USE OF ARTIFICIAL INTELLIGENCE AS DIAGNOSTIC SUPPORT IN OSAS PATIENTS: SCOOPING REVIEW

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Aim: Obstructive Sleep Apnea Syndrome (OSAS) is a common disorder with a prevalence of 5 to 14 percent among adults aged 30 to 70 years. The gold standard for the diagnosis of OSAS is polysomnography. The use of Artificial Intelligence (AI) in the diagnosis of OSAS has shown promising developments. The purpose is to evaluate the accuracy of current AI models used in the diagnosis and management of OSAS by reviewing the scientific literature to identify the models used.

Methods: this work was conducted according to the SR method that refers to the framework developed by Arksey and O'Malley consisting of six steps: identification of the research question and relevant studies, selection of studies, data analysis, report collection of results, and the optional consultation exercise. A survey of articles published up to January 2024 about the use of AI models used in the diagnosis of OSAS posing as an alternative to Polysomnography was conducted. The databases used in the research are: PubMed, Ovid, Web of Science, and Google Scholar. 1,100 potentially relevant articles were identified based on the keywords: Osas, Apnea Syndrome, Sleep Respiratory Disorder, AI, Artificial Intelligence, Machine Learning, Deep Learning, Neuronal Networks. A total of 97 studies were selected based on title and abstract, and then the full text was analyzed. Finally, data were collected from 83 articles.

Results and conclusions: this scooping review is the first in the literature to provide a description of AI models for OSAS diagnosis by reporting the degree of accuracy of each model used. It aims to be an accessible multidisciplinary guide for medical and bioengineering researchers who desire new AI models.

INFLUENCE OF MALOCCLUSION ON ATHLETIC PERFORMANCE

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Aim: the aim of this review is to assess the impact of malocclusion on the physical and physiological capabilities of patients participating in athletic competitions. Malocclusion affects posture, the spatial position of the spinal column, body balance, and the eccentric strength of postural muscles.

Methods: the research was conducted on the main electronic databases (PubMed, Scopus, Medline). The keywords used were "occlusion and posture", "sport and malocclusions", "orthodontics and sports performance". For this review, 20 articles from 2021 were selected.

Results: studies have shown that proper occlusion increases muscle strength even in areas distant from the oral cavity and that wearing a rigid stabilization splint (HSS) can improve postural balance, thereby preventing injuries and improving performance, leading to very satisfactory results. It has been demonstrated that heart rate, useful for controlling training load, monitoring recovery kinetics, and assessing athletes' training conditions, tends to increase in subjects with malocclusion.

Conclusions: this review highlights the importance of greater awareness of athletes' oral health, ensuring, through orthodontic treatment, better results during competitions, injury prevention, and improvement in muscle strength. In conclusion, a healthy mouth is important for sporting success.