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Effect of work stresses on EEG activity in medical professionals

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Most of the people suffer from stress during their everyday life. While there is a close relationship between stress and mental health, psychological stress and associated emotions such as anger, anxiety and depression can also have effects on physical health. Indeed, chronic psychological stress can change the responsiveness of central-peripheral regulatory systems, potentially rendering them less efficient or adaptive for health support. Stress also influences the desire to work, performance at work and one's general attitude toward life. Stress is implicated in 75% of all heart and brain blood vessel diseases. It is thus apparent that stress can increase social and economic losses and decrease a country's competitiveness. The need for qualifying and quantifying stress, if possible is warranted to implement measures that can aid workers to decrease and alleviate stresses with expected positive consequences at the level of work and social lives. There are many bio-signal channels by which stress can be potentially quantified, including ECG, EEG and the Skin Conductance Response (SCR). Determining the stress level of any given individual can be difficult. The nature of background activity of human brains and how it reflects their behavior and mental functions were the interest of scientists since Hans' discovery of alpha rhythm. Therefore, researchers developed an Electroencephalography (EEG) to evaluate the brain disorders and abnormal waves. EEG is an electrophysiological monitoring method to record the electrical activity of the brain. It is typically noninvasive (invasive techniques are used in particular applications). Our cohort prospective study aimed to examine the possible changes in the EEG activity that can be caused by the workload and stress of the medical professionals of our institute and compare them with findings that are got during days of rest. A 73 medical professionals from King Fahad Medical City (KFMC), Riyadh, Saudi Arabia, have been included. A comparative analyses to every EEG in both rest and stress were analyzed and studied.

Biography

Adel Mahmoud is a Senior Consultant Pediatric Neurologist and Director of the Ketogenic Diet program of National Neuroscience Institute, King Fahad Medical City. He got Fellowship of Pediatric Neurology in Hospital for Sick Children, Toronto, Canada, 2002 & Membership of Royal College & Diploma of Child Health of Ireland. Since 13 years he is working in King Fahad Medical City. He has more than 30 study and case report articles to his credit and he has been a speaker in many national and international meetings. He runs a ketogenic diet program including two dieticians, a clinical pharmacist, a social worker and a coordinator.

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