**SLEEP DEPRIVATION IS ASSOCIATED WITH METABOLIC DAMAGES: A SYSTEMATIC REVIEW**

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**Background:** Sleep is a vital activity, responsible by numerous health benefits of individuals. Likewise, sleep deprivation (SD) has been associated with different implications on quality of life, being a potential risk factor for several disorders. In this study, we discussed relationships between a quality of sleep and metabolism. **Objective:** The objective of this study is to verify the association of sleep deprivation and metabolism in scientific databases as a systematic review. **Method:** We performed a systematic review in the PubMed database, by combining the descriptors "sleep deprivation" and "metabolism". Initially we obtained 2.865 articles, then the following inclusion criteria were adopted: 1) studies with adults of both sexes; 2) experimental studies and clinical cases; 3) studies written in English, published between 2012 and 2017. Were excluded from this review: 1) studies published before the stipulated period (N = 2.128); 2) animal model studies (N = 354); 3) studies with individuals of different age range (N = 28); 4) review studies (N = 91); 5) studies written in other languages (N = 12) and 6) studies with different objectives of the review (N = 165), retaining 87 articles included. **Results:** Sleep deprivation alters different systems which culminates in metabolism disorders. (i) Glucose homeostasis: Several studies have pointed out an important relationship between sleep quality and insulin metabolism. It has been demonstrated in these studies that SD is a risk factor for type 2 diabetes mellitus. (ii) Sleep Apnea (SA): Three case control studies individuals with a diagnosis of obstructive SA, suggesting that these patients are at increased risk for metabolic and cardiovascular disorders. (iii) Stress pathway: Most studies have been also demonstrated the high activation of hypothalamic-pituitary-adrenal (HPA) axis in SD individuals of both sexes. Finally (iv) SD has different outcomes between sexes: In men, sleep deprivation is associated with a higher prevalence of inflammatory factors than in women. **Conclusion:** There is a strong relationship between sleep deprivation and metabolism disorders. The social tendency towards of higher productivity possibly results in sleep disturbances and increases the prevalence of metabolic and cardiovascular disorders in coming years. It is fundamental that public health programs be elaborated to emphasize the notorious importance of sleep quality.

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