



Abstracts II International Mexican Congress of Sleep Medicine

Resúmenes II Congreso Internacional Mexicano de Medicina del Dormir

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Implementation of an animal model to analyze the effect of antiepileptic drugs on sleep disorders caused by generalized epileptic crisis⁺

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⁺Winning abstract in the
basic/translational research category.

Introduction: epilepsy is a neurological disorder characterized by recurrent attacks caused by the synchronization of the discharge of thousands of neurons. Nocturnal epilepsy has a significant impact on sleep, as well as on the quality of life of individuals who suffer from it. The use of experimental animal models has contributed significantly to the understanding of the pathological processes and pathophysiological mechanisms underlying epilepsy. Administration of pentylenetetrazole (PTZ) results in the development of generalized epileptic crises. These models have been useful for testing the efficacy of different substances with antiepileptic potential. **Objective:** to implement an experimental model of epilepsy to compare the efficacy of antiepileptic drugs, with the purpose of protecting against sleep disturbances caused by epileptic crises. **Material and methods:** the experiments were carried out in white Wistar rats, chronically implanted for control sleep recording and under the effect of epileptic crisis provoked by the administration of PTZ. Subsequently, one group of rats was administered valproate, and another gabapentin (GBP) prior to PTZ administration. **Results:** PTZ administration, in addition to seizures, produced long-lasting insomnia;

whereas pre-PTZ administration of both valproate and GBP reduced convulsive crises and improved sleep, making the action of GBP more effective.

Conclusions: the experimental animal model implemented allows testing the efficacy of antiepileptic drugs on sleep disturbances caused by epileptic crises, as well as comparing the efficacy of different drugs, which will facilitate the selection of the appropriate drug for patients.

Sleep disorders in bed partners of patients with obstructive sleep apnea⁺⁺

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⁺⁺Winning abstract in the category
of social-economic anthropological
impact research.

Introduction: sleep disorders (SD) in our population are currently a public health problem. In Mexico, the most prevalent SD are: insomnia (22.1%), obstructive sleep apnea syndrome (OSAS) (6-32%), daytime sleepiness (19.1%) and poor sleep quality (45%). These disorders are known to directly affect the mental health of patients and may also affect that of the bed partner. Studies focused on sleep habits in older adults have demonstrated this phenomenon; however, this relationship is unknown in specific SD such as OSAS. **Objective:** to describe the prevalence of sleep disorders of bed partners of patients with obstructive sleep apnea syndrome. **Material and methods:** descriptive, observational, cross-sectional study. Twenty-one dyads of family members and patients diagnosed with OSAS were interviewed. Pittsburgh sleep quality index (PSQI), Epworth sleepiness scale (ESE) and insomnia severity index (ISI) were applied. **Results:** twenty-one

bed partners of patients with OSAS participated. The mean age was 54 ± 13.2 years; 15 (71.4%) were women. According to the ISI, nine (42.9%) had insomnia; according to the PSQI, 18 (85.7%) had some sleep problem; and with the ESE, six (28.5%) had moderate or excessive sleepiness. **Conclusions:** bed partners of patients with obstructive sleep apnea have more sleep disturbances than the general population. The importance of sleep assessment as a dyadic aspect and not as an individual component is noted.

Sleep quality and prevalence of probable sleep bruxism (PSB) in schoolchildren in León, Guanajuato, during 2023⁺⁺⁺

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⁺⁺⁺Winning abstract in the clinical research category.

Introduction: the sleep quality (SQ) is a determinant of daytime functioning. Among the functions of sleep are the maturation of the central nervous system and human development; one of the sleep disorders (SD) that affects SQ and is related to oral health is sleep bruxism (SB). **Objective:** to identify the association between SQ and probable sleep bruxism (PSB) in schoolchildren of the «Leona Vicario» elementary school in León, Guanajuato. **Material and methods:** cross-sectional, analytical study, in which a sample of 236 children (mean age 8.52 ± 1.82 years) was analyzed, 50.4% female. A Spanish-translated version of the children's sleep habits questionnaire (CSHQ) was applied. Tooth wear, indentation and furrowed tongue were evaluated with the «TWES 2.0» system. Mean and standard deviation were calculated for quantitative variables; and frequencies and percentages for qualitative variables; bivariate analysis was performed with χ^2 . The statistical program IBM SPSS Statistics 24.0, 2016 was used. Informed consent was obtained from the responsible persons for each minor. **Results:** a prevalence of 18.2% of

PSB was found, with a higher prevalence for the female sex of 9.3%. A significant relationship was found between PSB and the subscales of parasomnias ($p \leq 0.00$) and sleep fragmentation ($p \leq 0.02$); although there was no significant relationship with the subscales of sleep efficiency, total sleep time and obstructive sleep apnea. **Conclusions:** in the studied sample the prevalence of PSB was high and was related to indicators of other sleep disorders. Considering the negative impact of SD on development, early identification of PSB is very important.

Self-organizing maps to assess the effect of antiepileptic drugs on vigilance states in an experimental animal model of epilepsy

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Introduction: experimental animal models have been used to test the protective effect of antiepileptic drugs on wakefulness and sleep. One model involves the use of pentylenetetrazole (PTZ) as a generalized seizure-inducing agent. Generally, the efficacy of antiepileptic drugs is evaluated by inferential statistics, so the effect in each animal is not characterized separately. We believe that knowing the individual effect of drugs would contribute to assessing their efficacy. **Objective:** to use self-organizing maps (SOM) to evaluate the effect of diverse antiepileptic drugs on vigilance states in a PTZ model of epilepsy. **Material and methods:** data from previously published studies whose methodology consisted of the induction of epilepsy by PTZ and the use of antiepileptic drugs in adult male Wistar rats were evaluated. Valproate was applied to 10 rats, gabapentin to 24, phenobarbital to 10 and saline solution to eight. Under these conditions, three polygraphic recordings were made on three consecutive days to evaluate the surveillance states. For the SOM analysis, a multidimensional profile composed of waking, sleep-slow and sleep-REM values was determined in each rat for each day of recording. **Results:** four different groups of rats were

identified, considering the effect exerted by antiepileptic drugs on the amount of wakefulness and sleep. **Conclusions:** SOM analysis allows to identify individual differences in the effect of antiepileptic drugs on vigilance states. These findings, at the clinical level, could contribute to explain the reaction of patients under treatment with different drugs.

Network science to assess the relationship between sleep quality, anxiety and depression levels of people during the COVID-19 pandemic

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Introduction: the COVID-19 pandemic had negative effects on levels of anxiety, depression and sleep quality. Although most studies report intensity levels ranging from mild to moderate, there are individual variations. Therefore, it is important to explore new methods of analysis that allow us to know the characteristics of the scores of these reports and to identify aspects that may be of clinical or epidemiological relevance. **Objective:** to evaluate the relationship between levels of sleep quality intensity, anxiety and depression using network science. **Material and methods:** a sleep quality questionnaire and the Beck anxiety and depression inventories were administered. The informed consent and questionnaires were placed on a digital platform whose link remained available during February-April 2021. The data were modeled with a bipartite network, one set of nodes was formed with the participants; the other set was formed with the responses of the three questionnaires, for which four categories were formed based on the level of intensity. Subsequently, a weighted projection was performed on the bipartite network over the set of questionnaires, and a modularity algorithm was applied to the resulting network. **Results:** three clusters were identified, each including the three variables that coincided with the level of intensity. **Conclusions:** network analysis

corroborates the relationship between the severity levels of sleep quality, anxiety and depression. The better the quality of sleep, the lower the reported levels of anxiety and depression.

Cost-effectiveness economic evaluation of two treatments for obstructive sleep apnea-hypopnea syndrome from the perspective of the patient attended at the Sleep Disorders Clinic of the UNAM

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Introduction: obstructive sleep apnea-hypopnea syndrome (OSAHS) is characterized by intermittent and repeated collapse of the pharyngeal airway during sleep, which may be complete (apnea) or partial (hypopnea). The apnea-hypopnea index (AHI) is the frequency of apneas and hypopneas per hour during sleep that, in a healthy person, are less than five. The medical treatment for OSAHS is the administration of continuous positive airway pressure (CPAP) during sleep using a medical device of the same name. Lifestyle management is often recommended as a complement. It has been observed that treatment with CPAP combined with cognitive-behavioral therapy (CBT) can improve therapeutic outcomes. **Objective:** to economically evaluate CPAP therapy versus CPAP + CBT in the treatment of moderate to severe OSAHS in adult patients to determine if the implementation of combined therapy is cost-effective. **Material and methods:** a Markov model was performed that considered the stages of uncontrolled OSAHS, controlled OSAHS, stroke, myocardial infarction, vehicular accident and death. The time horizon of the model was 10 years. Health resource consumption and costs were determined by crude costing, using clinical practice guidelines and information reported in the literature. The effectiveness of the therapies was evaluated in terms of the probability: decrease in AHI < 5; other probabilities of occurrence of other clinical events included in the model

were also included. The incremental cost-effectiveness ratio (ICER) was obtained. A multivariate and univariate sensitivity analysis was performed with a variation of $\pm 7\%$ to evaluate the robustness of the model; a Monte Carlo simulation was performed, considering a willingness to pay of a GDP in Mexico. **Results:** the average cost-effectiveness ratio per patient resulting from the Markov model was \$59,163.69 and \$45,308.56 for CPAP therapy and CPAP + CBT, respectively. The most cost-effective therapy was CPAP + CBT. The ICER was \$28,479.64, with the combined CPAP + CBT therapy being non-dominated, as it has an incremental effectiveness of twice that of CPAP monotherapy. Sensitivity analysis showed that the model is robust; the Monte Carlo simulation model showed that most iterations were below a cost equivalent to one GDP of Mexico. **Conclusions:** the implementation of combined treatment with CPAP + CBT is cost-effective versus CPAP monotherapy for moderate to severe OSAHS in adult patients, from the perspective of the patient treated at CTS-UNAM.

Level of anxiety and depression in chronic insomniac patients in the post-pandemic period at the UNAM Sleep Clinic

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Introduction: insomnia associated with mood and/or anxiety disorders occurs in up to 70% of cases and is the main cause of consultation; it mainly affects women and the working-age population. During the acute phase of the pandemic, it was reported to have intensified worldwide. **Objective:** to assess the level of anxiety and depression in insomniac patients attending for consultation in the pre- and post-pandemic stages of the COVID-19 pandemic. **Material and methods:** observational, retrospective, comparative study. Non-randomized purposive sampling. Patient data registry from 2017-2019, pre-pandemic group

(ADP); and 2022-2023, post-pandemic group (PDP). First-time patients with chronic insomnia and BAI (Beck anxiety inventory) and BDI (Beck depression index) tests were considered. The means of each scale were compared in univariate analyses with group, «sex», «anxiolytic and antidepressant medication use» as fixed factors and age as a covariate. Significance was considered with $p < 0.05$. **Results:** sample of 233 patients (160 ADP and 73 PDP), aged 56.3 ± 15.6 years; 132 (56.7%) female. Nine (5.6%) ADP and 14 (19.2%) PDP had indicated medication. In all comparisons, scale scores were higher in the ADP group compared to the PDP group, with BAI 18.6 ± 13 versus 14.9 ± 11.5 , $p = 0.045$ and BDI 17.1 ± 11.6 versus 11.6 ± 8.5 , $p < 0.001$. ADP versus PDP had low, 107 versus 55 (66.9% versus 75.3%); moderate (17.5% versus 15.1%) and severe (13.8% versus 9.6%) anxiety. ADP versus PDP had minimal or absent depression 48 versus 33 (30.0% versus 42.2%); mild (27.5% versus 31.5%), moderate (26.9% versus 17.8%) and severe (14.4% versus 5.5%). **Conclusions:** demographic data correspond to the population most affected by chronic insomnia, in the PDP a significant decrease in the intensity of anxiety and prevalence and intensity of depressive symptoms is observed; this effect should be contextualized to the end of mandatory confinement and the increased awareness of mental health during it.

Coherence analysis between brain and cardiac activity during sleep in children with Asperger syndrome

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Introduction: coherence is a method for quantifying the coupling between one or more biological signals in the frequency domain, so it has been used to investigate the relationship between brain and cardiac activity during sleep in children with Asperger syndrome, who have autonomic and cortical abnormalities, as well as comorbidity with sleep disorders. **Material and methods:** children aged six to 10

years diagnosed with Asperger syndrome (n = 11) and typically developing children (n = 11) were included. Polysomnographic recordings were made during two consecutive nights; the first night was for adaptation and the second night was considered for analysis. **Objective:** to determine whether there is coherence between parasympathetic cardiac activity and different brain frequency bands (delta, theta, alpha, beta and gamma) during REM and non-REM sleep in a group of children with Asperger syndrome and a group of typically developing children. **Results:** REM sleep latency, number of sleep cycles and time in bed were outliers in children with Asperger syndrome. On the other hand, typically developing children had higher coherence values between delta-RSA (respiratory sinus arrhythmia) during non-REM sleep compared to the group of children with Asperger syndrome. **Conclusions:** there is adequate parasympathetic functioning during non-REM sleep in typically developing children, reflected by a high coupling between the RSA and the delta band. Whereas, in children with Asperger syndrome, the communication between the cardiovascular center and the sleep generating circuits may be impaired, resulting in inefficient interaction between the brain and the heart during sleep, leading to poor coherence and outliers in some measures of sleep structure.

Sleep quality, associated respiratory disorders and the use of chronic noninvasive mechanical ventilation in children with neuromuscular diseases

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Introduction: neuromuscular diseases (NMD) affect 1 in 2,000 people. In children who suffer from them, sleep-disordered breathing (SDB) occurs in 40-70% of cases. Ventilatory compromise during sleep is a first step to chronic respiratory failure, so timely diagnosis and initiation of treatment is critical. **Objective:** to describe sleep disorders and their evolution with the use of non-invasive mechanical ventilation (NIMV) in patients with NMD

attended at the INER Sleep Medicine Unit during the period from January/15 to January/20. **Material and methods:** cross-sectional, clinical research, with review of records from which demographic, clinical and polysomnographic information was obtained. The polysomnographies were basal and ventilatory; performed on the Grass, Alice and Neurovirtual equipment in children diagnosed with NMD. **Results:** 78 patients with an average age of 12 years were included. The main diagnoses were: Duchenne muscular dystrophy (65.3%) and spinal muscular atrophy type II (8.97%). Polysomnography reports altered sleep architecture with prolonged latency to REM sleep, increased N1 and N3 and decreased REM sleep. A total of 71.8% presented OSA, central apnea and hypoxemia during sleep were also reported. Of 43 patients, only 19 acquired NIMV equipment, the most commonly used being the Binivel ST (88.38%); in 89.47% an IPAP: 12, EPAP: 6, PS: 6 and backup FR: 18 were used; and of these, 51.61% had an adequate adherence to their use. **Conclusions:** SDB are frequent in patients with NMD. NIMV is a costly therapy that is not accessible to all, and adequate adherence to its use is relevant in order to make its benefits evident.

Complications and postoperative follow-up of patients undergoing adenotonsillectomy and nasal surgery with obstructive sleep apnea syndrome at the National Institute of Respiratory Diseases

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Introduction: nasal obstruction is common in patients with obstructive sleep apnea syndrome (OSAS); it contributes to increased negative airway pressure due to elevated nasal resistance and reduced nitric oxide production. The goals of nasal treatment are to reduce nasal obstruction and facilitate adherence to positive airway pressure therapy. OSAS in children is associated with neurobehavioral deficits and cardiovascular morbidity, highlighting the need for timely diagnosis and treatment. In healthy children, older than two years, with adenotonsillar hypertrophy, the first-line treatment for OSAS is adenotonsillectomy. **Objective:** to report surgical complications, as well as follow-up in patients with OSAS

at the National Institute of Respiratory Diseases (INER for its acronym in Spanish).

Material and methods: a search was made in the clinical records of INER patients with a diagnosis of OSAS who underwent nasosinus surgery and adenotonsillectomy between March 2021 and May 2023. Data were analyzed according to their distribution as mean, median, standard deviation, interquartile range, percentage and proportions. **Results:** 288 nasal surgeries were performed, in which 30 (10.4%) patients had OSAS, 23 (76.6%) males and seven (23.3%) females; four (13.3%) with mild disease, eight (26.6%) with moderate disease and 17 (56.6%) with severe disease. Among the types of nasal surgery, seven patients underwent rhinoseptoplasty, and the rest underwent functional surgery. Four of all patients with OSAS had the following complications: one late postoperative bleeding, one septal abscess, two intraoperative septal mucosal tears, of which none had septal perforation or any other late complication. A total of 104 adenotonsillectomy procedures were performed; of which 91 (94.65%) interventions had OSAS as a surgical indication; of this group of patients, 72 (65.5%) were minors and 19 (34.5%) were adults; four (3.6%) patients presented late surgical bleeding as a complication. **Conclusion:** nasal surgery and adenotonsillectomy in patients with OSAS are procedures that contribute to improve the clinical conditions of these patients, and also present a low incidence of complications.

An exploratory study of circadian activity patterns in individuals with major depression, primary insomnia, and good sleepers

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Introduction: in people with depression and insomnia, actigraphy has revealed lower daytime activity, higher wakefulness after sleep onset (WASO) and higher sleep fragmentation index. In primary insomnia, overestimation of sleep latency

(SL), underestimation of total sleep time (TST) and phase delay in circadian activity have been found. Differences have also been found between subjective reporting and actigraphy reporting. Comparisons between the two groups are scarce, as are studies evaluating circadian activity patterns and not just sleep parameters.

Objective: to evaluate the characteristics of circadian patterns of activity and rest in individuals with primary insomnia (PI), major depression with insomnia (MDI) and good sleepers (GS). **Material and methods:** observational, analytical, cross-sectional study. Using non-probability convenience sampling, three groups were obtained: patients with major depressive disorder and insomnia (MDI, $n = 10$), primary insomnia (PI, $n = 11$), and good sleepers (GS, $n = 10$). Actigraphs were used to measure activity and rest patterns for seven days. **Results:** in relation to the sleep indicators, there were no significant differences between the groups in TST, WASO, sleep efficiency and SL. Whereas, with respect to activity patterns, the GS started activity significantly earlier (< 6 a.m.) and their activity was higher between 5:30-6:30 a.m. compared to the PI and MDI groups; in turn, the PI group showed more activity at this time than MDI. Regarding activity time at different intensities, the three groups were mainly sedentary and the average number of minutes in daily activity types was similar among them. However, they differed in the average minutes of light activity; again GS had more minutes in light intensity compared to IP and MDI, and the IP group more than MDI. **Conclusions:** our results suggest that activity patterns are different between MD, IP and MDI. GS individuals start activity earlier and have more activity, mainly in the morning; at the other extreme are individuals with MDI, who start later and have less activity during the day. This is in the absence of significant differences in sleep indicators.

Prevalence of residual sleepiness and quality of life in adults undergoing CPAP treatment

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Introduction: obstructive sleep apnea (OSA) is caused by pharyngeal collapse resulting in episodes of total (apnea) or partial (hypopnea) airflow obstruction during sleep. The standard treatment is continuous positive airway pressure (CPAP), even with treatment, drowsiness may persist, impairing quality of life. Drowsiness can be assessed with the Epworth scale and quality of life by SAQLI, specific scales. In Mexico, the prevalence of OSA in adults is 27.3%, increasing due to BMI, age and living in urban areas.

Objective: to describe the prevalence of residual sleepiness and quality of life in adults under treatment with CPAP at UMF No. 64. **Material and methods:** cross-sectional study in 207 subjects with OSA treated with CPAP for at least three months; after informed consent, they answered Epworth and SAQLI scales. Anthropometric, sociodemographic and last CPAP memory reading (programming, use and treatment efficacy) data were collected. Analysis: using SPSS version 25, descriptive statistics were performed according to the nature and behavior of the variables. Spearman's correlation coefficient was used to evaluate the relationship between sleepiness and quality of life. **Results:** 123 patients, 59.4% men; median age 58. 96% used it more than four hours/night, five (2.42%) with residual IAH > 10 E/h. The median Epworth score was six points; we found residual sleepiness in 47 patients (22.7%), quality of life was good (median 6.6 points). The Spearman correlation coefficient between Epworth and SAQLI was $r_s = -0.52$. **Conclusions:** patients at UMF No. 64 are under optimal treatment with CPAP; however, 22.7% of them had residual somnolence. When presenting higher Epworth score, quality of life is lower.

Comparison of polysomnographic variables in older adults with and without sarcopenia

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Introduction: the number of older adults is increasing in Mexico; the years added

to old age must be accompanied by good health. Muscle mass tends to decrease after the age of 40. Mexico shows one of the lowest values in muscle strength among older adults in the world; the prevalence of sarcopenia in the Mexican population is described at 32.8%. Sleep disturbances and malnutrition are two factors strongly associated with the presence of sarcopenia; a quarter of the adult population in Mexico is sleep deprived and is therefore at risk of developing sarcopenia. **Objective:** to compare polysomnographic variables in adults over 60 years of age with sleep disorder with and without sarcopenia. **Material and methods:** a prospective, prospective, prolective, comparative case-control study in which the sleep architecture of older adults with sleep disorder and sarcopenia was analyzed by polysomnography. Comparisons of patients with and without sarcopenia were performed with Student's t-test. **Results:** for sarcopenic, latencies were NREM 24.95 ± 18.72 , REM 191.58 ± 114.35 , NREM duration 295.76 ± 94.70 , REM 49.05 ± 30.42 , SWS 69.65 ± 32.41 , SWS presentation frequency 3.06 ± 1.98 and micro arousals 272.81 ± 139.60 . **Conclusions:** in sarcopenic older adults, REM latencies were prolonged, N1 and N2 stages are characterized by high frequency of micro awakenings and long-lasting apneas that increased hypoxemia during sleep.

Obstructive sleep apnea in patients with paroxysmal atrial fibrillation

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Introduction: obstructive sleep apnea (OSA) is highly prevalent among patients

with atrial fibrillation (AF). There are few studies analyzing heart rate variability (HRV) data in this association: OSA/paroxysmal AF (PAF). **Objective:** 1) to know the prevalence of OSA in a cohort of patients with PAF; 2) to establish the clinical characteristics and analysis of heart rate variability (HRV) assessed during sinus rhythm in patients with PAF and OSA, grouped by nutritional status; 3) to describe and compare the behavior of HRV in four time windows recorded during the night. **Material and methods:** patients diagnosed with PAF who attended the outpatient department of the Electrophysiology Department between 2019-2020 were studied. They underwent clinical apnea questionnaires, respiratory polygraphy (RP), 24-hour Holter and HRV analysis; transthoracic echocardiography and blood sampling to determine serum inflammatory markers. **Results:** of 57 patients studied, with mean age 62.5 ± 8.6 , 60% were found to have clinically significant OSA. When divided into groups according to nutritional status, statistically significant differences were observed in body mass index (BMI) and STOP-BANG scale ($p = 0.005$ and 0.03 , respectively). HRV analysis demonstrated that overweight/obese patients have greater LF activation ($p = 0.0143$) corresponding with sympathetic activity at the expense of the long postapnea window. **Conclusions:** there is a high incidence of OSA in PAF, with a positive STOP-BANG PR should be performed. In overweight or obese patients there is evidence of increased sympathetic activity during periods of apnea.

Validation of the pediatric sleep questionnaire in Mexican schoolchildren

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Introduction: sleep disorders (SD) in children and adolescents are highly prevalent: 18-25% of the child population. The main disturbances are respiratory, somnolence and sleep-related behavioral changes. Clinimetry is essential in the screening, diagnosis and follow-up of SD. The pediatric sleep questionnaire (PSQ) is the most widely used worldwide. In Mexico, the prevalence of SD in school children is unknown and we do not have a validated questionnaire. **Objective:** to validate the pediatric sleep questionnaire (PSQ) in Mexican schoolchildren. **Material and methods:** observational, prospective, descriptive and analytical study. The study included parents of children aged 6-12 years who attended the Sleep Disorders Clinic (CTS-UNAM) and two schools, one in the municipality of Iztapalapa and the other in the municipality of Magdalena Contreras in Mexico City. The Spanish version of the PSQ was administered, the reliability of the items was measured with Cronbach's alpha; the SPSS program was used in the statistical analysis with a statistical significance criterion of $p < 0.05$. **Results:** 280 parents participated, 263 met the inclusion criteria. The age of the children was 8.33 ± 1.96 years; 53.25% girls. The main sleep disturbances were: snoring, parasomnias, insufficient sleep time. Internal consistency was 0.906 for snoring, 0.743 for sleepiness, 0.810 for behavioral problems and 0.819 for the whole questionnaire. **Conclusion:** the Mexican version of the pediatric sleep questionnaire has good internal consistency and is reliable for use as a screening instrument in the clinic or for epidemiological purposes.

Heart rate variability during sleep in children with Asperger syndrome

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Introduction: Asperger syndrome (AS) is considered a neurodevelopmental disorder; its symptomatology has been associated with problems in the regulation of the autonomic nervous system (ANS) and with high comorbidity with sleep disorders. The information obtained by analyzing heart rate variability (HRV) is considered a strong indicator of autonomic functioning under different physiological and emotional conditions. **Objective:** describe the characteristics of HRV during sleep, using different analysis methods (time domain, frequency domain and nonlinear methods). **Material and methods:** included children aged six to 10 years diagnosed with AS ($n = 10$) and typically developing children ($n = 10$). Polysomnographic recordings were made during two consecutive nights; the first night was for adaptation and the second night was considered for sleep macrostructure and HRV analyses, of which five-minute blocks per sleep phase were analyzed for each child. **Results:** children with AS presented greater latency to REM sleep and a lower number of sleep cycles. In addition, they presented higher heart rate (HR) during all sleep phases, mainly during REM sleep. On the other hand, parasympathetic nervous system activity, evaluated with the three methods of analysis, was similar between both groups. **Conclusions:** in children with AS, HR was higher than in normotypic children; while parasympathetic activity was similar between both groups. The lengthening in the latency to REM sleep may be indicative of abnormalities in the generative circuits of this sleep phase, which is consistent with the presence of fewer sleep cycles in children with AS.