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PII: S0167-8760(18)30064-3
DOI: doi:10.1016/j.ijpsycho.2018.05.007
Reference: INTPSY 11450

To appear in: *International Journal of Psychophysiology*

Received date: 13 February 2018
Revised date: 28 April 2018
Accepted date: 18 May 2018

Please cite this article as: Giuseppe A. Chiarenza, Stefania Villa, Lidice Galan, Pedro Valdes-Sosa, Jorge Bosch-Bayard , Junior temperament character inventory together with quantitative EEG discriminate children with attention deficit hyperactivity disorder combined subtype from children with attention deficit hyperactivity disorder combined subtype plus oppositional defiant disorder. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Intpsy(2017), doi:10.1016/j.ijpsycho.2018.05.007

Junior Temperament Character Inventory together with quantitative EEG discriminate children with Attention Deficit Hyperactivity Disorder combined subtype from children with Attention Deficit Hyperactivity Disorder combined subtype plus Oppositional Defiant Disorder.

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Key words: ADHD_C, ODD; qEEG; qEEGT; Source Localization; JTCI; Temperament; Character.

SUMMARY

Oppositional defiant disorder (ODD) is frequently associated with Attention Deficit Hyperactivity Disorder (ADHD) but no clear neurophysiological evidence exists that distinguishes the two groups. Our aim was to identify biomarkers that distinguish children with Attention Deficit Hyperactivity Disorder combined subtype (ADHD_C) from children with ADHD_C+ODD, by combining the results of quantitative EEG (qEEG) and the Junior Temperament Character Inventory (JTCI).

28 ADHD_C and 22 ADHD_C+ODD children who met the DSMV criteria participated in the study. JTCI and EEG were analyzed. Stability based Biomarkers identification methodology was applied to the JTCI and the qEEG separately and combined. The qEEG was tested at the scalp and the sources levels. The classification power of the selected biomarkers was tested with a robust ROC technique. The best discriminant power was obtained when TCI and qEEG were analyzed together. Novelty seeking, self-directedness and cooperativeness were selected as biomarkers together with F4 and Cz in Delta; Fz and F4 in Theta and F7 and F8 in Beta, with a robust AUC of 0.95