

Prevalence of migraine

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SYNOPSIS The prevalence of migraine in the general population has been calculated using a standard mailed questionnaire, which inquired about headache and the individual features of migraine, and which previously had been compared with a clinical diagnosis. In three separate epidemiological surveys the prevalence in the preceding year was found to be between 23 and 29% in women and between 15 and 20% in men. The prevalence declined with age in both men and women. These surveys show that migraine is much more prevalent than the frequently quoted figure of about 10% of the population which does not seem to be based on any particular survey.

The finding that nearly half of all the women who had been clinically diagnosed as having migraine in a community survey had never consulted any doctor about their headaches (Waters and O'Connor, 1971) casts doubts on many previous estimates of the prevalence of migraine. The frequently quoted figure of about 10% seems to be little more than a consensus of opinion and often does not specify whether this is for men, women, or both, or the age ranges involved. Studies in Great Britain had previously been done in general practice (Logan and Cushion, 1958; Walker, 1959; Fry, 1966; Office of Population Censuses and Surveys, 1974), as part of larger surveys (Brewis *et al.*, 1966), and in occupational groups (Childs and Sweetnam, 1961). The data on the prevalence of migraine in these studies gave widely conflicting results which may have been due to patients with migraine not attending their general practitioners, to the lack of a suitable definition of the condition, or to a poor response rate in the survey.

A number of community surveys of the prevalence of headache and of the prevalence of the features of migraine have recently been published (Waters, 1974a, b). In this paper, the data from three of these surveys are brought together and are used for the first time to calculate the prevalence of migraine in men and women in

various age groups. First it is necessary, briefly, to consider the problems of diagnosing migraine in a way appropriate for such epidemiological studies and to outline how this problem has been tackled.

METHODS

DEFINITION OF MIGRAINE Tissot (1790) emphasized that migraine was 'a disease entity distinctly separate from common headache'. This is still the general view, although down the years the condition has proved remarkably difficult to define precisely. The principal features of the condition were clearly stated last century by Gowers (1888).

'Migraine is an affection characterised by paroxysmal nervous disturbance, of which headache is the most constant element. The pain is seldom absent and may exist alone, but is commonly accompanied by nausea and vomiting, and it is often preceded by some sensory disturbance, especially by some disorder of the sense of sight. The symptoms are frequently one-sided, and from this character of the headache the name is derived . . .'

More recent definitions, by the *Ad Hoc* Committee on Classification of Headache (1962) and by the World Federation of Neurology's Research Group on Migraine and Headache (1969) are essentially similar. Other authors have stressed other features—for example, response to ergotamine—but randomized controlled trials (Barrie *et al.*, 1968; Waters, 1970) have cast doubt on this approach. The prob-

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TABLE 1
DETAILS OF POPULATION STUDIED

Area	Date of survey	Details of population surveyed	Completed questionnaires (no.)
Northern half of Pontypridd parliamentary constituency (Glamorgan)	1968	Random sample from electoral roll (Waters, 1974a)	Men 773
			Women 945
South-west London	1972	All patients aged 15 to 65 yr registered with a general practitioner (Clarke and Waters, in Waters, 1974b)	Men 745
			Women 774
Isles of Scilly	1973	All patients aged 15 to 65 yr registered with islands' general practice (Mills and Waters, in Waters, 1974b)	Men 459
			Women 518

TABLE 2
CALCULATION OF PREVALENCE OF MIGRAINE, IN YEAR IMMEDIATELY PRECEDING SURVEY, IN WOMEN OVER 21 YEARS OF AGE, IN PONTYPRIDD SURVEY (1968)

Symptoms (from questionnaire)	Women		Percentage diagnosed as migraine*	Percentage of population with migraine
	(No.)	(% of total)		
No headache	204	21.6	0	0
Headache only	198	21.0	0	0
Unilateral headache only	117	12.4	11.8	1.5
Headache and warning only	39	4.1	50.0	2.1
Headache and nausea/vomiting only	94	9.9	23.5	2.3
Unilateral headache and warning only	29	3.1	58.3	1.8
Unilateral headache and nausea/vomiting only	124	13.1	31.8	4.2
Headache with warning and nausea/vomiting only	54	5.7	60.0	3.4
Unilateral headache with warning and nausea/vomiting	86	9.1	87.5	8.0
Total	945	100.0	—	23.2

* From Waters and O'Connor (1971).

lem of defining migraine is that a list of characteristic features, as given, for example, by Gowers (1888), is not precise enough and 'attempts to find a single defining criterion for migraine have been productive of disagreement' (Ziegler *et al.*, 1972). Epidemiological investigation into the syndromes of such features as unilateral distribution of headache, warning that

an attack is coming, and accompanying nausea or vomiting have not so far helped to delineate a disease entity (Waters, 1973). Statistical studies on series of patients with headaches have also failed to sharpen our concept of migraine (Barrie *et al.*, 1968; Ziegler *et al.*, 1972).

Despite these difficulties, or perhaps because of them, it seemed best, in our present state of knowledge, to use the term migraine as a clinical diagnosis based on an overall clinical impression of the sufferer. Obviously there are practical difficulties in arranging for a skilled physician to examine large numbers of the general population to determine the prevalence of migraine. However, as the diagnosis of migraine depends almost entirely on symptoms, it is possible to elicit such information by means of self-administered questionnaires. A comparison between the questionnaire replies and a clinical diagnosis in over 100 women (Waters and O'Connor, 1971) has enabled the prevalence of migraine to be calculated for the whole population using the questionnaire method. This was first done for the Rhondda Fach in South Wales in 1967 where 19% of women aged 20 to 64 years were found to have had an attack of migraine in the year before the survey.

THE SURVEYS Data from three surveys using self-administered mailed questionnaires have been used to calculate the prevalence of migraine over a period of one year (Table 1). In all three surveys completed questionnaires were obtained from over 90% of the sample. The questionnaires, and details of the replies to individual questions about various features of migraine, have already been published (Table 1). The prevalence of migraine in the year immediately preceding the survey was calculated by comparing replies given in the questionnaires with the independent clinical diagnosis in women. The calculated prevalence of migraine in the Pontypridd area in the year immediately preceding the survey is shown in Table 2. The prevalence of migraine in the previous year in women aged 21 years and over was found to be 23.2%. For men the prevalence was 14.9%. The prevalence in men and women in various age groups is shown in Fig. 1.

The prevalence of migraine in the previous year in a London practice was 28.7% in women and 19.5% in men. In the Isles of Scilly the prevalences were 23.7 and 15.2% respectively. These two surveys were on younger age groups (15 to 64 years) than was the Pontypridd survey and the data are shown for women in Fig. 2 and for men in Fig. 3. While it should be remembered that the original clinical validation of the questionnaire was based on women,

the diagnosis of migraine depends mainly on symptoms so that the probability of diagnosing migraine from certain groups of symptoms should be similar in men.

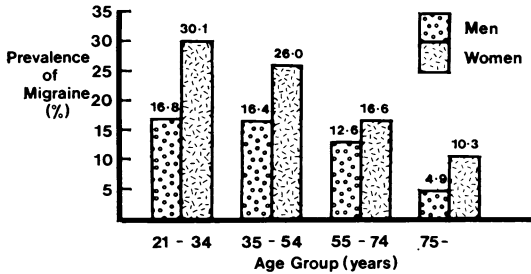


FIG. 1 Prevalence of migraine in preceding year in 945 women and 773 men in the Pontypridd survey.

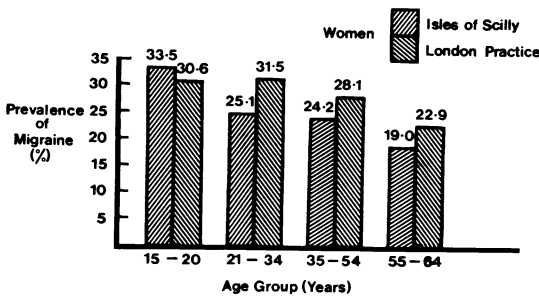


FIG. 2 Prevalence of migraine in preceding year in 518 women in the Isles of Scilly and 774 women in a London practice.

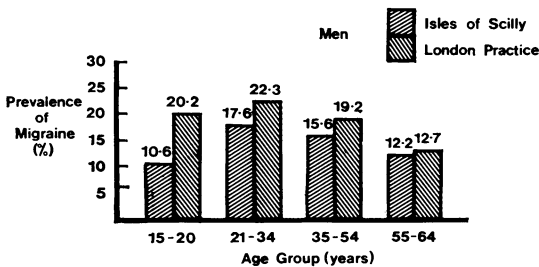


FIG. 3 Prevalence of migraine in preceding year in 459 men in Isles of Scilly and 745 men in a London practice.

DISCUSSION

The problem of an accurate definition of migraine remains and we are conscious that we have estimated the prevalence without solving this important problem. It may be that advances in the biochemical aspects of the condition may lead to a clearer concept of migraine but for the present we feel that the word migraine should apply to a clinical diagnosis. The prevalence of migraine in the general population has therefore been calculated on this basis. The surveys have shown that migraine, as defined in this clinical manner, is more prevalent than is generally assumed and that it is much commoner in women than men but in both declines with age. With this epidemiological approach to the problem of migraine and the use of standard self-administered questionnaires, it is possible to compare the prevalence in different populations to test hypotheses which may be relevant to aetiology. To date, surveys have shown a fairly uniform prevalence, if age and sex differences in the population are taken into consideration, although the data do suggest that migraine may be less prevalent in the Isles of Scilly.

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