

A Descriptive Study of Headaches in the outpatient department, Ga-Rankuwa Hospital

JGH Roux

Curriculum Vitae

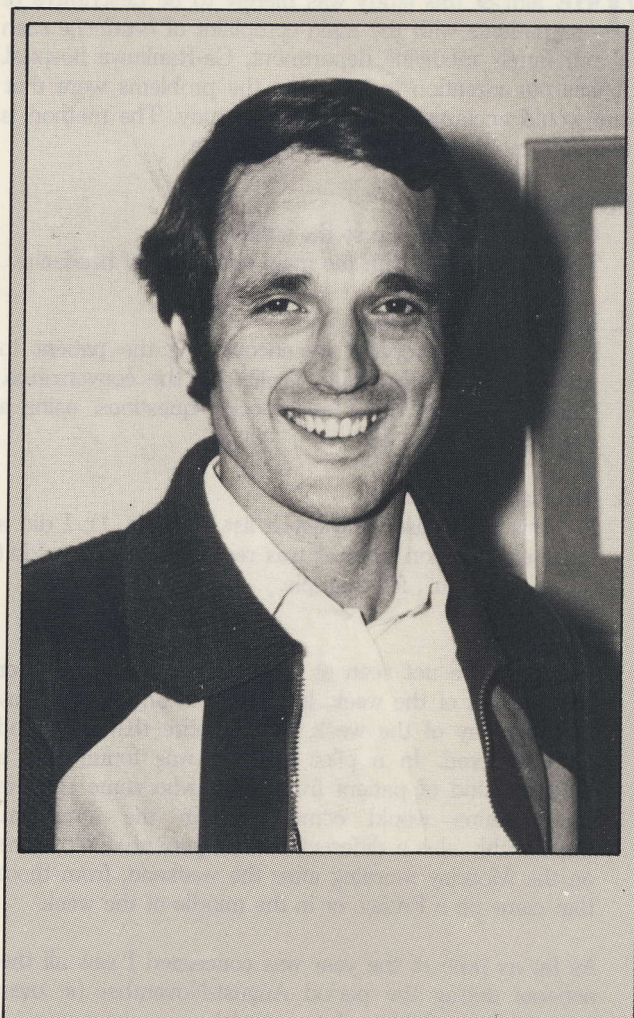
Dr Roux qualified at Stellenbosch in 1976 and came to Pretoria to do his internship at Ga-Rankuwa Hospital. After his military service he joined the Dept of Family Medicine at Medunsa as a full-time trainee for the M Prax Med degree, which he received in November 1983.

He joined the staff of the Manguzi Hospital (Kwa-Zulu) in August 1983 and is at present the medical superintendent there. Dr Roux has already published several articles.

KEYWORDS: Headache; Classification; Pilot Projects; Continuity of Patient Care; Stress.

Dr JGH Roux MBChB MPraxMed
Manguzi Hospital
Private Bag X301
Kwa Ngwanase
3973

Formerly: Dept. Family Medicine, Medunsa/Ga-Rankuwa Hospital.



Summary

In 100 patients presenting with headache at the Ga-Rankuwa outpatient department, two main categories of headache, organic and dysfunctional, were diagnosed. Dysfunctional headaches predominated and of these tension headaches were the commonest. Females were affected more than males. The study showed that the 'time present' factor and the pattern of occurrence were important in distinguishing between different types of headaches.

INTRODUCTION

THE aim of this study was merely to be descriptive of outpatients with the main complaint of *headache* seen at our family medicine department, Ga-Rankuwa hospital. It was our intention to see what the problems were that one would encounter during such a study. The method is therefore more important than the results.

METHOD

1. Criteria for admission to the study:
Those presenting with the main complaint of headache.
2. Interviewing technique:
I started the interview by encouraging the patient to speak about his problem, facilitating the conversation. Only at the end did I ask specific questions, using a check list. (See fig. 1).
3. Medical examination:
For this I also used the check list. (See fig. 1); I did a fuller examination when it was required, but I wouldn't do so for a "flu", for example.
4. Sampling:
Patients were not seen at specific times of the day or certain days of the week, but rather at any time of day and any day of the week, making sure that days and times differed. In a pilot study it was found that a different kind of patient from those who came early in the morning would come later in the afternoon. Conceivably also a different kind of patient would come on the Monday morning after the weekend, from those that came on a Friday, or in the middle of the week.

As far as time of the year was concerned I saw all the patients during the period August-November (ie over exam-time for children, for example).

Figure 1: Check List

- *Name, address, age and sex
- *History
 1. Time aspect:
Time present, frequency, duration of attack, periodicity, association with important events in patient's life.
 2. Distribution:
 3. Character:
eg pressing throbbing, aching, stabbing.
 4. Influencing factors:
 - (a) precipitating
 - (b) aggravating (eg light, noise, heat, reading)
 - (c) relieving
 5. Degree:
sleep interruption, work interruption.
 6. Associated features:
sleeping pattern, depression, nausea, vomiting, menstruation, contraception.
 7. Social history:
 - (a) family situation
 - (b) occupation, work situation, level of education
 - (c) stress areas in life.
 8. Family history:
 9. Past medical history:
 10. Habits:
tea, coffee, alcohol.
- *Medical examination
Pulse, blood pressure, vision, fundi, ear, nose and throat, local examination (eg temporal arteries, teeth, mastoids), chest and abdomen.

5. Patient management:

When I had arrived at an assessment, I decided whether to manage the patient myself, or to refer the patient to a specialty (ie psychiatry, internal medicine, neurosurgery or ophthalmology). Those that were managed by me, I tried to get back for follow-up, and in this way I could (in some cases) confirm or change my assessment. I retrieved the bedletters of the referred cases for analysis.

The most useful instrument in the diagnosis of headache, is a thorough history.

RESULTS

I. A Breakdown of the Diagnoses.

I saw 100 patients with the main complaint of headache during this study, over a period of 3 months. Table I gives a breakdown of those 100 patients into number of patients per diagnosis. Note that there were 116 diagnoses. The additional 16 came from patients with more than one type of headache (eg tension headache and migraine; organic headache and tension headache, etc.).

The diagnoses were divided into two broad categories: functional and organic, and then subdivided further according to the classification of the "Ad Hoc Committee for Classification of Headaches"¹. I adapted it slightly to make the mechanism more clear. I found this classification to be comprehensive and workable.

TABLE I: CLASSIFICATION

TWO MAIN CATEGORIES		Male	Female	Total
I DYSFUNCTIONAL:				
1. Tension headache		13	36	49
2. Migraine		4	16	20
— common				
— classic				
— cluster				
— other				
3. Mixed (tension headache and migraine)		(2)	(4)	(6)
4. Psychogenic		4	7	11
5. Nasal vasomotor				
Total		21	59	80
II ORGANIC:				
1. Vascular:		5	6	11
Systemic infections (malaria, flu, typhoid):				
Hangover		2	-	2
Caffeine withdrawal		-	-	-
Hypertension		-	1	1
Other vascular		3	5	8
2. Traction headache (intracranial):				
Brain tumour		-	-	-
Haematoma (eg subdural)		2	-	2
Brain abscess		-	-	-
Brain oedema		-	-	-
3. Intracranial inflammation:				
Meningitis		-	1	1
Subarachnoid haemorrhage		-	-	-
4. Extracranial structures:				
Eyes (eye strain, other eye pain)		-	2	2
Aural		-	-	-
Nasal (sinusses)		2	4	6
Dental		-	-	-
Other extracranial structures		-	-	-
Nerves (neuritides, neuralgias)		-	-	-
Total		15	21	36

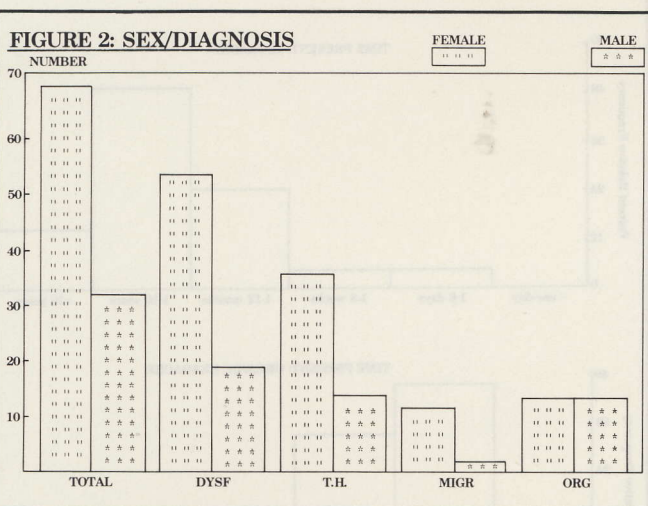


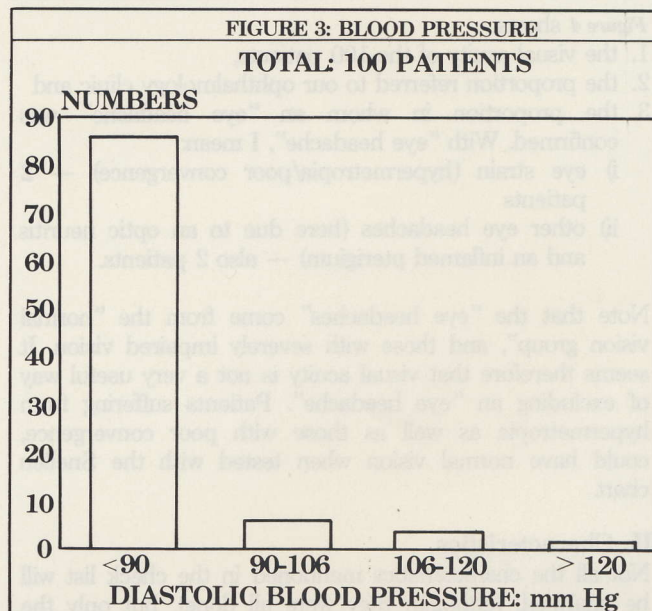
Figure 2 illustrates graphically the 100 patients according to their primary diagnoses (2nd diagnoses omitted). Note that that:

- 32% were males (Male:Female = 32:68).
- Male and female numbers were almost equal for the organic headaches (Male:Female = 13:14).
- Note: A male:female ratio of 19.54 for the dysfunctional headaches, was found.
- Dysfunctional headaches were much more common than organic headaches (ratio 73:27).
- Tension headaches constituted the biggest proportion of the dysfunctional headaches (tension headaches: the rest 48:25).

The sexual difference between organic and dysfunctional headaches was statistically significant at the 5% level ($P < 0.05$), using the Chi-square method. This is in keeping with what other authors have found^{2,3}.

The difference in incidence between the organic and dysfunctional headaches (27:73) was highly significant statistically — at the 0,1% level ($P < 0.001$). This again is in keeping with the literature, where it is said that up to 90% of headache sufferers have either migraine or tension headache. One must note though, that that was in a headache clinic setting^{3,4}, and this study was carried out in a primary care contact situation.

Figure 3 shows the distribution of diastolic blood pressures of the 100 patients.



Descriptive Study of Headaches

The blood pressure profile must be very near to that of the average adult population seen at our hospital, although a control study was not done. If one looks again at Table I, one can see that only one out of the 116 diagnoses was "hypertensive headache" — the same number as "meningitis"!

Classically, hypertensive headache are present on waking up in the mornings, are throbbing, and are made worse or precipitated by lying down. It is said that hypertension doesn't cause a headache unless the diastolic blood pressure exceeds 120-140 mmHg^{2,5,6} — and is usually suboccipital in distribution.

In only 2 out of 117 diagnoses was headache due to *poor vision/eye strain* — the same number as "subdural haematoma". The headache caused by eye strain is described as being within the orbit, moderate to severe, often nocturnal, aggravated by use of the eyes, and may radiate to the temporal areas^{7,8,9}. Especially patients with hypermetropia and poor convergence suffer from this.

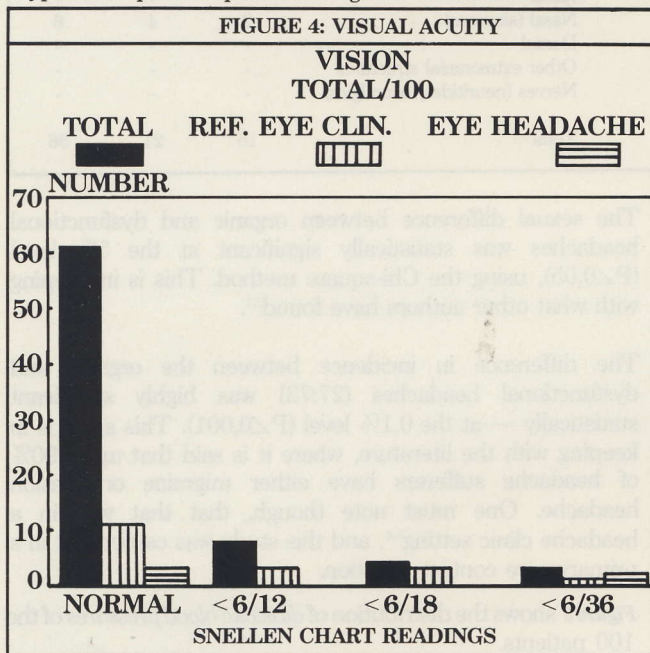


Figure 4 shows:

1. the visual acuity of the 100 patients,
2. the proportion referred to our ophthalmology clinic and
3. the proportion in whom an "eye headache" was confirmed. With "eye headache", I mean:
 - i) eye strain (hypermetropia/poor convergence) — 2 patients
 - ii) other eye headaches (here due to an optic neuritis and an inflamed pterigium) — also 2 patients.

Note that the "eye headaches" come from the "normal vision group", and those with severely impaired vision. It seems therefore that visual acuity is not a very useful way of excluding an "eye headache". Patients suffering from hypermetropia as well as those with poor convergence, could have normal vision when tested with the Snellen chart.

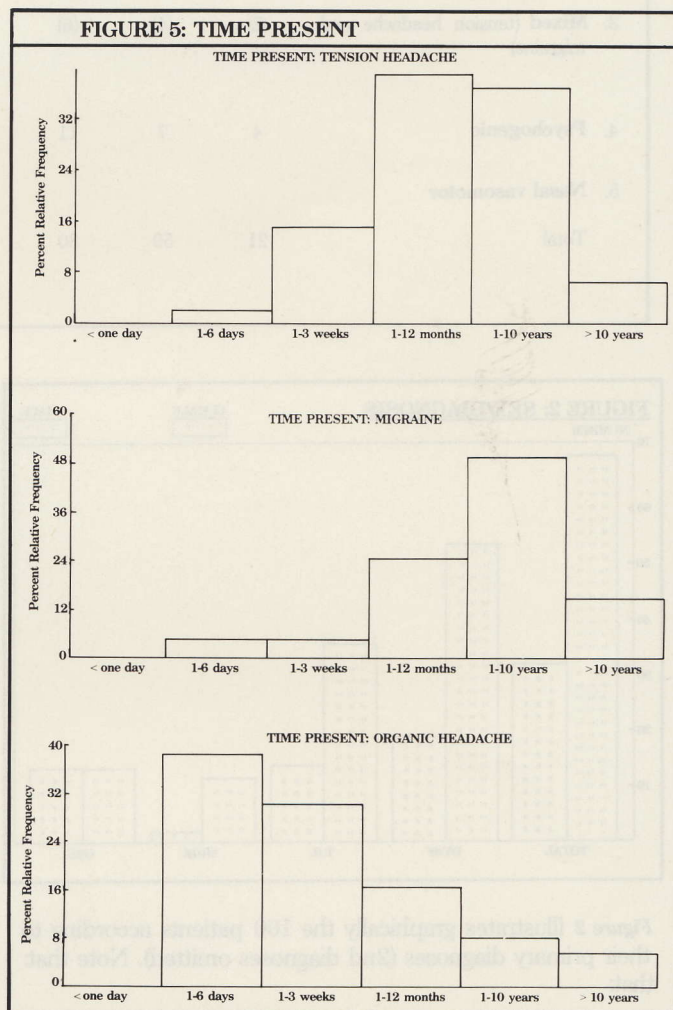
II. Characteristics

Not all the characteristics mentioned in the check list will be analysed, (although they were all done), but only the

most useful and interesting ones. Note that the following figures, illustrated by histograms, say more about how consistently I applied these characteristics in arriving at the various diagnoses, than about the frequency of the various characteristics in a particular headache. The findings are in keeping with the literature, though. As mentioned in the beginning, this is a descriptive study and one must not see it as more than that. One does however, observe certain trends.

a. Time aspects:

Figure 5 shows the difference in *time present* between migraine, tension headaches and organic headaches. Note that actual patient numbers were not used, but "percentage of relative frequency".



It is evident that tension headache numbers peak at a duration of 1-12 months, while migraine peaks at a duration of 1-10 years. Organic headaches are of much shorter duration, generally speaking, since they peak at 1-6 days.

The shorter the duration, the greater the reason for concern.

The statistical significance was $P < 0,05$ when comparing tension headache and organic headache for 1-10 years, and $P < 0,001$ when comparing them for 1-6 days.

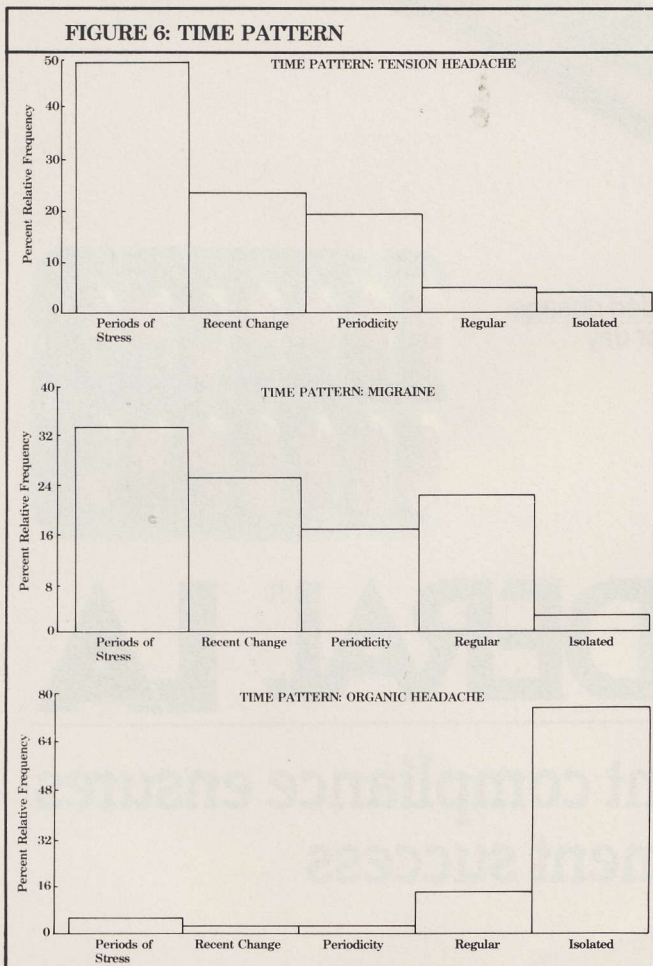
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This shows then, that "time present" was quite important in distinguishing the major types of headache from each other (ie organic and dysfunctional). This is in keeping with other publications which say that time present is the single, most useful distinguishing characteristic, and that the shorter the duration, the greater the reason for concern¹⁰. In this study the headaches due to subdural haematoma had been present for 4 days and 2 weeks respectively, the headache due to meningitis for 3 weeks, and the one due to retrobulbar neuritis for 3 weeks as well.

Organic headaches are mainly isolated and of short duration but tension headaches and migraine recur over a period of time.

Figure 6 shows the difference in *time pattern* between migraine, tension headache and organic headaches.

This illustrates clearly that organic headaches are mainly *isolated* and that tension headaches and migraine recur over a period of time. This was highly significant ($P < 0.001$). Taken together with the previous results, one can say that organic headaches are mainly isolated headaches, of short duration — ie acute single episodes.



It is true that most of them are due to common causes like flu, fever, sinusitis, etc, but these can usually be diagnosed

quite easily by means of a proper examination. The mentioned cases of meningitis, subdural haematoma and optic neuritis are examples of the more serious organic headaches.

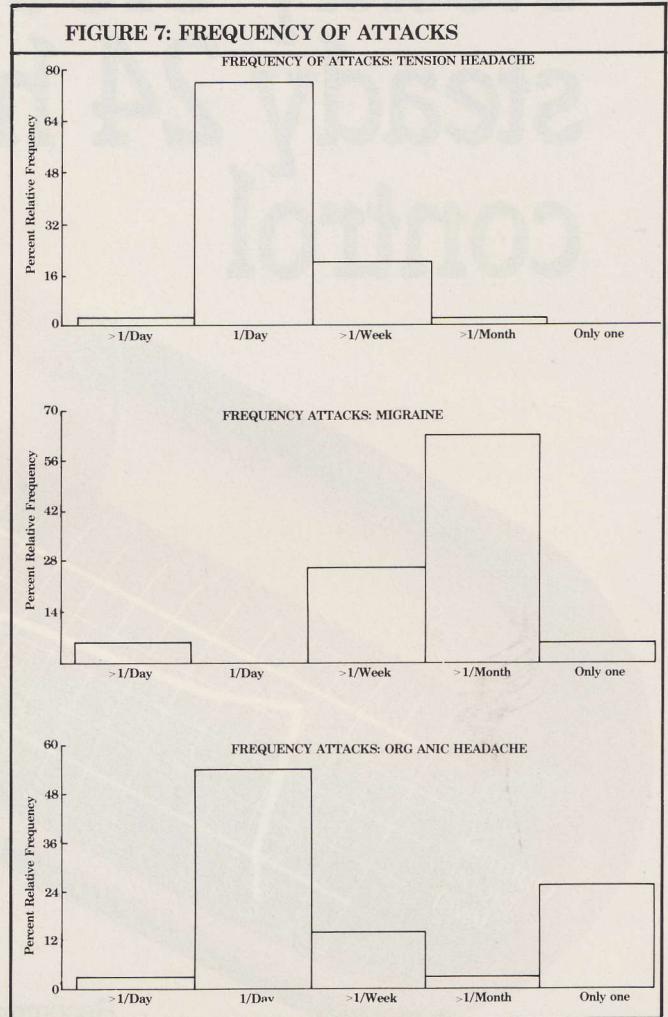


Figure 7 illustrating *frequency of attacks* of migraine, tension headache and organic headache, demonstrates an interesting differentiating aspect between migraine and tension headache. As one can see clearly, tension headache peaks very significantly ($P < 0.001$) at "1/day" and migraine at "more frequent than once per month, and less than once per week". Taken together with the previous graph, it is evident that tension headaches are episodic (occurring at times of stress) or daily (1/day) headaches, and migraine occurs more commonly regularly, at a frequency of less than once per week and more than once per month. This is in keeping with the literature^{3,11,12,13}.

One must note that there is an overlap between the two, where migraine and tension headache occur more frequently than once per week and less than daily. Sometimes tension headache was throbbing, and not dull, and when it occurred less than daily it was almost impossible to distinguish it from migraine. This is why some authors say that one should speak of "benign recurring headaches" rather than tension and migraine headaches. They say that typical migraine falls at one end of a spectrum, and the typical tension headache at the

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other end, with a continuum inbetween^{2,4}. This was also my experience to a certain extent, but by means of a careful history and follow-up, I could mostly differentiate quite clearly between the two.

b. Other aspects:

Figure 8 shows the difference in *distribution* between the different headaches — migraine, tension headache and systemic infections (the most common cause of organic headaches). Although there is an overlap it is clear that:

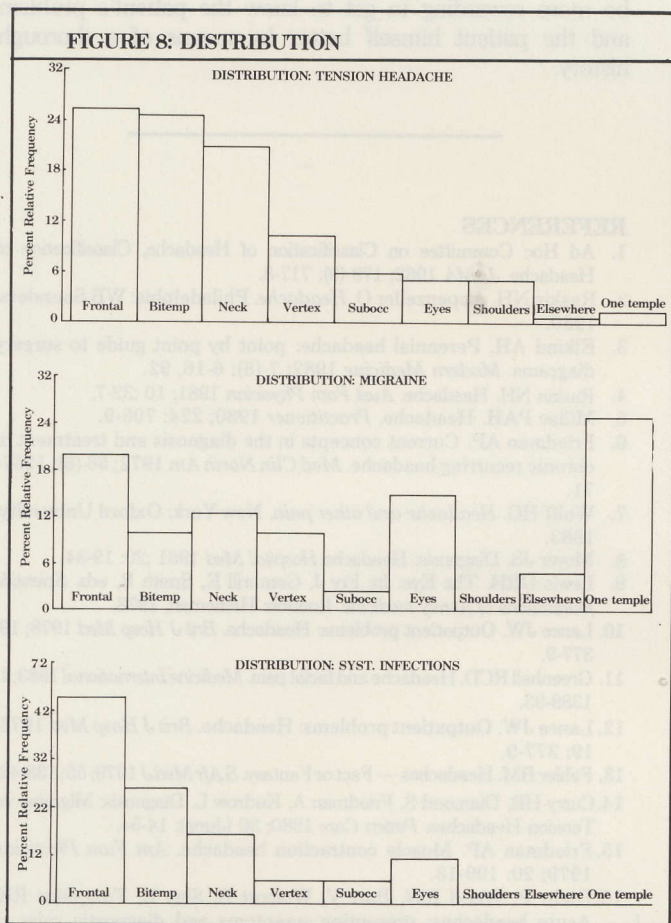
1. Tension headache peaks at frontal, bi-temporal, neck and vertex areas.
2. Migraine peaks at one temple, frontal and around the eyes, and neck.
3. Systemic infections peak at frontal and bi-temporal.

It was impossible to test for statistical significance in a meaningful way, but the tendency is clear. According to the literature, this is the distribution one would expect of those headaches^{2,7,14}.

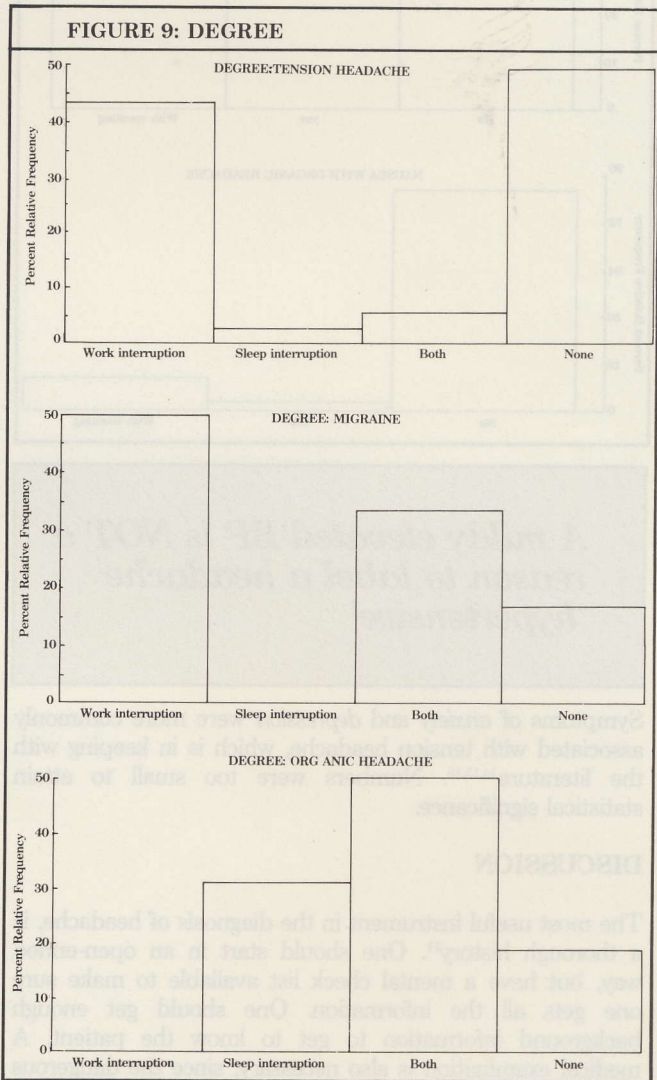
Aggravating, precipitating and relieving factors were found to be useful too, and the patient should be questioned about these (eg light aggravating, and a darkened room relieving migraine; vascular headaches being aggravated by stooping, coughing or straining; sinusitis aggravated by bending forwards; etc).

Symptoms of anxiety and depression were more commonly associated with tension headache.

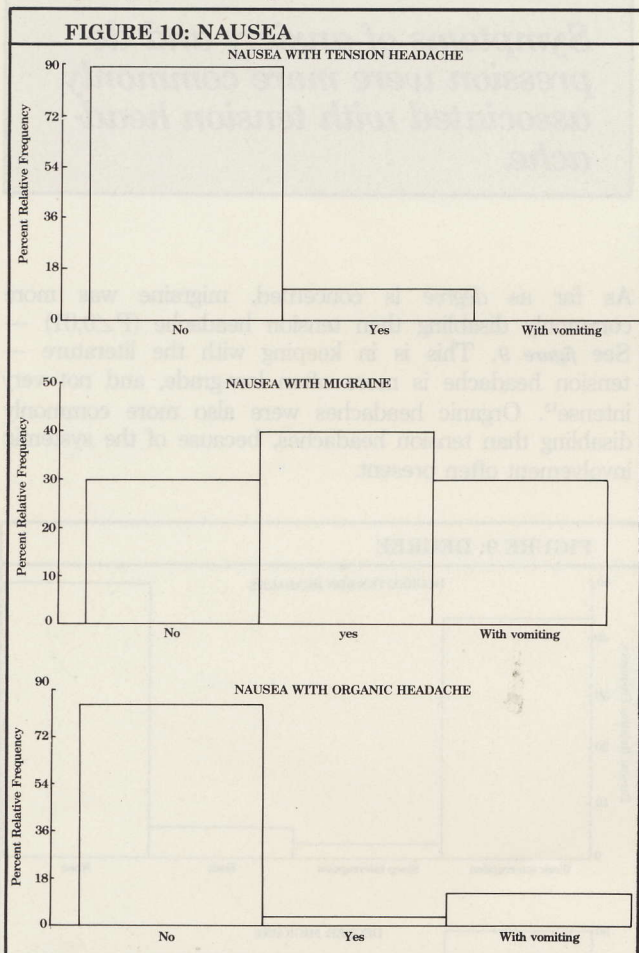
As far as *degree* is concerned, migraine was more commonly disabling than tension headache ($P < 0,01$) — See figure 9. This is in keeping with the literature — tension headache is more often low-grade, and not very intense¹⁵. Organic headaches were also more commonly disabling than tension headaches, because of the systemic involvement often present.



Visual acuity does not seem a very useful way of excluding an 'eye headache'.



Of the associated features, I decided to test especially nausea (see figure 10) since many people say that nausea is the most important distinguishing feature between migraine and tension headache^{15,16} (68% with nausea had migraine, and 83% without nausea, had tension headache, in one study¹⁵). A very high statistical significance was attained when comparing either tension headache or organic headache with migraine in this regard ($P < 0.001$). It is important to note that here, as elsewhere, there is an area of overlap^{2,16} (see the histogram).



A mildly elevated BP is NOT a reason to label a headache 'hypertensive'

Symptoms of anxiety and depression were more commonly associated with tension headache, which is in keeping with the literature^{14,15,18}. Numbers were too small to attain statistical significance.

DISCUSSION

The most useful instrument in the diagnosis of headache, is a thorough history¹¹. One should start in an open-ended way, but have a mental check list available to make sure one gets all the information. One should get enough background information to get to know the patient. A medical examination is also necessary, since the dangerous

conditions (eg meningitis, subdural haematoma, brain tumor) can only be picked up that way, although the history can already alert one to the possibility.

Follow-up is generally another important tool in the hand of the primary care doctor, and especially when dealing with a headache patient¹⁴, provided one can exclude the dangerous conditions with the first visit. As illustrated, this shouldn't be difficult, since organic headaches tend to be sub-acute to acute, isolated, headaches of increasing intensity^{12,19}.

A patient with a frontal headache made worse by studying does not necessarily need glasses.

Finally I want to comment that a mildly elevated blood pressure is **NOT** a reason for labelling a headache as "hypertensive". Nor does a patient with a frontal headache, made worse by studying, necessarily need glasses. It might be more rewarding to get to know the patient's problem and the patient himself better by means of a thorough history.

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