the 75 patients were rated as seriously disappointed or dissatisfied with the doctors' medical actions when interviewed after their consultations. The focus of such disappointed responses was most commonly either on superficial or limited history-taking by the specialist, or a failure to obtain a physical examination or desired technical investigations. The remaining 57 patients were rated, in varying degrees, as satisfied.

One year later the sample had experienced considerable improvement in their headaches. Firstly, respondents were asked for their own assessment of improvement over the year. Seventy-one percent felt that their headaches were less frequent, and 59% that their headaches were less severe in terms of pain compared with the period prior to the hospital consultation. It was also possible to compare patients before and one year after the hospital visit on the scales of frequency and typical duration of headache episodes. As a conservative measure of improvement, only patients who actually changed scale point in the necessary direction were

*Table 1. Percentage of patients improved on four outcome variables according to whether or not they were satisfied with the doctor's actions one year previously*

Satisfaction one year prior to assessment	Improvement measures at one year			
	Patients' own assessment		Comparison of scores	
	Severity (PAS)	Frequency (PAF)	Duration (CSD)	Frequency (CSF)
Satisfied ( <i>n</i> =57)	67 ●	74	61 ■	61
Dissatisfied ( <i>n</i> =18)	33	61	33	41

$\chi^2$  shows significant difference at ●  $P < 0.02$ , and at ■  $P < 0.05$

included as improved. This comparison of scores resulted in improvement being shown by 56% in respect of the frequency of their headaches, and by 58% in respect of the typical duration of symptoms.

One variable, measured at the time of the hospital consultation, was particularly associated with improvement. Patients rated as satisfied were much more likely to show improvement in symptoms (Table 1). With regard to two measures of improvement – the patient's own assessment of severity (PAS) and the comparison of scores of typical duration (CSD) – the differences between satisfied and dissatisfied patients are significant.

The simplest interpretation of these results is that patients who received prescriptions for medication from the neurologist were more likely to express satisfaction and also to show symptomatic improvement as a result of medication. The contribution to improvement that in principle could be due to medication proved, however, to be modest. Generally, patients who received a prescription for medication did not show much more improvement than other patients on the two measures of outcome found to be associated with satisfaction (Table 2). Two groups of patients, those who received a psychotropic medication and those who received a miscellaneous group of 'other' medications such as antiemetics, showed somewhat more improvement. If patients who received these two categories of medication are combined and considered in relation to satisfaction and outcome (PAS), the influence of satisfaction and medication upon improvement seem independent: for example amongst those who did not receive a helpful medication, 61% of the satisfied compared with 17% of the dissatisfied patients assessed their headaches as improved ( $P < 0.01$ ). Overall the influence of medication upon outcome is modest, partly because only 13 out of 55 patients claimed to have taken their prescriptions as advised.

There are three possible interpretations of the association between satisfaction and outcome that require consideration. One such interpretation is that patients whose histories were of a sudden, recent onset were likely to be of particular concern to neurologists, receive more attention and, hence, be more satisfied with treatment. These same patients were much more likely to improve than more chronic headache sufferers. However, length of history does not appear to be responsible for a spurious relationship. Patients with histories of less than six months' length were predominantly satisfied (24 out of 26) but fewer (57%) experienced improvement than amongst patients with longer histories (62% improved) in relation to PAS.

A related possibility is that patients in particular diagnostic categories could have received more careful attention from the specialist and quite independently were more likely to have more self-limiting symptoms. The diagnostic group more likely to be more self-limiting is tension headache. Indeed, a higher proportion (85%) of the patients diagnosed as having

Table 2. Percentage of patients improved according to whether they were given any drug treatment, and the type of drug given

Drug treatment received at hospital	Improvement measures	
	Patients' own assessment Severity (PAS)	Comparison of scores Duration (CSD)
Analgesic: Yes ( $n=9$ )	33	22
No ( $n=66$ )	62	58
Vasoconstrictor: Yes ( $n=28$ )	57	50
No ( $n=47$ )	60	57
Psychotropic: Yes ( $n=23$ )	74	59
No ( $n=52$ )	52	52
'Other': Yes ( $n=6$ )	67	33
No ( $n=69$ )	58	56
Given any drug: Yes ( $n=55$ )	62	52
No ( $n=20$ )	50	60

tension headache were found to be satisfied with their treatment than in the rest of the sample (71%). They were no more likely (60%), however, than the rest of the sample (58%) to assess their headaches as improved.

For many patients hospital referral may have arisen out of a temporary exacerbation of a fluctuating disorder. The improvement subsequently shown in the sample could therefore have arisen despite the hospital visit. Detailed descriptions of symptoms a few months prior to referral made possible a distinction between patients who were referred at a time when their symptoms were deteriorating and patients who described their symptoms as stable. If improvement in the sample were primarily due to autonomous fluctuations in symptoms, it would be reasonable to expect more improvement to occur in patients whose symptoms had hitherto deteriorated. Moreover, the relationship between state of symptoms prior to referral and subsequent improvement might explain the relationship between satisfaction and improvement. Descriptions of their symptoms prior to referral were available for 73 patients, of whom 41 (56%) had a recent history of deteriorating symptoms and 32 (44%) had a history of stable symptoms. However, the proportion improving on the two measures (PAS and CSD) among the patients with stable symptoms – 61% on both measures – was not significantly different from the proportion improving amongst those with deteriorating symptoms, 59% and 51% respectively. Moreover, there was no association between state of symptoms before referral and satisfaction: 78% with stable symptoms and 73% with deteriorating symptoms were satisfied.

An alternative influence over symptomatic improvement that was considered was the further use by patients of medical treatment. One consequence of the hospital referral was a reduction in frequency of visits to their general practitioner in the following year for headaches compared with a comparable period before the referral. Nevertheless, 37% did seek further treatment from their doctor for headaches. However, a smaller proportion of this group (50%) showed improvement than amongst those who had not further consulted their doctor (68%).

## Discussion

The sample of patients attending neurological clinics had experienced considerable improvement in their headaches when assessed one year later. Only a small proportion of improvement was associated with receiving medication. It is tempting to suggest that the experience of the hospital referral itself had a significant therapeutic influence independently of consciously-offered treatment. Neurologists offer authoritative diagnoses and reassurance that might play such a role. The reporting of headache symptoms alone may reduce their severity (Porter *et al.* 1981). Treatment by biofeedback may primarily improve headaches by nonspecific mechanisms such as enhancing the patient's sense of mastery (Cohen *et al.* 1980).

Confidence in such an interpretation is strengthened by two findings. Firstly, patients whose symptoms had deteriorated prior to the decision to refer, and who could be expected to experience a certain return to normal levels of severity regardless of the impact of the referral, did not in fact experience more improvement. Secondly, patients rated as satisfied with the doctor's actions at the hospital showed significantly more improvement. Patients who were seriously disappointed did less well. These associations could be interpreted as indicating that patients who felt the consultation personally valuable in relation to their concerns experienced improvement due to nonspecific 'placebo' mechanisms resulting from the social significance of seeing a specialist.

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