Effects of Headache on Working Ability: A Survey of an Urban and a Rural Population in Northern Finland

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SYNOPSIS

In a headache survey in which a self-administered questionnaire was used, the respondents were asked to estimate work absence frequency, effect on daily activities and disability due to headache. Work absence was not a common occurrence. Only 263/2018 respondents (13%) who suffered from headaches were absent from work one or more days during the previous year. Of these, absence was estimated at 1-3 days/year in 41%, and 7 days or less, in 55%. 28% stated that they had been absent but were unable to estimate the number of days. Self-employed persons had a higher percentage of absence than other employed categories, and the rural self-employed and rural housewives had the highest percentage of absence. 22% stated that headache did not affect their work, 26% were able to carry on by easing their pace of work, and 47% were forced to rest or lie down during an attack. In a random sample of 154 personally *examined* headache sufferers, vascular headaches were more incapacitating, but did not cause more frequent absence from work.
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Headache is a common symptom, usually regarded as inconvenient, but trivial. Little is known of its influence on the daily lives of those who suffer from it, or of its socioeconomic consequences. It is well-established that the prevalence of headache is highest between 20 and 50 years of age and that over 80% of all migraine headaches start before the age of 30. (Headache is most common in the active, working part of the population).

In a survey of neurological disease in an English city (1961),[1] 6.2% of the respondents had suffered from repeated headaches, causing loss of time from work or school. In a Danish sickness survey from 1951-1954,[2] 9.5% of the occupationally employed females and 9.1% of the corresponding males with headache or migraine who were interviewed, had been absent from work. In Clarke and Waters' study on a general practice population (1972),[3] 8% of the men with headaches had been absent from work. A survey done by the Migraine Trust in Britain in 1975,[4] indicated that migraineurs were absent from work approximately four days each year because of such attacks.

The present Paper concerns a headache survey conducted in a defined rural and a defined urban area in Northern Finland, in which the respondents were asked to estimate the numbers of working days lost because of headache, and to identify from a list of alternatives, the extent of the disability caused by the average attack.

METHODS

The data were collected by a self-administered questionnaire, posted to every inhabitant over 15 years of age, in the two areas concerned, in 1976. This included 2358 inhabitants in a residential area in the town of Oulu and to 2147 inhabitants in the commune of Yli-li. 3067 answers were received. The methods of

Table 1
Questions Asked in the Questionnaire Concerning Absence from Work and the Influence of Headaches on Daily Activities

Have you been absent from your daily work *because of a headache* during the last year? yes/no
If you have been absent, approximately how many days in the last year? _____days
When your head aches, are you generally
1. forced to lie down
2. forced to rest
3. forced to "take it easy"
4. none of above applicable, able to work as usual

Tick the alternative or alternatives applicable.
The alternative or alternatives chosen are grouped in the tables as follows: 1 = usually forced to lie down, 1 + 2 = usually forced to rest or lie down, 2 = usually forced to rest, 2+3 = sometimes forced to rest, 3 = affected, but *able* to continue, 4 = not affected.

collecting the data has been described in detail earlier.[5]

A random sample of 200 inhabitants were examined personally in order to test the reliability of the answers and to classify the headache cases clinically. This paper is based on the answers to the questions shown in Table 1.

RESULTS

3067 answers were returned, the response rate being 74.0% in the urban area, and 79.5% in the rural area. 2018 of these persons (1187 women and 831 men) had suffered from a headache at some time in the previous year. 975 were living in the urban area and 1043, in the rural area. The prevalence of headache was 55.4% in the rural men, 60.4% in the urban men, 72.7% in the rural women and 73.5% in the urban women.

In the random sample examined personally, 154 out

Table 2
Effect of Headache on Daily Activities as Stated in the Questionnaire

Effect of headache on Daily Activities:		Urban Women	Rural Women	Women Total	Urban Men	Rural Men	Men Total	Total
None	No	136	88	224	106	117	223	447
	(%)	(23)	(15)	(19)	(28)	(26)	(27)	(22)
Affected, but able No to continue	No	141	123	264	130	123	253	517
	(%)	(24)	(21)	(22)	(34)	(27)	(30)	(26)
Sometimes forced to rest	No	45	44	89	24	26	50	139
	(%)	(8)	(7)	(8)	(6)	(6)	(6)	(7)
Usually forced to rest	No	81	121	202	44	77	121	323
	(%)	(13)	(20)	(17)	(12)	(17)	(15)	(16)
Usually forced to rest or lie down	No	82	89	171	29	27	56	227
	(%)	(14)	(15)	(14)	(8)	(6)	(7)	(11)
Usually forced to lie down	No	79	105	184	30	56	85	269
	(%)	(13)	(18)	(16)	(8)	(12)	(10)	(13)
Not stated	No	30	23	53	18	25	43	96
	(%)	(5)	(4)	(4)	(4)	(6)	(5)	(5)
Total	No	594	593	1187	381	450	831	2018
	(%)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Table 3
Effect of Headache on Daily Activities, by Type of Headache, in the *Random Sample* of Respondents

Classification of headache	Total No with Headache	Grade of Interference 1	2	3	4	5
		No (%)	No (%)	No (%)	No (%)	No (%)
Migraine, classic	11	-	3	1	2	5
Migraine, common	28	1	7	2	9	9
Migraine and muscle tension	10	2	5	1	1	1
Possible migraine and other vascular	20	1	6	4	5	4
Vascular headaches, total	69	4 (6)	21 (30)	8 (11)	17 (25)	19 (28)
Muscle tension	70	23 (33)	24 (34)	8 (12)	12 (17)	3 (4)
Miscellaneous	15	4 (27)	3 (19)	4 (27)	4 (27)	- -
Non-vascular, total	85	27 (32)	27 (32)	12 (14)	16 (19)	3 (3)
Total	154	31 (20)	48 (31)	20 (13)	33 (22)	22 (14)

Grade 1 = not affected, Grade 2 = affected, but able to continue, Grade 3 = sometimes forced to rest, Grade 4 = forced to rest or lie down, Grade 5 = usually forced to lie down. (Grade 4 summarizes "usually forced to rest" and "usually forced to rest or lie down" in Table 2.)

of 200 (77%) had suffered from a headache in the previous year. Of these, 69 (44.8%) were diagnosed as vascular headaches and 70 (45%), as muscle tension headache. In 11 (7.1%) cases, the headache was so indeterminate, that it eluded classification; and in 4 (2.6%), it was caused by various diseases (summarized under the heading "miscellaneous" in Table 6).

Table 2 shows the impact which the headache was reported to have had on the sufferers' daily activities. In 19% of the women and 27% of the men, there was no interference at all; and for a total of about half of the respondents (48%), the interference was no more than minor. The remaining half did suffer from their headaches; 47% of the women and 32% of the men were often forced to rest or lie down during an attack. Although the severity of headache was similar in the urban and rural areas,[5] the rural inhabitants were more incapacitated than those from the urban area.

In the random sample (Table 3) vascular headaches had proved more incapacitating than non-vascular; 46% of those with classic migraine, 32% of those with common migraine, and 4% of those with muscle tension headache were often forced to lie down during an attack.

Absence from work or regular activities as a consequence of headache was unusal and of short duration. 1367/2018 headache subjects (68%) had not been absent from work for this reason in the year prior to completing the questionnaire. 263 persons, 159 women (13%) and 104 men (13%), had been absent, and 388 persons (19%), mostly in the older age groups, did not answer this question (Table 3). The percentage absent was similar in all age groups.

Table 4 shows the estimated number of days of absence in the various age groups. 41% of the 263 absentees had been absent for 3 days or less. The number of days of absence increased with age; 0% of

Table 4
Estimated Number of Days Absent from Work/School/Regular Activities in the Previous Year, by
Age Group in the Questionnaire Material

No. of Days Absent	15-19 Yrs. No (%)	20-34 Yrs. No (%)	35-49 Yrs. No (%)	50-64 Yrs. No (%)	65 Yrs. - No (%)	Total No (%)
- 1 day	9 (23)	18 (24)	9 (13)	6 (9.5)	2 (13)	44 (17)
2- 3 days	13 (32)	23 (30)	23 (34)	3 (5)	- -	62 (24)
4- 7 days	11 (28)	14 (19)	7 (10)	5 (8)	- -	37 (14)
8-14 days	- -	4 (5)	7 (10)	6 (9.5)	1 (6)	18 (7)
15- 30 days	- -	3 (4)	3 (4)	7 (11)	- -	13 (5)
30 days	- -	2 (3)	5 (7)	4 (6)	3 (19)	14 (5)
Unable to estimate no. of days		7 (17)	11 (15)	15 (22)	32 (51)	10 (62)75 (28)
Total absent	40 (100)	75 (100)	69 (100)	63 (100)	16 (100)	263 (100)
Total with headache	300	591	538	410	179	2018
Percentage absent	(13)	(13)	(13)	(15)	(9)	(13)

Table 5
Absence from Work/School/Regular Activities in the Previous Year by Mode of Employment in the Questionnaire Material

	Urban					Rural					Total		
	Total with Headache	Absent				Total with Headache	Absent				Total with Headache	Absent	
		W	M	Total			W	M	Total				
	No	No	No	No	(%)	No	No	No	No	(%)	No	No	(%)
Self-employed	24	1	3	4	(17)	137	3	28	31	(23)	161	35	(22)
Employee	593	50	29	79	(13)	353	22	16	38	(11)	946	117	(12)
Student (school/Univ.)	136	13	5	18	(13)	171	14	10	24	(14)	307	42	(14)
Household work	88	2	-	2	(2)	216	32	-	32	(15)	304	34	(11)
Pension	127	7	3	10	(8)	147	15	10	25	(17)	274	35	(13)
Not stated	7	-	-	-	-	19	-	-	-	-	26	-	-
Total	975	73	40	113	(12)	1043	86	64	150	(14)	2018	263	(13)

M = Men W = Women

Table 6
Absence from Work/School/Regular Activities, by Type of Headache in the *Random Sample*

	Vascular				Muscle-tension				Miscellaneous				Total	
	W	M	Total		W	M	Total		W	M	Total			
	No	No	No	(%)	No	No	No	(%)	No	No	No	(%)	No	(%)
Total no. with headache		49	20	69		39	31	70		5	10	15		154
Absent 1-7 days	4	1	5	(7)	2		2	4	(6)	-	-	-	9	(6)
Absent 8 days Or more		2	1	3	(4)	1	1	2	(3)	-	-	-		5(3)
Absent, unable to estimate	-		1	1	(2)	-	1	1	(1)	-	-	-		2(1)
Number of days														
Total, absent	6	3	9	(13)	3		4	7	(10)	-	-	-	16	(10)

W = Women M = Men

those aged 15-19, 12% of those aged 20-34, 21% of those aged 35-49, and 26% of those aged 50-64 years, had been absent 8 days or more. No difference was found according to sex; 55% of the women and 53% of the men had been absent less than seven days, and 17% of both the men and women, more than seven days, while 28% of the women and 30% of the men were unable to estimate the exact number of days. Absence tended to be more frequent in the rural area, where 20/86 women (26%) and 12/64 men (19%) had been absent 8 days or more in the previous year, compared with 7/73 women (10%) and 6/40 men (15%) in the urban area.

Table 5 analyses the cases of absence in relation to mode of employment. Most absentees were found among the self-employed, both in the urban and in the rural area. The urban housewives reported that they had been unable to work because of a headache in only 2% of cases, compared to 15% of the rural housewives.

Amongst the randomly chosen sample (with established diagnosis) in Table 6, 16 out of 154 persons suffering from headaches had been absent from work or limited regular activities in the year preceeding the survey. In this small series vascular headaches caused absence only slightly more than muscle tension headaches. There were no absences recorded in the miscellaneous group.

DISCUSSION

It is difficult to estimate the individual and social losses caused by headache attacks, and counting the number of working days missed is probably equivalent to looking at the top of an iceberg.

In the surveys carried out on this subject, as in the present survey, the population studied is asked for a retrospective estimate of the working days missed over a certain period of time, usually the preceeding year. Thus, not all relevant absences will necessarily be regarded as such by the respondent, the menstrual period or a common cold being more acceptable causes. Even when we take this into account the percentage of headache sufferers reporting absence from work due to a headache is surprisingly small. In Clarke and Waters' study on a general practice population 51 men out of 623 (8%) had missed a total number of 191 working days in one year. In the Danish sickness survey carried out in 1952-54, 22 out of 231 women (9.5%) had missed 123 days and 20 out of 219 men (9.1%) had missed 164 days. In Joanne Greene's survey concerned with migraine, more absences were noted, 2/3 having been absent, 40% of whom stayed home from work on 1-2 days a year.

263 out of the present 2018 headache sufferers (13%) had been absent from work. 75 of these (28%) could not estimate the length of the absence, 106 (41%) had been absent 1-3 days/year, 14% 4-7 days, and the remainder (17%) more than 7 days. 388 persons, mostly pensioners, did not answer this question at all. Both in rural areas and in towns, pensioners do participate in daily activities according to their abilities (farm work, care of grandchildren) and this accounts for the absence days reported by the oldest age group included in Table 4. Absence from work was not related to sex, and occurred in all age groups. On the other hand, the rural housewives and self-employed persons had more days of absence than the other employed persons. In the small sample with established diagnosis 9 out of 69 with vascular headache and 7 out of 70 with muscle tension headache had been absent from work (Table 6). Thus absence from work seems to be influenced as much by working conditions and opportunity as by the nature of the headache.

In the questionnaire the respondents were asked to estimate the influence of headache on their behaviour during an attack. Approximately a quarter (22%) were able to carry on their normal daily activities in spite of the headache, another quarter (26%) managed by easing their pace of work and 47% were forced to rest at times; 13% usually being forced to lie down. More women than men were severely handicapped by their attacks, and more rural than urban women, while in the smaller sample vascular headaches proved more

incapacitating, even though they did not cause more absence.

Lying down to rest at one's place of work is not kindly looked upon. 16% of the women and 10% of the men reported that they "usually had to lie down," and 15% of the women and 7% of the men reported that they were "usually forced to rest or to lie down" during an attack. This suggests that the usual pattern of behaviour would be to persevere at work to the end of the day, and then lie down to rest after working hours. Loss of efficiency at work is thus not the only negative consequence, and the impact on family life should also be considered.

Headache as an incapacitating factor in society is clearly worth taking seriously. Seen from the viewpoint of community surveys, however, where 60-90% of the population are sufferers, it should be kept in mind that temporary and infrequent headaches are included in such figures, and that the attacks vary in intensity.

REFERENCES

1. Brewis M, Poskanzer C, Miller H: Neurological disease in an English city. *Acta Neurol Scand* 42:(Suppl. 24), 1966.

2. Lindhardt M: *The Sickness Survey of Denmark 1951-1954.* Munksgaard Copenhagen, 1960.

3. Clarke GJR, Waters WE: Headache and Migraine in a London General Practice. *In the Epidemiology of Migraine,* Boehringer Ingelheim, Bracknell, 1974, p 14.

4. Green JA: Survey of migraine in England 1975-76. *Headache* 17:67, 1977.

5. Nikiforow R, Hokkanen E: An epidemiological study of headache in and urban and a rural population in northern Finland. *Headache* 18:137, 1978.