

Migraine In The Community: A Five Country Study

Mike Benford & Roger Brice

Adelphi Group Products
Adelphi Mill,
Bollington, Macclesfield,
Cheshire. SK10 5JB

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Introduction

Migraine is a prevalent neurological disorder worldwide for people of all ages(1). Due to the severity of the disease, migraine is incapacitating and debilitating to the sufferer and consequently inflicts a major burden on society in terms of economic loss.

Calculation of the total cost of migraine is often based on gross assumption and includes direct costs, such as those associated with medical care, treatment and health services, and indirect costs, which include work days lost (or days of diminished productivity) and long-term disability. Such costs constitute more than 75% of the total economic burden of this disease in the US(2). The total economic cost of migraine across Europe is estimated at approximately 10 billion ECU per year, with the total number of workdays lost per year due to migraine in the general population estimated at 270 days per 1000 persons(3). It is therefore essential that awareness of the magnitude of the problem of migraine be created amongst the general population. Strategies aimed at targeting treatment to those most in need of care are likely to reduce the direct costs of migraine. Screening tools, combined with effective therapy and pain management strategies should increase opportunities to improve outcomes in these patients.

In 1988, the International Headache Society (IHS) prepared a headache classification system to accurately assess the epidemiology of migraine (1). Migraine patients are currently defined as individuals who have experienced at least 2 attacks with aura or at least 5 attacks without aura in their lifetime(1). Obtaining accurate and reliable data on the prevalence of migraine is essential to understanding the burden the disease places on society. Although many epidemiological studies have provided information on the prevalence and socio-economic impact of migraine, only a small proportion have measured the prevalence of migraine in the general population. Patients experiencing migraine attacks are commonly seen in neurology practices and in headache clinics and most epidemiological studies are based on this patient population. The prevalence of migraine is best understood through population-based studies, as only 15–30% of migraine sufferers are thought to consult a physician each year(4). As a consequence, clinic-based studies are subject to considerable selection bias.

A restricted number of studies have analysed the epidemiology of migraine in the general population, using the diagnostic criteria of the IHS to define a migraine attack. Studies in the US, France, Denmark and Germany have revealed consistent findings(5, 6, 7, 8, 9, 10). In these studies, the prevalence of migraine was shown to be approximately 6% in men and 15–17% in women. Although the prevalence of migraine is generally believed to increase with socio-economic status, population-based analysis revealed prevalence to be inversely proportional to income and that low income, youth and male gender were associated with a decreased probability of consulting a physician(11).

These findings are evidence that population-based studies reveal a more accurate analysis of the prevalence of migraine, which may initiate a change in the perception, and management of the disease.

Few studies on the prevalence of non-infectious diseases and the actions taken by sufferers have been conducted in the general population. Those studies, which have been reported, have generally been conducted in selected populations, often in limited geographical areas. In the study reported here, the prevalence of migraine is measured in the population as a whole, including those sufferers who are currently consulting a physician, those who have but no longer do so and those who have never done so, across both Europe and the US.

This study is innovative in that it sets out to measure the prevalence of migraine in the population as a whole and to determine awareness of the diagnosis and the extent to which sufferers consult with a physician for treatment. It was conducted to form important input into the design of a large-scale study on the symptomatology, treatment and impact on lifestyle of migraine among both consulting and non-consulting migraineurs. For those consulting, data were obtained from both the treating physician and the consulting patient. Results from this study (encompassing 700 physicians and 8000 migraine sufferers in six countries) are not reported here. We anticipate that they may form the basis for future papers and, therefore, we have leant on some of the broader findings in the Discussion and Conclusions below.

Methods

Sample

The survey was based on interviews with a demographically representative sample of adults in each of the five participating countries. In Europe the interviews were conducted on a house-to-house basis with adults aged 15 and over. In the USA interviews were conducted over the telephone and with adults aged 18 and over. The sampling methods also differed. These are described below. The migraine questionnaire formed one module of omnibus market research interviews with adults within the general population.

Other than in the US, member companies of the Ipsos network carried out all interviewing. The number of interviews and fieldwork dates in each country is shown in Table 1.

Country	Interview Dates	Number of Interviews	Fieldwork Company
France	2 nd - 6 th January 1998	1012	Ipsos Insight Marketing
Germany	14 th - 21 st January 1998	968	Ipsos-Deutschland
Italy	14 th - 18 th January 1998	1079	Ipsos-Explorer
Great Britain	2 nd - 6 th January 1998	944	Ipsos-RSL
USA	30 th Dec 97 - 4 th Jan 98	1012	ICR (International Communications Research)

Table 1: Sample Sizes, Interview Timing and Fieldwork Companies

Europe

A quasi-random sampling technique was selected due to the constraints imposed of time and budget. In this sampling technique, the selection of address and household is essentially random but the selection of individuals is subject to demographic controls.

In each country (France, Germany, Italy, Great Britain) the migraine interview followed other modules in the omnibus survey. The earlier modules concerned consumer topics such as videos, cameras, travel, food and drink. No medical topic was included prior to the migraine interview. It was decided to place the migraine module well into the interview. It was considered that this would lead to respondents being familiar with the interview process without being too tired answer the questions accurately.

Interviewers were attached to sampling points in each country and selected respondents according to the specified categories in the quasi-random sample. The number of sampling points in each country was France 180, Germany (West) 120, Germany (East) 30, Italy 125, Great Britain 180. As a quality control measure, there was a telephone follow-up with a sample of respondents to verify the accuracy of the interview.

USA

A two-stage sampling technique is used to draw a nationally representative sample. First a stratified, single stage random digit dialling (RDD) sample of telephone households was drawn. Within each sample household a single respondent was selected using a computerised procedure based on the "last birthday method" of respondent selection

In the US, the migraine interview was the 4th module in the omnibus survey. The earlier modules concerned consumer topics covering personal finance, video rentals, and car rentals and eating out.

In all five countries, the sample was designed to match the population as closely as possible by taking account of age, gender, region and other demographic factors such as marital status.

The demographic characteristics of the sample populations are compared with official population statistics in each country in Table 2.

	France	Germany	Italy	GB	USA
Males (%)					
Sample	48	45	45	43	50
Actual	48	47	48	49	48
Females (%)					
Sample	52	55	55	57	50
Actual	52	53	52	51	52
15-24 yrs⁽¹⁾ (%)					
Sample	17	11	19	15	10
Actual	19	13	19	16	12
25-34 yrs (%)					
Sample	19	26	22	19	22
Actual	19	17	19	20	21
35-44 yrs (%)					
Sample	19	21	20	18	23
Actual	19	17	16	17	22
45-54 yrs (%)					
Sample	14	14	15	13	18
Actual	14	17	15	16	16
55+ yrs (%)					
Sample	31	29	23	35	27
Actual	30	36	31	32	29
Married (living as)					
Sample	63	56	53	61	61
Actual	57	68	57	58	59
Single					
Sample	37	44	47	39	39
Actual	43	32	43	42	41

(1) 18 - 24 yrs in US

Table 2: Comparison of achieved samples and estimated actual adult populations

The samples achieved in each country were weighted to provide nationally representative and projectable estimates of the adult populations in each country. All results presented in this paper are based on these weighted samples.

The migraine screening instrument

The first 11 questions of the 14 item questionnaire used during the interview formed the basis of the diagnosis of migraine headache. The questionnaire forms Appendix A of this paper.

Results

Prevalence of migraine

Overall prevalence among adults

The prevalence rates found ranged from 9.0% of the adult population in Germany to 17.5% in Italy.

	USA	France	GB	Italy	Germany
Base: all adults	1012	1000	966	1079	987
Migraine Sufferers	(%)	(%)	(%)	(%)	(%)
Total	10.7	12.6	14.3	17.5	9.0
Females	8.6	9.0	11.9	13.0	6.4
Males	2.1	3.6	2.4	4.5	2.6

Table 3: Prevalence of migraine in adult populations

Differential Diagnosis: migraine with/without aura

The prevalence of migraine with aura ranged from 2.0% in Germany to 5.0% in the UK. The range for migraine without aura was from 6.9% in the USA (7.0% in Germany) to 14.9% in Italy.

	USA	France	GB	Italy	Germany
Base: all adults	1012	1000	966	1079	987
Migraine Diagnosis	(%)	(%)	(%)	(%)	(%)
With aura	3.7	2.9	5.0	2.6	2.0
Without aura	6.9	9.8	8.3	14.9	7.0

Table 4: Prevalence of migraine with and without aura

The ratio of the prevalence of migraine without aura to that of migraine with aura ranged from 1.7:1 in the UK to 5.8:1 in Italy

	USA	France	GB	Italy	Germany
Base: all migraine sufferers	103	123	128	169	87
Migraine Diagnosis	(%)	(%)	(%)	(%)	(%)
With aura	35.0	22.8	37.5	14.8	21.8
Without aura	65.0	77.2	62.5	85.2	78.2

Table 5: Relative prevalence of migraine with and without aura

Physician consultation status

Consultation history

The lowest rates for ever having consulted a physician for headaches, among those diagnosed through our diagnostic instrument, were found in France and Italy where around 60% of migraineurs will have consulted. These compare with figures of around 75% in the UK and USA. The rate for Germany is below these last two countries due an apparent reluctance of males to consult.

	USA	France	GB	Italy	Germany
All migraine sufferers	77.7%	58.5%	74.2%	60.4%	65.5%
Males	75.0%	54.3%	82.6%	62.8%	36.0%
Females	78.3%	60.9%	66.7%	58.7%	75.8%

Table 6: Percentage of migraine sufferers who have ever consulted a physician

Current consultation status

In all five countries, fewer than 50% of those suffering from headaches and diagnosed through the diagnostic instrument claimed to have consulted a physician for their headaches within the six months prior to the interview. The lowest current consultation rates were found in Italy and the UK.

Recall of physician diagnosis

The responses to the question of the whether and what diagnosis was given to patients suggest that the term 'migraine' is not used and/or patients have a low awareness of the term and cannot recall it. We cannot determine the relative contributions of these two possibilities from the data collected.

	USA	France	GB	Italy	Germany
Base: all migraine sufferers	103	123	128	169	87
Status	(%)	(%)	(%)	(%)	(%)
Consulted within last 6 months	49.5	41.5	33.6	25.4	44.8
Recall diagnosis of migraine	35.0	11.1	32.6	12.7	31.6

Table 7: Current consultation status & recall of diagnosis among migraine sufferers

The recall of a migraine diagnosis among those sufferers who had consulted more recently showed a similar pattern, ranging from around 15% in Italy and France to close to 40% in Germany and the USA.

Drug therapy status

Current drug therapy status

As might be expected, the proportion of migraine sufferers taking prescription drug therapy for their headaches was higher among those who had consulted a physician more recently. However, in all countries we found that fewer than 60% of those we may consider to be “current” consulters considered themselves to be taking prescription drug therapy.

	USA	France	GB	Italy	Germany
All migraine sufferers ever consulted a physician	46.3%	41.7%	33.7%	48.0%	31.6%
Migraine sufferers consulting physician within last 6 months	52.9%	47.1%	48.8%	55.8%	59.0%

Table 8: Percentage of migraine sufferers currently taking Rx drug therapy

Discussion

Migraine is a common condition affecting a high proportion of the population yet there appears to be a reluctance among sufferers both to consult a physician and, after so doing, not to persist with either further consultations on an ongoing basis or with prescription therapy.

Our interviews indicate that the diagnosis of migraine is not always communicated to patients. There is also a perception among migraineurs of physicians being able to have little by way of effective treatment options; this being fuelled by impressions of failed treatment in the past. These perceptions are often communicated to other sufferers reinforcing their decision not to seek professional advice from a physician.

Non-consulting migraine sufferers also report symptoms to us, including nausea and vomiting as well as headache, of sufficient severity (in their view) that they are unable to function with a predictable effect on other family members and the workplace.

Conclusions

These results indicate the need for greater public awareness of the symptoms of migraine and that a greater number of treatment options are now available to physicians than in the past.

Unless primary care physicians are deliberately not informing patients of the diagnosis ‘migraine’ then better diagnostic skills and/or diagnostic aids are required in the sector. There is a need for physicians to prescribe the most appropriate therapy at the first consultation whether this is with a de novo patient or one previously diagnosed and returning to the physician after a period of not consulting. Perceptions of treatment success need to be managed such that, along with optimal therapy, persistence is improved and communication among family and friends to fellow sufferers is more positive.

We suggest that the full impact of migraine in the community (encompassing both consulters and non-consulters) needs to be better assessed and communicated. It is a condition that warrants higher priority among primary care physicians and health care delivery policy makers.

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Appendix A : Headache Sufferer Diagnostic Questionnaire

Complete all questions	Yes	No
	Please tick where appropriate	
1. Do you suffer from headaches which last between 2 hours and 3 days? IF NO THANK AND CLOSE	+1	-1
2. Do you usually suffer from your headaches at particular times of the month?	+2	0
3. Do you feel well in between attacks?	+1	0
4. Do you suffer from headaches on more than 15 days each month?	-2	0
5. Do you feel that you want to avoid light and/or noise during a headache?	+2	0
6. Do you feel sick during a headache?	+2	-1
7. Is your vision normal before or during the headache?	0	+1
8. Do you suffer from wavy lines, flashing lights, or blind spots affecting your vision before or during the headache? IF SCORE <3 THANK & CLOSE	+3	0
9. Is the headache a throbbing pulsating pain? IF SCORE < THANK & CLOSE	+1	0
10. At any stage of the headaches is it located on one side of the head? IF SCORE < 5 THANK & CLOSE	+1	0
11. Do you actually lie down when you have a headache? IF SCORE <7 THANK & CLOSE	+2	0
12. Have you ever consulted a doctor regarding these headaches? IF YES	YES	NO
13. How long ago did you last visit a doctor regarding these headaches? IF <52 WEEKS THANK & CLOSE	Weeks
14. Approximately how many headaches do you have in a year?	
SCORE OF 7 OR MORE & HAVE NOT VISITED THE DOCTORS IN THE LAST YEAR: CONTINUE WITH INTERVIEW		

Please note, the copyright of Questions numbered 1-11 and the scoring system to identify different types of headaches is held by our client, however, we have permission to use them within the context of this project. The other questions have been added by Adelphi.