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# Migraine in general practitioners

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**Waters, W. E. (1975).** *British Journal of Preventive and Social Medicine,* **29**, 48-52. **Migraine in general practitioners.** A self-administered questionnaire was posted to 1 129 medical general practitioners in an urban and in a rural area of England. The prevalences of headache, and of the features of migraine, in the year immediately preceding the survey were similar in the two areas. After allowing for the different age and sex composition of the populations, these prevalences were also similar to those found in the general population during an earlier survey in Wales. About 13% of the male and 25% of the female general practitioners thought that they had had migraine in the previous year. There was little evidence that doctors with 'classic' migraine differed from those with 'common' migraine in the proportion who experienced other migrainous features (unilateral distribution of headache and accompanying nausea) or in their response to treatment with ergotamine.

Migraine is one of the most prevalent diseases but until recently there has been remarkably little precise information on its epidemiology. A self-administered questionnaire on headache and the various features of migraine has been developed, and the responses to this questionnaire have been compared with a neurologist's clinical diagnosis of migraine (Waters and O'Connor, 1971). Epidemiological studies (Waters, 1973) using this questionnaire have emphasized the difficulty, in community studies, of obtaining a clear separation of migraine from other headaches. It is therefore appropriate in comparing two or more populations to assess the prevalence of headache and also the prevalence of each of the individual features of migraine. From the clinical validation of the questionnaire (Waters and O'Connor, 1971) the three questions that correlated best with the neurologist's diagnosis were whether (1) the headache had a unilateral distribution, (2) the headache was preceded by any symptoms that gave a warning of the attack, and (3) the headache was accompanied by nausea. These are the three features of migraine given in detail in this paper.

A survey of headache and migraine in general practitioners was conducted in two contrasting areas of England. The results are compared with data from the survey of a random sample of the general adult population in which a similar questionnaire which has been published (Taylor *et al.*, 1970) was used. This comparison provides new data to test further the long-standing hypotheses that migraine is more prevalent in the higher social classes (Fothergill, 1784) and that it is more prevalent in towns than in rural areas (Wight, 1871). In addition, it provides a personal medical diagnosis in relation to the answers obtained from the standard questions of the self-administered questionnaire. In particular, it allows analysis of migraine features such as teichopsia and scotomata which have been found more difficult to evaluate from questionnaires completed by lay individuals

## Method

Active general medical practitioners who were on the mailing lists of the Medical Mailing Company in two areas were sent a letter enclosing a self-administered questionnaire on headache and the features of migraine, and a stamped addressed envelope for its return. If there was no reply, a reminder letter was sent with another copy of the questionnaire and a further stamped addressed envelope. The survey was done in the spring of 1972, in the mainly rural region of Devon and Cornwall and the more urban county of Staffordshire.

The data in this paper for the general population are derived from a random sample of nearly 2,000

adults sampled from the electoral roll who were living in the northern part of the Pontypridd constituency (Glamorgan) in 1968 (Waters, 1971a).

## Results

The sample consisted of 1 034 male and 95 female general practitioners in the two areas. Questionnaires were returned by 811 (78·4%) and 71 (74·7%) of the doctors respectively. Full details of the sample and response rates, and a preliminary analysis of some of the questions, have been reported (Waters, 1972).

The prevalence of individuals with headache in the year immediately preceding the surveys is shown (Fig. 1). The prevalence of headache declined with age, but there was little difference between doctors in the two areas and little difference between medical practitioners and the general population in South Wales. Among those with headache the percentage who had a headache with a unilateral distribution (Fig. 2), with a warning that the attack was coming (Fig. 3), and with accompanying nausea (Fig. 4) is also similar in the doctors of Devon and Cornwall, the doctors of Staffordshire, and the general population in South Wales.

Table I shows the distribution of doctors by the pattern of their headaches in the previous year. It also shows the number who thought that they had had migraine in the previous year in relation to the features of their headaches. Nearly half the male doctors who reported migraine had had headaches with the three migraine features (unilateral distribution, warning, and nausea) occurring at some time in the previous year. The prevalence of migraine in the previous year, based on the general practitioner's own diagnosis, was 14% at ages up to 34 and at 35-54 years, and 12% over the age of 55.

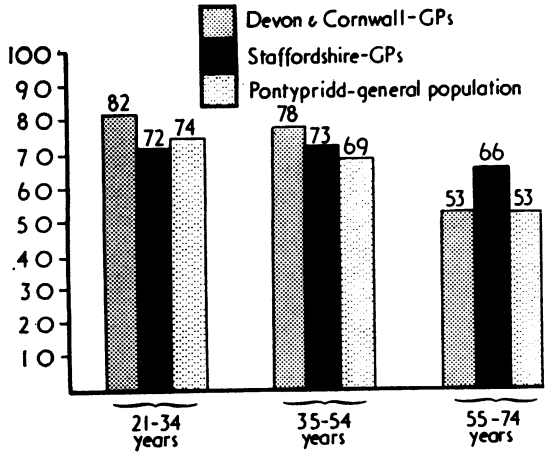


FIG. 1. Prevalence of headache in men in the year immediately preceding the surveys.

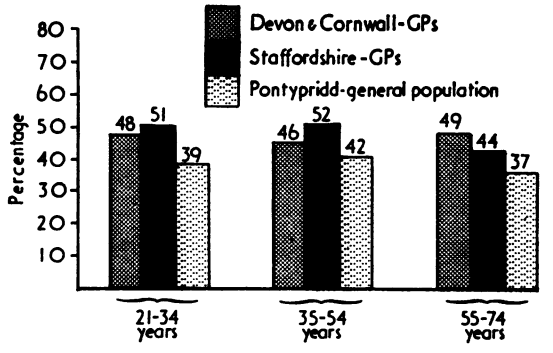


FIG. 2. Percentage of men with headache who had a headache with a unilateral distribution in the preceding year.

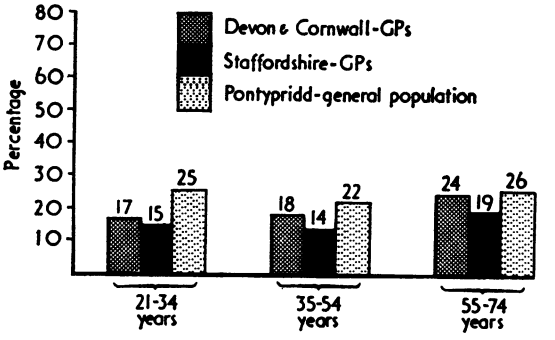


FIG. 3. Percentage of men with headache who had a warning that a headache was coming in the preceding year.

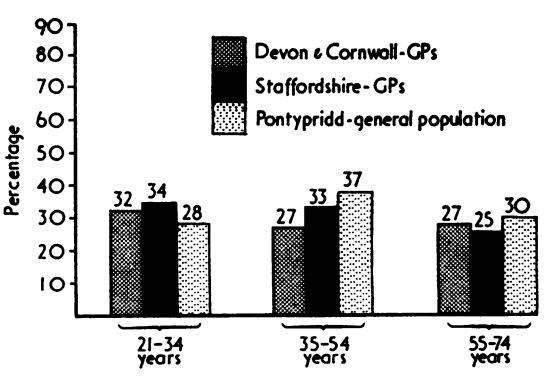


FIG. 4. Percentage of men with headache who had accompanying nausea and/or vomiting in the preceding year.

TABLE I

DISTRIBUTION OF GENERAL PRACTITIONERS (BOTH AREAS COMBINED) BY PATTERN OF HEADACHE AND NUMBER DIAGNOSING MIGRAINE IN PREVIOUS YEAR

| Pattern of Headache (previous year) | Males | | | | Females | | | |
|---|---|---|---|---|---|---|---|---|
| | No. in Group* | % | Diagnosed as Migraine | | No. in Group | % | Diagnosed as Migraine | |
| | | | No. | % | | | No. | % |
| No headache | 233 | 28·9 | 0 | 0 | 14 | 19·7 | 0 | 0 |
| Headache only | 223 | 27·7 | 3 | 1·3 | 18 | 25·4 | 2 | 11·1 |
| Unilateral headache only | 142 | 17·6 | 12 | 8·5 | 12 | 16·9 | 3 | 25·0 |
| Headache + warning only | 14 | 1·7 | 5 | 35·7 | 0 | 0 | 0 | 0 |
| Headache + nausea only | 49 | 6·1 | 5 | 10·2 | 3 | 4·2 | 0 | 0 |
| Unilateral headache + warning | 24 | 3·0 | 16 | 66·7 | 3 | 4·2 | 2 | 66·7 |
| Unilateral headache + nausea | 60 | 7·4 | 17 | 28·3 | 14 | 19·7 | 7 | 50·0 |
| Headache + warning + nausea | 6 | 0·7 | 2 | 33·3 | 1 | 1·4 | 0 | 0 |
| Unilateral headache + warning + nausea | 55 | 6·8 | 47 | 85·5 | 6 | 8·5 | 4 | 66·7 |
| Total | 806* | 100·0 | 107 | 13·3 | 71 | 100·0 | 18 | 25·4 |

*Five doctors did not answer all questions and cannot therefore be included in this table.

Overall 18 out of 71 (25%) female general practitioners thought that they had had migraine in the previous year. The figures are similar to that estimated in other surveys (Waters, 1974).

Table II gives details of the 99 (12%) male general practitioners who answered positively to the question 'Before you get a headache do you know that one is coming? If you do, please describe briefly what you notice'. For the four different classes of warning, other features of the headaches and the response to treatment with ergotamine (which is sometimes regarded as specific treatment for migraine) are given. The mean severity of the headaches was obtained by asking each individual to select from a ranked series of seven statements the one that was nearest the truth for his (severe) headaches. These statements ranged from 'My headaches are very mild' (severity 1) to 'My headaches are almost unbearable' (severity 7).

Table III shows that the more migrainous features (unilateral distribution of headache, warning, and nausea) the individuals had experienced in the previous year, the more likely they were to say that they had had migraine. The three features are analysed separately in Table IV, which shows that 71% of the men and 60% of the women, with a warning that the headache was coming, diagnosed themselves as migraine. Unilateral distribution of headache and accompanying nausea were less likely to lead to a diagnosis of migraine. This is reasonable in that these features could be due to causes other than migraine. However, the older names for migraine, 'hemicrania' and 'sick-headache', refer specifically to these two symptoms.

Only 45 out of 578 (7·8%) male doctors and six out of 57 (10·5%) female doctors with headaches had taken ergotamine during the previous year. The majority of those diagnosing themselves as migraine had not taken ergotamine in the previous year. The response to ergotamine is shown in Table V. Three male doctors took ergotamine by both oral and other routes. Only six out of 38 male doctors taking oral ergotamine reported no improvement but it should be remembered that these figures refer to those taking ergotamine in the previous year only. They are therefore probably a selected group in that those who had previously received little benefit from ergotamine may be less likely to continue to use this drug.

## DISCUSSION

One of the problems in comparing the general practitioners with the adult population in the Welsh survey, and also comparing the data from doctors in the two areas, concerns the different response rates. It is likely that those who do not reply to the questionnaire are less likely to have headache and migraine (Waters, 1972). If this is so, the data from this survey slightly over-estimate the prevalences of headache and migraine in doctors.

It has long been thought that migraine occurs more often in the higher social classes although the recent survey in Pontypridd found no evidence

TABLE II

DISTRIBUTION OF MALE GENERAL PRACTITIONERS WITH A WARNING THAT THEIR HEADACHES WERE COMING AND OTHER VARIABLES, ALL IN PREVIOUS YEAR

| Type of Warning | No. of Individuals | Mean Severity of (Severe) Headache* | Ergotamine: Number Orally | Ergotamine: Number Other Routes | Ergotamine: No. with Considerable Benefit Orally | Ergotamine: No. with Considerable Benefit Other Routes | Other Features present: Uniteral Distribution No. | Uniteral Distribution % | Nausea No. | Nausea % | No. Diagnosed as Migraine |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Group 1 Mood changes, malaise, dizziness | 35 | 3·29 | 4 | 3 | 4 | 3 | 22 | 62·9 | 16 | 45·7 | 10 |
| Group 2 Accommodation defects, aching or watering eyes, pressure around eyes, photophobia and other minor visual disturbances | 15 | 3·29 | 3 | 1 | 2 | 0 | 14 | 93·3 | 11 | 73·3 | 14 |
| Group 3 Teichopsia, scotomata, and hemianopia | 35 | 3·32 | 16 | 1 | 10 | 0 | 31 | 88·6 | 21 | 60·0 | 35 |
| Group 4 Nausea, vomiting, paraesthesiae (but not symptoms in group 3) | 14 | 4·29 | 4 | 0 | 3 | 0 | 12 | 85·7 | 13 | 92·9 | 11 |

*See text.

TABLE III

DISTRIBUTION OF MALE GENERAL PRACTITIONERS WITH HEADACHE BY NUMBER OF MIGRAINE FEATURES AND NUMBER DIAGNOSING MIGRAINE IN PREVIOUS YEAR

| No. of Migraine Features | No. of Individuals | Percentage of those with Headache | Diagnosed as Migraine No. | Diagnosed as Migraine % |
|---|---|---|---|---|
| Headache only .. | 223 | 38·9 | 3 | 1·3 |
| Headache + 1 feature .. | 205 | 35·8 | 22 | 10·7 |
| Headache + 2 features | 90 | 15·7 | 35 | 38·9 |
| Headache + 3 features .. | 55 | 9·6 | 47 | 85·5 |
| Total .. | 573 | 100 | 107 | 18·7 |

TABLE IV

PROPORTION OF GENERAL PRACTITIONERS DIAGNOSING MIGRAINE IN RELATION TO INDIVIDUAL FEATURES OF THEIR HEADACHE IN PREVIOUS YEAR

| Feature* | No. of Individuals | Percentage of those with Headache | Diagnosed as Migraine No. | Diagnosed as Migraine % |
|---|---|---|---|---|
| Men | | | | |
| Unilateral distribution | 281 | 49·0 | 92 | 32·7 |
| Warning | 99 | 17·3 | 70 | 70·7 |
| Nausea .. | 170 | 29·7 | 71 | 41·8 |
| Women | | | | |
| Unilateral distribution | 35 | 61·4 | 16 | 45·7 |
| Warning | 10 | 17·5 | 6 | 60·0 |
| Nausea .. | 24 | 42·1 | 11 | 45·8 |

*Features are not mutually exclusive

TABLE V

RESPONSE TO ERGOTAMINE, IN RELATION TO WARNING THAT HEADACHE WAS COMING, IN MALE GENERAL PRACTITIONERS IN PREVIOUS YEAR

| Route of Administration | Headache | No Improvement | Slight Benefit | Considerable Benefit | Total |
|---|---|---|---|---|---|
| Oral .. .. | With warning | 3 | 5 | 19 | 27 |
| | Without warning | 3 | 4 | 4 | 11 |
| Other .. .. | With warning | 0 | 2 | 3 | 5 |
| | Without warning | 0 | 0 | 5 | 5 |

that this was so (Waters, 1971b). A possible criticism of the Pontypridd survey is that there is a relatively small number of individuals in the migraine group (and only 16 of these were in social classes I and II). The present survey, with large numbers of individuals in a professional class, gives no evidence that headache and migraine are any more prevalent in doctors than in the general population. The study of migraine and 'migrainoid headaches' in Danish doctors also gave prevalences similar to those found in the general population (Dalsgaard-Nielsen and Ulrich, 1973). The comparison between mainly rural Devon and Cornwall and largely urban Staffordshire does not support the hypothesis that 'dwellers in towns are more subject to headaches than those living in the country' (Wight, 1871), although more detailed studies in smaller areas would be more sensitive to test this hypothesis than the present comparison between counties (see Waters, 1974).

Migraine is hard to diagnose in community surveys and this difficulty directly follows from the present definitions. These are usually descriptions of a typical attack (Ad Hoc Committee on Classification of Headache, 1962) and do not state how many of the characteristic features must be present in one individual to establish a diagnosis of migraine. Migraine has no known morbid anatomy and at present no diagnostic laboratory test. The data in Table I show that there is no consensus among general practitioners about which migraine features must be present to establish the diagnosis. There is however a suggestion that a warning preceding the headache is the best 'predictor' of the diagnosis by general practitioners. Definitions often classify migraine into 'classic' (with a sharply defined prodrome) and 'common' (without a striking prodrome) varieties. Using this classification as given by the Ad Hoc Committee, warning symptoms in groups 1 and 2 in Table II would probably be 'common' migraine and in groups 3 and 4 'classic' migraine. All groups have headaches of similar severity (except that those with preceding nausea, vomiting or paraesthesiae had the most severe headaches). There is no evidence that those with striking visual prodromes (group 3: with teichopsia, scotomata or hemianopia) are more likely also to have other migraine features (unilateral distribution of headache, accompanying nausea) than those with less striking visual prodromes (group 2). Further, there was no evidence that those with teichopsia, scotomata or hemianopia responded better to treatment with ergotamine than those who took treatment in groups 1, 2, and 4. In any classification of headache based on symptoms, it should also be demonstrated that the different varieties differ in some other important way, e.g., aetiology or response to treatment. There is no convincing evidence in the medical literature that this is so for 'classic' and 'common' migraine. Barrie *et al.* (1968), using principal component analysis, did not find a sharp distinction between these two groups, and the data in the present survey lead to a similar conclusion.

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