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Reward-based Decision Making in Pathological Gambling: the Roles of Risk and Delay.

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Abstract

Pathological gambling (PG) is a non substance based addiction that shares many behavioral and neural features with substance based addictions. However, in PG behavioral and neural changes are unlikely to be confounded by effects of acute or chronic drug exposure. Changes in reward based decision-making in particular increases in impulsivity are hallmark features of addictions. Here we review studies in PG that applied three reward-related decision tasks: the Iowa Gambling Task, probability discounting and delay discounting. We discuss the findings and focus on the impact of addiction severity and the relation of effects to impulsivity measures. While there is evidence that PGs differ from healthy controls on all three tasks, there is only little support for a further modulation of impairments by addiction severity. Conceptually, delay discounting is related to impulsivity measures and findings in this task show a considerable correlation with e.g. questionnaire-based measures of impulsivity. Taken together, impairments in PG on these three tasks are relatively well replicated, although impairments appear to be largely uncorrelated between tasks. An important next step will be to conceptualize a process-based account of behavioral impairments in PG.

Introduction

In the field of psychiatry research, pathological gambling (PG) has been attracting more and more attention over the last years, with life-time prevalence rates estimated around 1% (Kessler et al.,

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