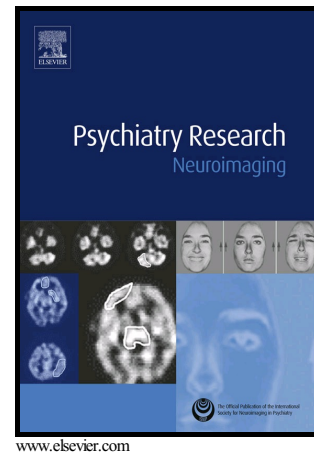


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Burak Erdeniz, Emin Serin, Yelda İbadi, Cumhur Taş



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Decreased Functional Connectivity in Schizophrenia: The Relationship between Social Functioning, Social Cognition and Graph Theoretical Network Measures

BurakErdeniz^a, Emin Serin^{a,b}, Yelda İbadi^c, & CumhuriTaş^c

^aIzmirUniversity of Economics, Faculty of Arts and Sciences,

Department of Psychology, Turkey

^bHumboldt-Universität zu Berlin, Berlin School of Mind and Brain, Berlin, Germany

^cÜsküdar University, Faculty of Humanities and Social Sciences, Department of Psychology,

İstanbul, TURKEY

Corresponding Author: BurakErdeniz, burak.erdeniz@ieu.edu.tr

Abstract

Schizophrenia is a complex disorder in which abnormalities in brain connectivity and social functioning play a central role. The aim of this study is to explore small-world network properties, and understand their relationship with social functioning and social cognition in the context of schizophrenia, by testing functional connectivity differences in network properties and its relation to clinical behavioral measures. Resting-state fMRI time series data were acquired from 23 patients diagnosed with schizophrenia and 23 healthy volunteers. The results revealed that patients with schizophrenia show significantly decreased connectivity between a range of brain regions, particularly involving connections among the right orbitofrontal cortex, bilateral putamen and left amygdala. Furthermore, topological properties of functional brain networks in patients with schizophrenia were characterized by reduced path length compared to healthy controls; however, no significant difference was found for clustering coefficient, local efficiency or global efficiency. Additionally, we found that nodal efficiency of the amygdala and the putamen were significantly correlated with the

*Corresponding Author: BurakErdeniz, burak.erdeniz@ieu.edu.tr Tel: +902324888379

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