Neurocognitive Processes and the Prediction of Addictive Behaviors in Late Adolescence
O. Korucuoğlu
Abstract

The primary aim of this dissertation was to investigate the effect of acute alcohol on neurocognitive systems involved in the development of addictive behaviours in adolescents. A secondary aim was to investigate whether alcohol-induced changes in cognitive and affective processes would be predictive of alcohol escalation in young people. Tasks that tap into cognitive control, implicit and explicit action tendencies were used to assess late adolescents’ brain responses after alcohol administration. In a separate study, we focused on how a genetic vulnerability for alcohol’s rewarding effects observed in adult samples would affect adolescent brain response to alcohol taste-cues with a limited prior exposure to alcohol. In all studies, motivational influences were under investigation by either using contextual cues in cognitive tasks or directly assessing alcohol-related cognitions. Increased motivation towards alcohol-related cues was evident in all studies despite our adolescent sample having no substance use disorder. However, this increased motivation towards alcohol cues was not affected by a gene previously associated with appetitive motivation, suggesting that some of the genetic factors might only become important after repeated use. Alcohol-induced changes both on task performance and neural activity were shown to contribute to the prediction of changes in alcohol use. Alcohol-induced changes in the monitoring system and the ability to regulate alcohol-related cognitions under the influence of alcohol predicted decrease in alcohol use in future. These neurocognitive predictors of changes in alcohol use could be used in differentiating risk from resilient individuals or targeted in prevention research.