

# PREVALENCE AND IMPACT OF HEADACHE AND MIGRAINE AMONG POMERANIANS IN ESPIRITO SANTO, BRAZIL

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**ABSTRACT** - This is the first study to assess the prevalence of headache and migraine among Pomeranian descendants in Brazil. A high prevalence of headache in the last 6 months was found (53.2%). Most headache sufferers were diagnosed as having migraine (55%). More women reported to have headache than men (65% and 33.8%, respectively). Migraine was the most common headache found among women (62.2%). Among men migraine was responsible for only 37.8% of the cases of headache. A high impact of headache was found, especially among migraineurs. Most of the headache sufferers declared to seek medical assistance for headache (67%) and most of them used to take common analgesics for headache relief. None of them was under prophylactic therapy.

**KEY WORDS:** headache, migraine, Pomerans, prevalence.

## Prevalência e impacto da cefaléia entre pomeranos do interior do Espírito Santo

**RESUMO** - Este estudo é o primeiro a avaliar a prevalência da cefaléia e da migrânea entre descendentes de pomeranos no Brasil. Demonstrou-se alta prevalência de cefaléia (53,2%), sendo que a migrânea foi responsável por 55% das cefaléias. Houve maior prevalência de cefaléia entre as mulheres (65%) do que entre os homens (33,8%). Entre as mulheres verificou-se maior prevalência de migrânea (62,2%) sobre as outras cefaléias (37,8%). Entre os homens a migrânea foi responsável por apenas 34,6% dos casos de cefaléia. Verificou-se importante impacto da cefaléia nesta população, especialmente entre os portadores de migrânea. A maior parte (67%) dos portadores de cefaléia recebia algum tipo de orientação médica em relação ao problema, e a maioria fazia uso de medicamentos analgésicos comuns. Nenhum dos indivíduos estava em tratamento profilático.

**PALAVRAS-CHAVE:** cefaléia, migrânea, pomeranos, prevalência, impacto.

The third largest population of Pomeranian descendants is found in the mountain region of the State of Espírito Santo, Brazil. They have a very peculiar lifestyle with preserved traditions and language. Agriculture is their main economic activity. The study of health problems in this population and the study of health problems in Pomeranians living in Germany and other parts of the world would be an interesting way to evaluate the influence of the environment over certain health problems, including headaches and migraine.

Primary headaches, especially migraine and tension type headache, are highly prevalent and are a major public health problem<sup>1</sup>. There is a high prevalence of these diseases in Brazil, however, the prevalence rates have varied from region to region<sup>2-6</sup>.

Different methodological approaches can be the reason of these differences but the enormous ethnic variability found among Brazilians, with European, Indian, African, and Asian influences, may also play a role. Also, the huge social-economical and lifestyle discrepancies found in the Brazilian population may have some influence on the headache prevalence and on the impact of primary headaches over the work performance and over the quality of life. Therefore headache studies in different Brazilian areas and different Brazilian population are potentially helpful in understanding the epidemiology of primary headaches.

Here we report the results of the first epidemiological headache survey among Pomeranian descendants living in Brazil. This study was carried out in a

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Pomeranian rural community located in the region of Domingos Martins, ES. This study aimed to identify the prevalence of headache and migraine, the impact of headache and migraine, and the headache treatments used in this community.

## METHOD

A questionnaire was administered by a group of medical students attending the Headache Program of the Escola Superior de Ciências da Santa Casa de Misericórdia de Vitória (EMESCAM). This questionnaire was applied to Pomeranian descendants of Melgaço community in Domingos Martins city, State of Espírito Santo. It is estimated that there are nearly 1500 Pomeranian descendants in Domingos Martins distributed in six different communities: Sede, Melgaço, Biriricas, Santa Isabel, Parajú, and Aracê. Nearly 300 Pomeranian descendants live in Melgaço and are under the medical assistance of the local PSF (Family Health Program). Two hundred and three individuals - average age  $40.7 \pm 17.5$  years, being 126 (62%) women - were reached by a door to door search by the students guided by at least one member of the Family Health Program staff of that community. The health professionals were mostly bilingual Pomeranian descendants, and also served as translators once many of the community subjects only speak the Pomeranian dialect. Included subjects were all those who agreed to participate and were able to understand and answer the questionnaire.

All volunteers were asked about the presence of headache in the last six months. A headache questionnaire was applied. This questionnaire included questions about the characteristics of headache (throbbing or pressing), localization and duration of pain, headache frequency, associated features, such as nausea, vomiting, photophobia, and phonophobia. The impact of headache on their activities was registered asking how frequently headache has affected or impeded professional activities in the last six months. The frequency of Emergency Room visits in the last year due to headache was also registered. Migraine was diagnosed according to the International Headache Society criteria<sup>7</sup>. Other headache sufferers were classified as having non migraine headache.

Statistical comparisons were performed by using the Chi-Square test.

This study protocol was approved by the Pomeranian and health authorities of that community. Written agreement was obtained from each participant of the study.

## RESULTS

The number of individuals referring headache in the last six months was 108 (53.2%). The prevalence of headache was higher among women, 82 of the women (65%) had headache while only 26 of the men (33.8%) referred headache in the last six months. Sixty out of the 108 headache sufferers fulfilled diagnostic criteria for migraine (55.5%). Fifty one women (40.5% of all women) had migraine and nine (11.7% of all men) had migraine.

Among those with non migraine headache 54% referred that headache had no impact on their activities, 27% declared that headache had impact less than once a month and 19% reported that headache compromised activities more than once a month. Most of the individuals with migraine declared impact of headache on their activities. Impact among migraineurs was reported to occur more than once a month by 55% and less than once a month by 30%. Only 15% of the migraineurs declared that headaches had no impact on their activities. There was a greater impact of headache among Pomeranians with migraine than those with non migraine headache ( $p < 0.0001$ ). Twenty two individuals with migraine (36.7%) and seven (14.6%) with non migraine headache sought Emergency Room at least one time in the last year complaining about headache ( $p = 0.01$ ).

Eighty four (77.7%) of headache sufferers declared to use analgesics for pain relief, 56 (66.7%) of them used analgesics according to medical prescription. The others were taking analgesics by self medication. Forty one individuals used dipyrone (49%), 14 used acetilsalicylic acid plus caffeine (16.6%), 11 (10.7%) used isometepten, caffeine, dipyrone (9.2%), five (5.9%) used paracetamol, five (5.9%) used acetilsalicylic acid alone, and four of them (4.7%) used ergotic compounds. Thirty six (42.8%) of the individuals using analgesics declared to be using more than five analgesic pills a week. Twenty subjects (23.8%) reported to take more than ten analgesic pills a week. None of them was under prophylactic therapy. None of them reported to use alternative or non pharmaceutical practices to relieve their headaches.

## DISCUSSION

Several studies have focused on prevalence and impact of headaches and migraine. Those diseases have great impact on work, family, and leisure. Great economic harm due to lost workdays and reduced productivity is associated with them. In Brazil the prevalence and impact of migraine have been assessed in several populations like hospital employees and university students but none of those studies has focused a specific ethnic group. Also all of those studies were performed in urban areas. The present study is the first to evaluate the prevalence and impact of migraine in a rural population of European descendants living in Brazil. The population we have studied is ethnically very homogeneous since the Pomeranians of that region are isolated and have had a very little miscegenation with other Brazilian ethnic groups.

There were some difficulties in the elaboration and the accomplishment of this epidemiological study. First, there are not official data about the precise number of Pomeranian descendents in the region. Second, most of the individuals in that community could only be reached by a door to door search, since not all the residences have telephonic line. The accomplishment of this study was only possible thanks to the registers of health of the Family Health Program and the participation of the health professionals of this program that are members of the community and Pomeranian descendents. We have found a prevalence of 53.2% of headache in the last six months. Migraine was the most frequent type of headache in this population. Migraine was diagnosed in 40.5% of the women and 11.7% of the men. These data are close to other Brazilian studies. In a study in Vitoria, the largest city of Espirito Santo state, we have found a 52.8% headache prevalence<sup>8</sup>. In that study the prevalence of headache was also higher among women. Several Brazilian studies have evaluated the migraine prevalence. One study has found an overall 17.4% and 7.8% female and male migraine prevalence, respectively<sup>6</sup>. Bigal et al. have showed migraine prevalence of 30.4% among hospital employees<sup>2</sup>. Da Costa et al. have found migraine without aura in 31.3% and migraine with aura in 8.2% in a population of medical students<sup>3</sup>. These numbers seem to show a lower prevalence than we found in this Pomeranian population. However, in another study among medical students, Sanvito et al. found higher migraine prevalence among medical students; 54.4% and 28.3% of male and female medical students had migraine, respectively<sup>4</sup>. To our knowledge there are not data about migraine prevalence among Pomeranians in Germany. The cross-sectional population-based Study of Health in Pomerania (SHIP) has evaluated the prevalence and the impact of some headaches among Germany Pomeranians<sup>9-12</sup>. However all their already published studies have addressed specifically temporomandibular disorders prevalence and impact and not migraine. Studying migraine prevalence among German Pomeranians and the correlation of these potential data with other populations of Pomeranian descendents migraine prevalence would be an interesting way to infer about the environment influence over migraine prevalence and impact since those populations are supposed to be genetically closely related.

Most of the Brazilian studies about migraine prevalence were carried out in urban areas. It has been suggested by previous studies that the lifestyle may

influence the prevalence of migraine<sup>12</sup>. Most studies, however, have not found large variations in prevalence of headache and migraine in different social and economical groups<sup>13-17</sup>. The lifestyle of the population we have studied shows a remarkably little influence of the industrial society. Agriculture is the main activity and most of them own small properties in which the work is done by the members of the family. Trading in large cities is not usual. The children learn the Pomeranian dialect as their first language. The region is a quiet and rural place and the usual temperatures are much lower than in the rest of the State of Espirito Santo. Our data do not allow definitively establishing the influence of the lifestyle on migraine prevalence in that population but they seem to corroborate previous studies showing no significant differences on migraine prevalence between urban and rural areas<sup>17</sup>.

Our data confirm the high impact of migraine<sup>18</sup>. More than half of the subjects with migraine had the work affected or impeded at least once a month. More than one third of the migraineurs sought an Emergency Room in the last year due to headache. These data allow to state that specific health strategies are necessary to reduce the impact of this disease not only in urban but also in Brazilian rural areas. Most of the headache sufferers declared to use analgesic drugs and most of them were using these drugs according to medical prescription. In another study in an urban area we have showed that only 9.2% of the headache sufferers were under medical treatment for headache<sup>8</sup>. The Family Medicine Program in that area has probably allowed an easier access of this population to health professionals than in larger cities. However the actual benefit of this medical assistance on the impact of migraine and headache needs to be evaluated. Like in other Brazilian regions the most used analgesic was dipyrone<sup>8</sup>. Another similarity with other Brazilian studies was that no subjects used triptans for migraine relief. The high cost of these drugs, the doctor's lack of knowledge about those substances, and the low availability of these drugs in remote areas of Brazil are probably the reasons for that. Another important observation was that none of the headache sufferers were under prophylactic therapy. This is concerning since 42.8% of the subjects declared to use more than five analgesic pills a week and 23.8% of them reported to take more than ten analgesic tablets a week. The overuse of analgesics for headache has been previously documented by other Brazilian studies<sup>8,19,20</sup>, and it is well known that it can be associated with the

risk of transformation of episodic migraine to chronic migraine<sup>20,21</sup>. Since the time spent on headache education in medical schools is very short specific headache education programs to Family Medicine Program doctors would be a possible way to significantly reduce the impact of migraine in rural areas by qualifying them to prescribe abortive and prophylactic therapies. This contrasts with some observations in developed countries in which the major challenge in headache assistance is not related with medical education but instead with doctor-patient relationships<sup>22</sup>.

In conclusion, our data seem to corroborate that prevalence and impact of migraine are not lower in rural areas. Specific headache training programs to Family Health Program teams would certainly contribute to reduce the impact of migraine and other headaches in small cities and in rural communities.

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