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Poster Presentation

Clarifying the Relationship between EEG Power and Neuroticism

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Abstract

The aim of this study was to clarify the relationship between EEG power and neuroticism trait. We used correlational method in order to examine the hypotheses. The participants included twenty-five undergraduate students (age mean= 21.36, SD= 23.39) at Ferdowsi university of Mashhad that were selected as volunteers. All participants were right-handed and had normal or corrected-to-normal visual acuity. We used the self-report version of the Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992) to measure neuroticism factor. In order to record brain activity, Mitsar EEG-201 (Mitsar Co. Ltd. Saint Petersburg, Russia) was used. As regard to Stepwise regression's results, parietal in alpha band could predict 40 percent of neuroticism ($P<0.05$, $F=15.77$). Also, parietal in alpha band and frontal in delta band could predict 22 percent of neuroticism ($P<0.05$, $F=12.97$). Additionally, parietal and frontal in alpha band and frontal in delta band could predict 7 percent of neuroticism ($P<0.05$, $F=4.95$). Finally, parietal, frontal in alpha and delta bands could significantly predict 10 percent of neuroticism ($P<0.05$, $F=9.98$). To sum up, by considering EEG measuring, neuroticism is associated with reward motivation and punishment, anxiety, depression, behavioral inhibition, brainstem activity and thalamacortical system. In fact, our findings could not completely support previous studies, because there were inconsistent and consistent findings as regard to neuroticism.

Keywords: EEG, Absolute Power, Neuroticism

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