

ARTICLE

Is the population properly informed about sleep disorders?

A população está devidamente informada sobre os distúrbios do sono?

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ABSTRACT

Objective: To measure the prior knowledge about sleep disorders and patient's ability to report their problems adequately to health professionals. **Methods:** We analyzed 208 patient's records and extracted the following information: date of birth, gender, medical diagnostic hypotheses, patient's primary complaint in their words, considering the most appropriated semantic approximation to the perceptual phenomena, either by their own or by reasoning information from the partner. We compared the agreement (Kappa's test) between patient's complaint and medical diagnosis. The 95% confidence interval was used to analyze proportions. **Results:** We found strong correlations for bruxism; moderate for snoring, insomnia, nightmares, somniloquy, and restless legs syndrome; fair for excessive movement during sleep (EMDS) and obstructive sleep apnea syndrome (OSA). **Conclusions:** The observed correlations were heterogeneous, but important diseases such as OSA and EMDS in children showed fair and weak correlations. This suggests an unsatisfactory knowledge level among the population about these disorders, despite their high prevalence and impact on patient's overall health.

Key words: sleep disorders, sleep apnea, obstructive, epidemiology, public health.

RESUMO

Objetivo: Avaliar o conhecimento da população investigada sobre os distúrbios do sono e sua capacidade de reportá-los adequadamente aos profissionais de saúde. **Métodos:** Foram analisados 208 prontuários de pacientes, dos quais foram extraídos os seguintes dados: data de nascimento, sexo, hipótese diagnóstica médica e queixa principal do paciente. Foram comparadas as queixas e as hipóteses diagnósticas, considerando-se o intervalo de confiança de 95% para as proporções entre estas variáveis, determinando-se sua concordância por meio do teste Kappa. **Resultados:** Foram encontradas concordâncias acentuadas em relação ao bruxismo; moderadas para ronco, insônia, pesadelos, sonilóquio e síndrome das pernas inquietas; concordância regular para movimentação excessiva durante o sono (EMDS) e síndrome da apneia obstrutiva do sono (SAOS). **Conclusões:** As concordâncias observadas foram heterogêneas, mas doenças importantes, como SAOS e EMDS, apresentaram correlações regulares e ausentes na amostra infantil, sugerindo insatisfatório nível de conhecimento da população sobre estes distúrbios, apesar da alta prevalência e do impacto sobre a saúde do paciente.

Palavras-Chave: distúrbios do sono, síndrome da apneia obstrutiva do sono, epidemiologia, saúde pública.

Epidemiological studies are unanimous regarding the high prevalence of sleep disorders, although there is a variation in the reported statistics^{1,2}. This high prevalence and multiple comorbidities make sleep disorders a significant health issue for both adults and children. Sleep-related diseases are associated with sleep breathing disorders; behavioral, cardiovascular, dental, and learning disabilities; growth deficiency; craniofacial underdevelopment; and excessive daytime sleepiness, which is responsible for the high rates of traffic accidents^{3,4}.

Despite this epidemiological situation and the many consequences of these disturbances, the general public awareness of sleep disorders is limited. Effective public awareness and education programs should consider the specific characteristics of their target population^{5,6}.

The word 'complaint' refers to the symptoms reported by patients. From this perspective, we can consider that a patient who can recognize symptoms of possible diseases is more likely to seek early specialist support⁷.

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Since the disease is conceptually distinct under medical and layperson views, and all health professionals are first of all humans placed in a family and social organization, their specific formation allows them to have a peculiar view on human's health⁸. Patients did not come to the specialist with a disease, but reported some perturbation, discomfort, or distress, which is important enough to motivate them to look for help. Disease is something that takes place in the affected body, and illness is what the person expresses⁹.

Health education actions aimed at increasing the awareness of sleep disorders among professionals and among the general population are essential for public policy, for they minimize and optimize investments¹⁰.

Such policies provide the population with a knowledge basis that aligns them more closely with health professionals in the perception of possible diseases and their treatments. Thus, health parameters should be disclosed that allow patients at identifying symptoms and seeking specialized treatment.

We designed this study to improve the quality of care for patients of the neurology and sleep medicine outpatient ambulatory clinics of the Federal University of São Paulo (UNIFESP) Department of Neurology. The study aimed at measuring the correlations between patient's complaints and medical diagnostic hypotheses made after anamnesis and physical examination. It would allow us to measure the patients' degree of prior knowledge and their capacity at reporting their knowledge about their own sleep disorders.

METHOD

The study was conducted in São Paulo, on the premises of the Hospital São Paulo, in the neurology and sleep medicine sections of the Department of Neurology at UNIFESP.

Sample

The calculated sample size included 200 individuals for a 5% sampling error and confidence interval (CI) of 95%. This sample size was determined by the monthly average number of patients seen in this department (the neurology and sleep medicine outpatient center), which corresponds to 200 patients, both adults and children.

Survey data, collected in 2006, were drawn from the medical records of patients in the neurosleep outpatient center. A total of 208 patient charts was selected randomly (by drawing) from those of all patients who visited the center between 2002 and 2005, and their data were used for this study.

This study was approved by the Ethics Committee of the UNIFESP, under protocol number 0850/05.

Data collection

The selected charts were reviewed to obtain the following information: gender, date of birth (age), complaint that

prompted seeking medical care, and medical diagnostic hypotheses.

We used the information the patient provided during the consultation to define the main complaints. For children, most information was obtained through an adult companion (i.e., mother, aunt, father)¹¹.

Medical diagnoses were based on thorough data anamnesis, direct or indirect, and clinical examination. In the Department of Neurology Neurosonology Sleep Center, which works with academic rigor, and in other UNIFESP clinics, diagnostic hypotheses are declared after anamnesis and physical examination, i.e., without information from subsidiary tests.

Taking into account the most frequent complaints and diagnostic hypotheses¹¹, we nominally grouped them as follows: snoring syndrome, insomnia, obstructive sleep apnea syndrome (OSA), nightmares, bruxism, somniloquy, excessive movement during sleep (EMDS), and restless legs syndrome (RLS). We have decided to compute EMDS separately, even though it is not a formal diagnosis, aiming at finding out if patients recognize that some motor behaviors during sleep are not expected, and also to look at this syndrome that would be a formal medical synthesis before auxiliary approach.

Statistical analysis

Data were analyzed using descriptive statistics. We calculated the proportions of the various complaints and diagnostic hypotheses recorded and compared them using the 95% CI. We used Kappa's test to verify the agreement between the complaint and diagnosis for all diseases investigated. A $p < 0.05$ was considered significant.

RESULTS

Among the 208 patients whose medical records were examined, 59.6% were male. Patients younger than 16 years of age accounted for 44.23% of the sample, and 65.59% of these were boys.

Comparison between complaint and diagnostic hypotheses

Snoring syndrome

Of the total sample, the proportion of patients who complained of snoring was significantly lower than the number of diagnostic hypotheses made by physicians ($p < 0.05$, 95%CI 0.39–0.49 and from 0.51–0.64), and the correlation between the complaint and diagnosis was moderate ($k=0.49$). Differences between genders were not significant, and the correlation between complaint and diagnosis was moderate (women $k=0.46$, men $k=0.48$). Among pediatric patients, no significant differences were found, and the degree of correlation was fair ($k=0.38$), as seen in Tables 1 and 2 and Figs 1 and 2.

Insomnia

Among the overall sample, we did not observe significant differences between the proportion of insomnia complaints and diagnostic hypotheses ($p>0.05$, 95%CI 0.39–0.56 and 0.51–0.64), and the correlation was moderate ($k=0.59$). The correlation was strong among men ($k=0.63$) and moderate

among women ($k=0.53$). The correlation was weak among children ($k=0.17$) and strong among adults ($k=0.60$). We did not obtain significant differences between the proportion of complaints and diagnostic hypotheses for any of the studied subgroups (gender and age), as seen in Tables 1 and 2 and Figs 1 and 2.

Table 1. Complaint and medical diagnostic hypotheses.

Disorder	Gender				Age					
	Women (84)		Men (124)		Children (92)		Adults (116)		Total (208)	
	Complaint	Diagnosis	Complaint	Diagnosis	Complaint	Diagnosis	Complaint	Diagnosis	Complaint	Diagnosis
Snoring syndrome	34.5	46.4%	47.6%	64.5%	47.8%	66.3%	37.9%	50.0%	42.3%	57.2%
	24.3–44.7	0.357–0.571	0.388–0.564	0.561–0.729	0.376–0.580	0.566–0.760	0.291–0.467	0.409–0.591	0.356–0.490	0.505–0.639
	Δ 11.9% $p>0.05$		Δ 16.9% $p>0.05$		Δ 18.5% $p>0.05$		Δ 12.1% $p>0.05$		Δ 14.9% $p>0.05$	
Insomnia	26.2%	25.0%	21.0%	16.1%	8.7%	2.2%	34.5%	33.6%	23.1%	19.7%
	0.168–0.356	0.157–0.343	0.138–0.282	0.096–0.226	0.029–0.145	-0.008–0.052	0.258–0.432	0.250–0.423	0.174–0.288	0.143–0.251
	Δ 1.6% $p>0.05$		Δ 4.9% $p>0.05$		Δ 6.5% $p>0.05$		Δ 0.9% $p>0.05$		Δ 3.4% $p>0.05$	
OSA	9.5%	28.6%	23.4%	54.8%	20.7%	46.7%	15.5%	42.2%	17.8%	44.2%
	0.032–0.158	0.189–0.383	0.159–0.308	0.460–0.636	0.124–0.290	0.365–0.569	0.089–0.221	0.332–0.512	0.126–0.230	0.374–0.509
	Δ 19.1% $p<0.05$		Δ 31.4% $p<0.05$		Δ 26.0% $p<0.05$		Δ 26.7% $p<0.05$		Δ 26.4% $p<0.05$	
Nightmare	9.5%	6.0%	11.3%	8.9%	20.7%	13.0%	2.6%	3.4%	10.6%	7.7%
	0.032–0.158	0.009–0.112	0.058–0.169	0.039–0.139	0.124–0.290	0.061–0.199	-0.003–0.055	0.001–0.067	0.064–0.148	0.041–0.113
	Δ 3.5% $p>0.05$		Δ 2.4% $p>0.05$		Δ 7.7% $p>0.05$		Δ 0.8% $p>0.05$		Δ 2.9% $p>0.05$	
Bruxism	15.5%	15.5%	8.9%	12.1%	20.7%	21.7%	4.3%	6.9%	11.5%	13.5%
	0.078–0.232	0.078–0.232	0.039–0.140	0.063–0.178	0.124–0.290	0.133–0.301	0.006–0.080	0.023–0.115	0.072–0.158	0.089–0.182
	Δ 0% $p>0.05$		Δ 3.2% $p>0.05$		Δ 1.0% $p>0.05$		Δ 2.6% $p>0.05$		Δ 2.0% $p>0.05$	
Somniloquy	16.7%	11.9%	24.2%	14.5%	40.2%	26.1%	6.0%	3.4%	21.2%	13.5%
	0.087–0.247	0.050–0.188	0.167–0.317	0.083–0.207	0.302–0.502	0.171–0.351	0.017–0.103	0.001–0.067	0.156–0.268	0.089–0.181
	Δ 4.8% $p>0.05$		Δ 9.7% $p>0.05$		Δ 14.1% $p>0.05$		Δ 2.6% $p>0.05$		Δ 7.7% $p>0.05$	
EMDS	26.2%	4.8%	31.5%	7.3%	56.5%	10.9%	7.8%	2.6%	29.3%	6.3%
	0.168–0.356	0.002–0.094	0.233–0.397	0.027–0.119	0.464–0.666	0.045–0.173	0.029–0.127	-0.003–0.055	0.231–0.355	0.030–0.096
	Δ 21.4% $p<0.05$		Δ 24.2% $p<0.05$		Δ 45.6% $p<0.05$		Δ 5.2% $p>0.05$		Δ 23.0% $p<0.05$	
RLS	9.5%	17.9%	4.8%	7.3%	1.1%	4.3%	11.2%	17.2%	6.7%	11.5%
	0.032–0.158	0.097–0.261	0.010–0.086	0.027–0.119	-0.010–0.032	0.0016–0.084	0.055–0.169	0.103–0.241	0.033–0.101	0.072–0.158
	Δ 8.4% $p>0.05$		Δ 2.5% $p>0.05$		Δ 3.2% $p>0.05$		Δ 6.0% $p>0.05$		Δ 4.8% $p>0.05$	

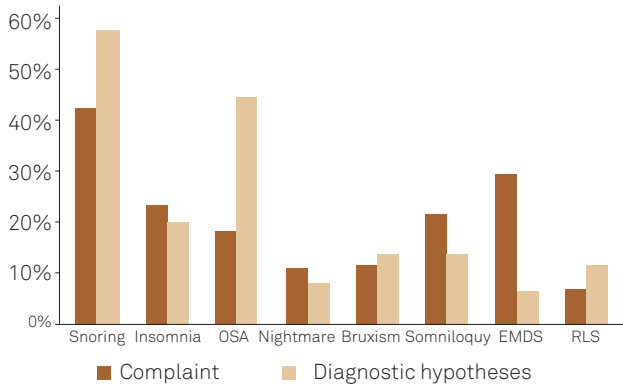
OSA: obstructive sleep apnea syndrome; EMDS: excessive movement during sleep; RLS: restless legs syndrome.

Table 2. Kappa's test.

Disorder	Kappa's test (Interpretation)				
	Women	Men	Children	Adults	Total
Snoring syndrome	0.46 (moderate)	0.47 (moderate)	0.38 (regular)	0.55 (moderate)	0.49 (moderate)
Insomnia	0.53 (moderate)	0.63 (strong)	0.17 (weak)	0.60 (strong)	0.59 (moderate)
OSA	0.27 (regular)	0.34 (regular)	0.32 (regular)	0.36 (regular)	0.35 (regular)
Nightmare	0.42 (moderate)	0.60 (strong)	0.50 (moderate)	0.56 (moderate)	0.54 (moderate)
Bruxism	0.73 (strong)	0.66 (strong)	0.71 (strong)	0.59 (moderate)	0.69 (strong)
Somniloquy	0.71 (strong)	0.49 (moderate)	0.45 (moderate)	0.72 (strong)	0.57 (moderate)
EMDS	0.25 (regular)	0.29 (regular)	0.17 (weak)	0.48 (moderada)	0.28 (regular)
RLS	0.65 (moderate)	0.36 (regular)	-0.02 (absent)	0.61 (strong)	0.54 (moderate)

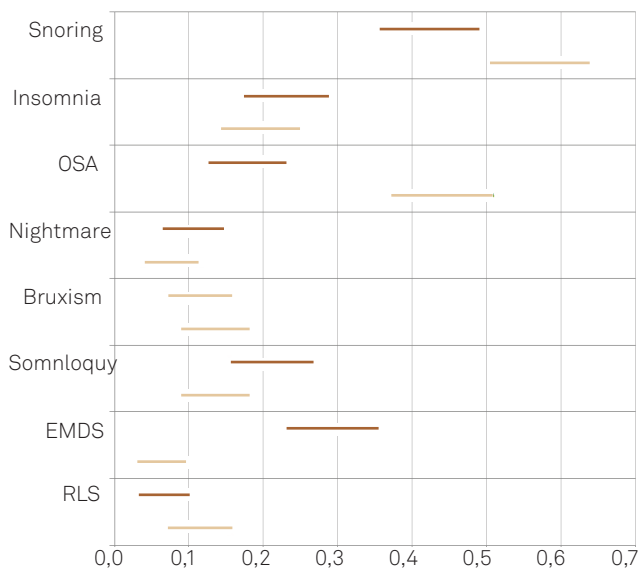
OSA: obstructive sleep apnea syndrome; EMDS: excessive movement during sleep; RLS: restless legs syndrome.

Complaint and Medical Diagnostic hypotheses



OSA: obstructive sleep apnea syndrome; EMDS: excessive movement during sleep; RLS: restless legs syndrome.

Fig 1. Proportions between the complaint and medical diagnostic hypotheses.



OSA: obstructive sleep apnea syndrome; EMDS: excessive movement during sleep; RLS: restless legs syndrome.

Fig 2. Confidence intervals: comparison between complaint and medical diagnostic hypotheses.

Obstructive sleep apnea syndrome

Within the whole sample, we found significant differences between the proportions of OSA complaints and diagnoses ($p < 0.05$, 95%CI 0.13–0.23 and 0.37–0.51), which were reproduced among males, children, and adults (Table 1 and Fig 1). The correlation between OSA complaints and diagnoses was fair ($k = 0.35$) within the total sample and in all subgroups (women $k = 0.27$, men $k = 0.34$; children $k = 0.32$, and adults $k = 0.36$), as seen in Table 2 and Fig 2.

Nightmares

In the overall sample and for subgroups (gender and age), we found no significant differences between the proportion

of nightmare complaints and diagnostic hypotheses ($p > 0.05$, 95%CI 0.06–0.15 and 0.04–0.11), as seen in Table 1 and Fig 1. For this variable, moderate correlations were observed for the total sample ($k = 0.54$) and for gender subgroups (women $k = 0.42$, children $k = 0.50$, and adults $k = 0.56$). The exception was the male group, in which the correlation was significant ($k = 0.60$), as in Table 2 and Fig 2.

Bruxism

In the overall sample and for subgroups (gender and age), we found no significant differences between the proportion of bruxism complaints and diagnostic hypotheses ($p > 0.05$, 95%CI 0.07–0.16 and 0.09–0.18), as seen in Table 1 and Fig 1. Significant correlations for the general sample ($k = 0.69$), for both genders (women $k = 0.73$, men $k = 0.66$), and children ($k = 0.71$) were obtained, however the correlation was moderate among adults ($k = 0.59$), as in Table 2 and Fig 2.

Somniloquy

In the overall sample and for subgroups (gender and age), we found no significant differences between the proportion of complaints and diagnostic hypotheses ($p > 0.05$, 95%CI 0.16–0.27 and 0.09–0.18), as in Table 1 and Fig 1. For this disorder, we obtained moderate correlations for the total sample ($k = 0.57$), men ($k = 0.49$), and children ($k = 0.45$). Among women ($k = 0.71$) and adults ($k = 0.71$), the correlation was significant (Table 2 and Fig 2).

Excessive movement during sleep

In the overall sample and for subgroups (gender and age), we obtained significant differences between the proportion of EMDS complaints and diagnostic hypotheses ($p < 0.05$, 95%CI 0.23–0.36 and 0.03–0.10), as seen in Table 1. The exception was the adult subgroup (Table 1 and Fig 1). Fair correlations for the overall sample ($k = 0.28$) and for both genders (women $k = 0.25$; men $k = 0.29$) were noticed. The correlation was weak among children ($k = 0.17$) and moderate among adults ($k = 0.48$), as in Table 2 and Fig 2.

Restless legs syndrome

In the overall sample and for subgroups (gender and age), we found no significant differences between the proportion of RLS complaints and diagnostic hypotheses ($p > 0.05$, 95%CI 0.064–0.148 and 0.041–0.113), as in Table 1 and Fig 1. The correlation was moderate ($k = 0.54$) for the overall sample, but it was significant among women ($k = 0.65$), fair among men ($k = 0.36$), absent among children ($k = -0.02$), and significant among adults ($k = 0.61$), see Table 2 and Fig 2.

DISCUSSION

The main findings of this study were the disagreements between the complaints and diagnostic hypotheses related to OSA and EMDS, and the marked correlation for bruxism.

Our data were interpreted under the concept that symptoms are recognized on a subjective perception, and the essential task expected from the health professional resides mostly in decoding the patient's speech, bidding these symptoms to biologic standards and letting to the identification of a nosological entity¹². The disease constitute itself by a deviant pattern related to a biophysiological process, or a non-accepted behavior in historical, cultural, and sociotechnological contexts, sometimes ignored inside the dualistic Cartesian conception^{13,14}.

Being recognized as sick involves not only individual self-perception, but also the eye from those around the person, then to become diseased can be considered a social process, meaning that gender and economic class also play a role^{15,16}.

Regarding these concepts, our data showed that a prevalent and threatening disease like OSA, although frequently discussed in many medias, is not culturally incorporated, and patients did not recognize its health impact as regularly as would be needed.

Obstructive sleep apnea syndrome

In the Neurosleep outpatient center, patient complaints and an OSA diagnosis by the physician showed fair correlations for the whole sample and gender and age subgroups. We could verify that the number of complaints was lower than that of diagnoses. This suggests that OSA, a widespread disease in large cities like São Paulo, is not properly reported to doctors by patients^{17,18}. Hypothetically, we can consider that although OSA presents obvious clinical manifestations, such as snoring, upper airway obstruction, daytime sleepiness, sweating, and excessive movement during sleep, its recognition and differential diagnosis also depends on subjective perceptions and information reported by family members who share the patient's sleeping environment^{19,20}.

In childhood, OSA symptoms are even rarer because the clinical picture may differ from the one observed in adults. Pediatric patients with OSA may have behavioral problems, stunted growth, learning disabilities, genetic syndromes, and craniofacial underdevelopment, features mistakenly undervalued in the diagnosis of sleep breathing disorders²¹⁻²³.

Bruxism

This disorder had the smallest difference between the percentages of patient complaints and later diagnostic hypotheses, as reflected by a marked concordance in Kappa's test. This fact may be due to the fact that the disorder's symptoms, such as gnashing teeth and headache, were easily recognized by the patient and accurately communicated to the physician^{24,25}.

Snoring

This disorder was frequently reported to the doctor; however, when considering the overall sample and gender

and age subgroups, we found that snoring was preliminarily diagnosed more often than it was reported by patients. Although the difference was not statistically significant, this reflected a moderate correlation between physician's diagnosis and patient's complaint. The correlation (Kappa's test) between patient complaints and medical diagnostic hypothesis was higher among adults (moderate) than in children (fair), but it is worth noting that children's clinical histories were reported by adults.

It is possible that adults reported this complaint more accurately because snored had a major psychological impact, due to the disorder's negative social image²⁶. In children, it was difficult to distinguish noisy breathing from snoring or to evaluate them separately. Since snoring increases progressively in intensity and frequency, family members can grow used to it²¹. Additionally, children do not always share a room with an adult who is aware of this symptom. The report from a roommate is important in recognizing this disease because the impact of snoring is primarily "in the ears that hear it"²⁷.

Insomnia

Insomnia has a great impact on an individual's quality of life and can lead to physical, behavioral, and cognitive problems²⁸. In our study, for the whole sample and all subgroups, the number of insomnia complaints was higher than that of diagnostic hypotheses of insomnia. We observed a marked correlation among adults, mainly within the male subgroup, which suggests that men are more strongly affected by sleep deprivation that is an important reason to seek treatment²⁹.

For the entire sample and the female subgroup, the correlation between the complaint and diagnosis was moderate. In our study, women did not seem to adequately report symptoms of insomnia, although the disease was prevalent among this subgroup, as expected³⁰. It is possible that women were less concerned about their insomnia. Especially in large cities, insomnia is overlooked or trivialized in its nosological dimension. It is perceived as a symptom of psychological disorder caused by stress and not as a disease in itself^{26,28}.

Among pediatric patients, a weak correlation was obtained (Kappa's test), and the number of insomnia complaints was higher than that of diagnostic hypotheses formulated by doctors. The fact that parents reported that children had difficulty falling or staying asleep did not mean that the child was an insomniac. Such behavior may have resulted from inadequate sleep hygiene, originating from the parents' difficulty with setting limits, rather than his/her neurophysiological problem¹⁷. A multidisciplinary team that included a psychologist provided a final diagnosis of behavioral disorders that involved the family dynamic and, fundamentally, the relationship between parents and children. The doctor at the neurosleep clinic confirmed the multidisciplinary team's etiological diagnosis on the medical record and verified that the child's sleep difficulties were not simply due to insomnia.

Nightmares

Nightmares showed a moderate correlation (for complaint *versus* diagnosis) for the total sample, irrespective of gender and age. However, the correlation was strong in the male subgroup, suggesting that this disorder particularly bothered men. Men may perceive and understand this experience in a negative way, which may encourage them to provide a detailed report of their symptoms to the doctor. It is a parasomnia with clear manifestations that are easily described by the patient. Probably, we did not find strong correlations for the other subgroups due to cultural conceptions. Nightmares can sometimes be considered dreams that trigger high levels of anxiety; unpleasant content alone may not be enough to classify a dream as nightmare. It is still possible that women were not especially concerned about their unpleasant dreams, so they did not feel the need to discuss them with doctor.

Among children, there were higher numbers of complaints than diagnostic hypotheses, probably because, at this age, nightmares are easily confused with somniloquy and night terrors. Neither the child nor the adult who reported the information to the doctor was able to clearly differentiate one manifestation from another, and these parasomnias may have been concurrent³¹.

Somniloquy

We observed a strong correlation between somniloquy complaints and diagnoses for women, and a moderate correlation for men and children. As previously mentioned, for children, this result probably arose from the fact that this parasomnia was confused with nightmares and night terrors. Somniloquy can be viewed culturally as an individual's inability to contain his/her thoughts. It was possible that women coped better with this 'inability to control' and felt more comfortable reporting this behavior than men. Another possibility was that men reported this phenomenon without any concerns, and because the doctor found that it was a parasomnia without greater clinic consequences, this hypothesis may not have been registered in their records. The opposite would occur for women, who tended to be more concerned about the symptoms³². Therefore, women would prompt the doctor to record the event and advise them regarding the disorder. It was also possible that women reported somniloquy more effectively by including more of the information transmitted to them by their sleep partners.

Restless legs syndrome

In the present survey, RLS was the disorder that had the fewest complaints related to medical diagnostic hypotheses. This suggests that the patients at the outpatient service did not establish a relationship between their symptoms and this disorder. RLS complaints and diagnoses showed correlations that were strong for women, fair for men, and absent for

children. Women were better able to provide typical symptoms of the disease and understand the symptoms as something specific, even if they were not aware of the name RLS. Men tended not to spontaneously report symptoms typical of RLS; generally, a medical intervention was necessary to obtain the information that led to diagnosis. This may be because women tended to have a more pessimistic perception of themselves in relation to their overall health, which makes them more likely to express their complaints^{33,34}. Another aspect to consider is the fact that women seek more information about health and wellness and, therefore, may have had more knowledge about the subject³⁵.

Despite the high prevalence of RLS in the population (6.3%, including children), it remains almost unknown to the general public and even health professionals³⁶. It is frequently associated with behavioral disorders, especially among pediatric patients that were diagnosed as hyperactive due to their constant activity in trying to minimize the discomfort of the disease. A child's need for leg massages during the night can be interpreted as a consequence of fatigue or muscle problems arising from the daytime activities. It should also be stressed that the majority of pediatric patients in the Neurosono Sleep Center with diagnostic hypotheses of RLS have parents suffering from this disease as well. This suggests that parents do not consider the possibility of RLS in children³⁷.

Excessive movement during sleep

In the overall sample, EMDS complaints were more common than its diagnostic hypotheses. This resulted in a fair correlation between patient complaints and diagnostic hypothesis. Among pediatric patients, the difference between complaints and diagnostic hypotheses was even more significant, as reflected by a weak correlation. This result was expected according to the International Classification of Sleep Disorders, sleep-related movement disorders encompass a number of diseases that may have been specified during the anamnesis. What the patient reported as troubled sleep may have been the symptomatic manifestation of diseases, such as OSA, RLS, and nightmares¹⁷. One reason for this disagreement could be the absence in the International Classification Sleep Disorders (ICSD) of a specific word to refer such phenomena, which is important to be alluded in a real clinical set, allowing the physician to explore causes to explain that condition. In any case, such symptoms are indicative of poor sleep quality, which motivated people to seek specialized treatment.

In conclusion, comparing patient complaints and medical diagnoses in their records — after anamnesis and physical exam — we found strong concordance for bruxism, indicating the population's prior knowledge of this disorder.

The EMDS and OSA presented fair agreement, suggesting that the population's knowledge of these issues was

unsatisfactory, despite these diseases' high prevalence and impact on overall patient health.

The differences between the gender and age subgroups also indicated that the perception, communication and knowledge about sleep disorders were different for men, women, children, and adults.

We must also consider that the subjectivity of these records pertained not only to the perception, knowledge, and communication of the patients, but the physician was also considered. We do not rule out the possibility that in some cases of disagreement between the complaints and diagnostic hypothesis, the physician, as a recipient of the patients'

messages, may have generated a bias resulting from his/her own ability to evaluate and value certain diseases.

We believe that these data are useful for health education activities. They suggest specific interventions that should be directed to the needs of the patients of this study.

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