Chronic Cannabis Use and Error Awareness: The Effect on Learning from Errors

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Introduction: *Cannabis is the most commonly used illicit drug worldwide, providing impetus for investigating the potential ramifications of long-term use on error monitoring processes. While there exists evidence of impaired error monitoring in cannabis users, further research is required. Notably, it has not yet been explored whether diminished error awareness influences subsequent adaptive behaviour in chronic cannabis users. Therefore, the current study sought to examine the effect of error awareness on learning from errors in cannabis users.*

Design and Methods: *Thirty-six chronic cannabis users (M = 23.81 years, SD = 5.36) and 34 controls (M = 21.53 years, SD = 2.95) completed a motor Go/No-Go response inhibition task that allowed participants to learn from errors and subsequently adapt their behaviour.*

Results: *While error awareness and error correction rates were not found to differ between the groups, there was evidence in support of an effect of age of onset on error correction in cannabis users. Further, the effect of error awareness was found to depend on age of onset and cannabis use-related frequency and harm, such that cannabis users reporting an earlier age of first use or scoring higher on the cannabis use index were less likely to perform correctly following an aware error.*

Discussions and Conclusions: *The current results suggest that overall cannabis use might not be tightly coupled to behavioural indices of performance monitoring, however there is evidence that aspects of cannabis use may be important predictors of impairments in learning from errors that may be associated with treatment outcomes.*

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