Article

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Prevalence and management of headache in a selected area of Southern Santa Catarina

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ABSTRACT

Headache is a worldwide health problem which affects quality of life. **Objective:** To identify the prevalence and management of headache and examine its impact. **Method:** A cross-sectional study with 240 participants was performed to collect data related to (a) headache occurrence, (b) its impact through the "Migraine Disability Assessment Test" (Midas), and (c) headache management. **Results:** Last year prevalence (2008) was 64.6%. There was a low Midas score in 80.6% of cases. With regard to headache management, 86.4% of respondents said that they use medicines, mainly analgesics (73.9%). Prescribed medicines were used in 31.0% of cases, although 72.4% of those were old prescriptions. Headache was associated with gender (p=0.0002), occupation (p=0.0109) and mean age (p=0.0083), while the Midas score was associated with pain intensity (p=0.0069) and the use of drugs only during headache crisis (p=0.0464). **Conclusion:** There was a high prevalence of headaches and a low level of disability among the population studied, being the management based on self-medication.

Key words: headache, self-medication, prevalence.

Prevalência e manejo de cefaléias em um município do sul de Santa Catarina

RESUMO

As cefaléias constituem um problema de saúde mundial que afeta a qualidade de vida. **Objetivo:** Identificar a prevalência de cefaléias, conhecendo seu impacto e manejo adotado. **Método:** Estudo transversal com 240 participantes, coletando-se dados relacionados à ocorrência de cefaléia; impacto através do *Migraine Disability Assessment Test* (Midas); e manejo. **Resultados:** A prevalência no último ano (2008) foi 64,6%. O escore do Midas foi pequeno em 80,6% dos casos. Em relação ao manejo, 86,4% dos entrevistados utilizavam medicamentos, principalmente, analgésicos (73,9%). Em 31,0% das situações o medicamento foi prescrito, sendo que destas, 72,4% eram prescrições antigas. A cefaléia associou-se com gênero (p=0,0002), situação profissional (p=0,0109) e média de idade (p=0,0083) e o Midas com intensidade da dor (p=0,0069) e uso de medicamentos apenas na crise (p=0,0464). **Conclusão:** Houve alta prevalência de cefaléias e baixo grau de inaptidão na população estudada, sendo o manejo baseado na automedicação.

Palavras-chave: cefaléia, automedicação, prevalência.

Headache is a health problem worldwide which can affect individuals of all age groups and both genders[1-3]. Very few people will experience no headache crisis during their lifetime. Headache prevalence is higher among women[1], being related to gender[4,5] as well as to other factors, such as the use of hormonal birth control pills, white people[4], low economic level, divorce or widowhood[5], somatic symptoms[6], menstrual cycle[7], presence of comorbidities and higher risk for mental illness and other pain conditions[8]. For some, headaches become a limiting condition that interferes

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with their quality of life, affecting professional activities, as well as social and affective relationships[9]. The Migraine Disability Assessment Test (Midas)[10] was used to examine the impact of headache on different aspects of individuals' life. Through five questions, this instrument measures the individual's disability caused by headaches, taking labor absence and productivity reduction in the last three months as parameter. This instrument was translated into Portuguese and validated for headache assessment[11].

Because headaches interfere with daily life, a large number of patients seek treatment outside health care institutions, mainly through self-medication and advice from friends and family. In Vitoria/ES, it was observed that 69.9% of respondents with headache used common painkillers, among which sodium dipyrone (26.8%) and paracetamol (25.5%)[12] were the most frequently mentioned. In addition to pharmacological management, individuals may use non-pharmacological management, such as rest[13], physiotherapy[14] and acupuncture[15].

This study aimed to identify the prevalence and management of headaches among individuals living in a municipality in southern Santa Catarina and examine the impact on their daily lives.

METHOD

A cross-sectional study was carried out using interview technique in public places of Tubarão/SC, including squares, university, health care units, bus terminals, among others, as performed by Domingues and colaborators[12]. This method requires a convenience sample which was selected among the population of 92,569 inhabitants according to the census conducted by the Brazilian Geography and Statistics Institute (IBGE) in 2007.

Sample size was determined by the estimated prevalence of headache of 80.8% as indicated by Queiroz and collaborators[5]. Considering a significance level of 95% and an error of 5%, sample size of 238 individuals was determined, using the Epi Info™ version 6.0. Inclusion criteria required participants to be 18 years and over, live in the selected area and accept to participate in the study by signing the term of free and informed consent.

The data collection instrument was composed of both open-ended and closed questions, which aimed to gather information regarding the individual's profile such as age, gender, criteria for economic classification[16], marital status, occupation, etc.; the occurrence of headache and its characteristics according to the International Headache Society[17], the Brazilian Headache Society[18], and Maranhão-Filho[19], such as frequency, duration, intensity, location, type of pain and factors (triggering, accompanying and aggravating); the impact of headache on the individual daily life using the Midas[10,11] scores; and the type of disorder management used. In case of medication intake, the type, frequency, drug indication, and reuse of old prescriptions was assessed.

A pilot study with ten individuals living in other municipalities and, therefore, not included in the sample, was carried out to check the appropriateness and readability of the questions. There was no need for change and so the instrument was approved.

Initially, a database containing the variables of the study was created, which was subsequently evaluated to determine the prevalence of headaches and the profile of respondents. To study data association, chi-square tests were used for proportions and analysis of variance for mean comparisons. A significance level of 5% was used.

This study was approved by the Research Ethics Committee of the University of Southern Santa Catarina under the code number 08.495.4.06.III.

RESULTS

The sample comprised 240 individuals aged 18 to 77 years (mean 41.7±15.8 years), the majority out of which were Caucasian (94.6%), married (45.8%), had children (65.0%), and lived with their families (86.6%). Regarding the economic level, 57.0% belonged to categories C and D, according to the Brazilian Economic Classification Criterion[16] (Table 1).

The population under study consisted mainly of women (71.2%). As to the variables for menstruation and oral contraceptive use, it was observed that 57.3% of women had regular menses in the last 3 months and 35.1% were using oral contraceptives.

The individuals' clinical profile was characterized by self-reported health problems as described in Table 1.

Last year prevalence of headaches was 64.6% (95% confidence interval: 70.6-58.5), corresponding to a total of 155 reported cases.

Table 2 shows headache characteristics in the study population. A positive family history of headache was found in 64.3% of headache sufferers. Interviewed individuals had been affected for 11.7 (±12.5) years on average; some reported that headaches had started a few months ago, while others had been suffering for as long as five decades. With regard to the most common headache characteristics, data show that they occur every month (32.2%), last for hours (48.4%), are of moderate intensity (37.4%) and are reported constant (76.6%).

In some cases (24.0%), the presence of previous pain symptoms, such as dizziness (13.5%) and aura (13.5%) pointed to the beginning of a crisis, triggered primarily by emotional disorders (61.7%) and hormonal imbalances (37.7%). Emotional stress (65.2%) was found to exert significant influence on headache occurrence, while as intolerance to sound (52.2%) and light (48.4%) were commonly mentioned as shown in Table 3. Data collect-

Table 1. Sample description according to socioeconomic and demographic variables (n=240).

Characteristics	Description	n	%
Age	< 30	75	31.3
	30-55	114	47.5
	> 55	51	21.2
Gender	Male	69	28.8
	Female	171	71.2
Marital status	Married	110	45.8
	Widow/er	16	6.7
	Divorced	22	9.2
	Unmarried	84	35.0
	Stable relation	8	3.3
Economic classification*	A1	0	0.0
	A2	6	2.5
	B1	27	11.3
	B2	70	29.2
	C1	83	34.5
	C2	43	17.9
	D	11	4.6
	E	0	0.0
Schooling	Illiterate or up to the 3rd grade	21	8.8
	Up to 4th grade	50	20.8
	Primary school	41	17.1
	High school	96	40.0
	Higher education	32	13.3
Residency	With family	208	86.6
	Alone	27	11.3
	With friends	5	2.1
Health problem reported	Yes	98	40.8
	No	142	59.2
Most frequent health problems	Arthritis	10	4.2
	Depression	21	8.8
	Diabetes	13	5.4
	Hypertension	37	15.4
Most frequently used medications (n=175)	A – Food and metabolism	18	10.3
	C – Cardiovascular system	41	23.4
	G – Genito-urinary system and sex hormones	26	14.9
	N – Nervous system	41	23.4
Headache-related medications** (n=175)	Calcium channel blockers	1	0.6
	Nitrates	2	1.2

*Brazilian Economic Classification[15]; **Described by Thomson[19].

ed on headaches suggest that they are mainly migraine and tension-type.

The Midas score was less than 5 in 80.6% of those who reported headache in the last year, having little or no disability as it can be seen in Table 2.

With regard to the type of management used, 86.4% of individuals reported the use of medicines, being painkillers (73.9%) the most frequent, especially paracetamol and dipyrone sodium, and muscle relaxants (12.8%), such as orfenadrina and combinations. These results can be seen in Table 4. It should be noted that the chronic use of analgesics for 15 days or more was mentioned by 12.9% of these individuals, nonetheless, in this study there was no significant association between the frequent use of medications and daily headache (p=0.0898).

The use of medications for headache management was observed predominantly during the crisis (80.6%), being the same medication used for years (78.1%) or months (11.2%), which led to headache improvement (66.3%) or relief (19.8%).

Data showed that only 31.0% of individuals who manage headache with the use of medications were taking prescription drugs, of which 72.4% said they reused old prescriptions. In the headache management with the use of drugs, the main sources of information for their use included medical advice (28.3%), followed by suggestions

Table 2. Characteristics of headaches and disability level of individuals (MIDAS).

Characteristics	Description	n	%
Headache frequency (n=155)	Daily	26	16.8
	Weekly	39	25.2
	Monthly	50	32.2
	Sporadic	40	25.8
Headache duration (n=155)	Seconds	1	0.6
	Minutes	30	19.4
	Hours	75	48.4
	Days	44	28.4
	Weeks	1	0.6
	Constant	4	2.6
Intensity (n=155)	Mild	45	29.1
	Moderate	58	37.4
	Severe	52	33.5
Location of pain (n=154)	Unilateral	27	17.5
	Alternating between one and two sides	27	17.5
	Bilateral	55	35.7
	In front	36	23.4
	Behind	7	4.5
	In front and behind	2	1.4
Type of pain (n=154)	Constant	118	76.6
	Chocks	23	14.9
	Burning	11	7.1
	Pressure	2	1.4
Degree of disability according to the MIDAS score (n=155)	Little or no disability (score 0-5)	125	80.6
	Mild disability (score 6-10)	14	9.0
	Moderate disability (score 11-20)	8	5.2
	Severe disability (score >21)	8	5.2

MIDAS: migraine disability assessment test.

Table 3. Main factors related to headaches.

Characteristics	Description	n	%
Main triggering factors (n=154)	Emotional changes	95	61.7
	Sunlight exposure	11	7.1
	Delay in food intake	44	28.6
	Sleep schedule changes	35	22.7
	Food and diet products	21	13.6
	Vicious positions of the neck	24	15.6
	Hormonal changes	58	37.7
Main accompanying factors (n=155)	Intolerance to light	75	48.4
	Intolerance to sounds	81	52.2
	Intolerance to odors	49	31.6
	Nausea	62	40.0
	Vomiting	36	23.2
	Lowering of one of the eyelids	21	13.5
	Tearing and redness in the eyes	34	21.9
	Nasal congestion or rhinorrhea	13	8.4
Main aggravating factors (n=155)	Physical activity	30	19.3
	Emotional stress	101	65.2
	Noise	63	40.6
	Odors	44	28.4
	Light stimuli	37	23.8

Table 4. Management of headaches.

Characteristic	Description	n	%
Management used (n=155)	Nothing	14	9.0
	Medications	134	86.4
	Non-pharmacological	40	25.8
Pharmacological classes mentioned (n=187)	M01A – Non-steroidal antiinflammatory	16	8.6
	M03 – Muscle relaxants of central action	24	12.8
	N02 – Painkiller	138	73.9
	Others	6	3.1
	Unknown	3	1.6
Most frequently used medications (n=134)	Orfenadrina and combinations (M03BC51)	22	16.4
	Acetylsalicylic acid (N02BA01)	10	7.5
	Dipyrone sodium (N02BB02)	39	29.1
	Propifenazona and combinations (N02BB54)	8	6.0
	Dipyrone and combinations (N02BB72)	7	5.2
	Paracetamol (N02BE01)	52	38.8
	Paracetamol and combinations (N02BE51)	5	3.7

from friends, neighbors and relatives (27.9%), and orientation obtained in pharmacies (24.4%).

Non-pharmacological management of headache was adopted by 25.8% of individuals and included the use of compresses and resting in bed, which resulted in crisis improvement or at least headache relief.

The results of the statistical tests performed to determine associations between variables studied can be seen in Table 5.

DISCUSSION

In this study we chose to use the methodology employed by Domingues and collaborators[12], interviewing people in public places of the municipality. The adoption of this methodology represented a limiting factor, since it is not a population-based study. On the other hand, as an exploratory study, it allowed examining the profile of patients with headaches in the municipality and pain management methods used to deal with this problem so far unknown. The possibility of underestimation of headache prevalence during the study period when compared to individuals' lifetime should also be noted. Those with appropriate treatment or in the absence of the triggering factor have responded negatively to headache incidence in the previous year. This situation would not have occurred had they been asked about the incidence of headache during their lifetime. In addition, another limiting possibility would be the forgetfulness of the period in which the crisis have occurred, if before or after the cut-off period set in this study. It is also important to emphasize that this study was focused on the complaint of headache and not on its diagnostic classification.

However, the study is important for determining prevalence and factors associated with headache, such as management and disability. It constitutes a new research in the region and can help optimize public service delivery that meets the demand of individuals with headache, since a great number of individuals who were not yet assisted by the health services were included in this study. The high cost of headaches for the public health system as demonstrated by Bigal and collaborators[21] in a municipality in the state of São Paulo, where headaches are responsible for 7.9% of consultations in primary health care units, 9.7% in the ER and 1.1% of hospital admissions in the public health system, reinforces the importance of epidemiological studies for planning health care strategies.

The results showed a high prevalence of headaches in the population studied, which corroborates other studies developed in the country[4,5,22], in which prevalence rates ranged from 48.1 percent to 80.8 percent.

Another factor confirmed by this study was the higher prevalence of headache among women, which has also been found in other studies[1,4,5] in which pain is often associated with emotional or hormonal triggering factors. Also related to the fact of being women, the use of oral contraceptive or the presence of regular menstruation were not associated with the incidence of headaches as described in the literature[4,23,24].

Unlike gender, which is often associated with headaches in the literature[1,4,5], other variables have not yet been consolidated as significantly associated with the incidence of headaches, and different studies have shown contradictory results. Thus, it is emphasized that there was no association between the incidence of headache and white skin (Caucasian) as reported by the study of Pahim and collaborators[4]. Similarly, socioeconomic level was not significantly associated as demonstrated by Silberstein and collaborators[25] and Queiroz and collaborators[5]. Schooling level was another variable measured which showed no influence on this health problem, while Silva and collaborators[1] indicated the opposite.

On the other hand, occupation was a determining fac-

Table 5. Statistical tests performed to determine associations between variables.

Characteristic		Complaints of headaches (n=240)		p
		Yes (%)	No (%)	
Gender	Female	123 (79.4)	48 (56.5)	0.0002*
	Male	32 (20.6)	37 (43.5)	
Occupation	Retirees or pensioners	27 (17.4)	27 (31.7)	0.0109*
	Others	128 (82.6)	58 (68.3)	
Mean age[1]		39.7±14.6	45.3±17.2	
Color of skin	White (Caucasian)	146 (94.2)	81 (95.3)	0.7186
	Non-white	9 (5.8)	4 (4.7)	
Schooling	Up to primary school	73 (47%)	39 (45.8)	0.8569
	High school or higher education	82 (53%)	46 (54.1%)	
Economic classification*	A or B	67 (43.2)	36 (42.3)	0.8960
	C or lower	88 (56.8)	49 (57.7)	
Marital status	Divorced or widow/ers	25 (16.1)	13 (15.3)	0.8654
	Others	130 (83.9)	72 (84.7)	
Living with	Alone	19 (12.3)	8 (9.4)	0.5045
	Others	136 (87.7)	77 (90.6)	
Use of oral contraceptive	Yes	45 (36.6)	15 (31.3)	0.5112
	No	78 (63.4)	33 (68.8)	
Regular menstruation	Yes	74 (60.2)	24 (50.0)	0.2273
	No	49 (39.8)	24 (50.0)	
Hypertension	Yes	24 (15.5)	13 (15.3)	0.9689
	No	131 (84.5)	72 (84.7)	
Characteristic		**Midas (n=155)**		**p**
		1 or 2 (%)	**3 or 4 (%)**	
Age	Up to 41 years	76 (54.7)	9 (56.2)	0.9046
	Above 41 years	63 (45.3)	7 (43.8)	
Intensity of pain	Mild	45 (32.4)	0 (0.0)	0.0069*
	Moderate or severe	94 (67.6)	16 (100.0)	
Gender	Female	108 (77.7)	15 (93.8)	0.1330
	Male	31 (22.3)	1 (6.2)	
Occupation	Retirees or pensioners	23 (16.6)	4 (25.0)	0.3985
	Others	116 (83.4)	12 (75.0)	
Headache duration	For hours	98 (70.5)	8 (50.0)	0.0948
	Exceeding days	41 (29.5)	8 (50.0)	
Non-pharmacological management	Yes	35 (25.2)	5 (31.2)	0.5992
	No	104 (74.8)	11 (68.8)	
Pharmacological management 2	Yes	120 (86.3)	14 (87.5)	0.8970
	No	19 (13.7)	2 (12.5)	
Use of prescription drugs	Yes	48 (29.8)	9 (36.0)	0.5325
	No	113 (70.2)	16 (64.0)	
Use of current prescriptions	Yes	11 (22.4)	5 (55.6)	0.0411*
	No	38 (77.6)	4 (44.4)	
Use of medications only during headache crisis	Yes	134 (83.2)	16 (64.0)	0.0236*
	No	27 (16.8)	9 (36.0)	
Headache improvement	Yes	119 (78.8)	5 (23.8)	0.0000*
	No	32 (21.2)	16 (76.2)	

[1]Analysis of variance; for the other variables chi-square test was used. *Statistically significant associations (p<0.05). **Brazilian Economic Classification[15].

tor for headache. The fact that active employees showed greater tendency to develop headaches than pensioners and retirees can suggest that they are more heavily exposed to triggering and aggravating factors. These factors include, for example, emotional stress in the workplace, which, however, was reported as irrelevant by Domingues and collaborators[12].

Analysis of variance was used to compare variables and it revealed that mean age of the group that reported headache and one that had not reported it was significantly different. Younger individuals have greater tendency to suffer from headaches than the older, an association which was not found by Pahim and collaborators[4]. This may be related to the fact that these individuals are in the active phase of life, with greater responsibility and exposed to a greater degree of stress, while most of the older are retirees or pensioners.

The Midas score used to measure disability caused by headaches on individuals' lives revealed to be generally low, a result which is different from that found in another study in which 58.6% of subjects with migraine had severe disability as measured by the Midas[26] score, highly superior to the results shown in this study.

The value found in this study is close to the results obtained by Miranda and collaborators[13], who carried out a survey with regular exercise practitioners, as well as those found by Lucas and collaborators[27]. The degree of disability indicated by the total Midas score was positively proportional to pain intensity reported by individuals, i.e., the higher the score, the more severe is the pain, a result which is different from that presented in the literature[26].

Through the characteristics of headaches reported by subjects in the study, such as type of pain, location, triggering and aggravating factors, and management used, in addition to the data available in the literature[17,18,25], it could be possible to suggest that the sample has a high percentage of tension-type headache and migraine. Confirmation of these assumptions corroborates other studies, which have shown that these types of headaches are common among the general population[4], and among the age group[5] investigated.

A predominance of pharmacological management over non-pharmacological measures, such as the use of compresses, was observed. The latter represented a small percentage when compared to the study of Miranda and collaborators[13], in which 70% of individuals reported bed resting when affected by headaches. The use of medications, mainly common over-the-counter painkillers, was observed especially in acute crisis. The most frequently used drug was paracetamol, followed by dipyrone sodium, mentioned in various studies as the most common option for headache management[12,28].

Through statistical analysis, significant difference was observed between those who had a lower degree of disability according to the Midas score and those who used drugs only in acute crisis with effective improvement. This is expected because when headaches do not interfere with the individuals' daily lives and when it is easy to handle should they occur, there is no need for a prophylactic treatment. It was also observed that individuals with higher Midas scores make use of current prescriptions, which is probably resulting from more frequent medical monitoring.

Others make use of self-medication through old medical prescriptions or through information on medicines from lay individuals and health professionals, situation which is described in the literature for the treatment of minor disorders[12,22]. In a study conducted in a city of western Santa Catarina, Pizzatto and collaborators[23] showed that 77.3% of respondents with headache reported self-medication for pain relief. Corroborating high rates of self-medication for headache management, Vilariño and collaborators[29] determined the profile of self-medication in a city of southern Brazil, where headaches were mentioned as the major reason for self-medication, being analgesics, antipyretics and non-steroidal anti-inflammatory drugs the most frequently used.

Self-medication based on the indiscriminate and sometimes abusive use of common painkillers, besides exposing the individual to all kind of related risks, can be a precipitating factor for chronic daily headache[30,31]. However, the correlation between the daily use of analgesics and daily headache was not statistically significant (p=0.0898) in this study. Nonetheless, this fact deserves further investigation.

Considering the high self-medication rate, it is evident that a great distance exists between the individual with headache and the establishment of an effective treatment that leads to headache prevention or improvement. Health care systems and their professionals should provide guidance, promotion of rational use of medicines and adoption of non-pharmacological measures to improve individuals' quality of life.

Despite methodological limitations already mentioned, it can be concluded that there is high prevalence of headaches among the population studied, especially among women. Headaches also occur among younger individuals, a fact possibly explained by being professionally active and consequently exposed to a greater number of stressful factors. Headache management was primarily pharmacological, particularly through self-medication, while a small portion of individuals performed a regular treatment monitored by health care professionals. The impact on most individuals' lives was small or absent, and when severe it was associated with intense pain. Thus, the development of further research on the topic is

central to the clarification of issues not addressed in this study and can significantly contribute for the rational use of medicines in the management of headaches.

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