



RESEARCH SYNOPSIS

Petry, N. M. (2001). Substance abuse, pathological gambling, and impulsiveness. *Drug and Alcohol Dependence*, 63, 29-38.

RESEARCH QUESTIONS

To what extent is impulsiveness related to pathological gambling and substance abuse?

PURPOSE

Pathological gambling frequently co-occurs with substance abuse. The association between substance abuse and pathological gambling may be explained by an underlying personality trait such as impulsiveness. Although most research finds that substance abusers tend to be highly impulsive, research on the association between pathological gambling and impulsiveness is not as clear. These discrepant results may be due to the fact that impulsiveness is multi-dimensional, consisting of sensation seeking, sensitivity to reward, and the inability to delay gratification, among other traits. This study compared impulsiveness in substance abusers who were also pathological gamblers to substance abusers who were not pathological gamblers and controls.

HYPOTHESIS

Substance abusers would be more impulsive than non-substance abusers. Participants with dual problems (i.e., substance abuse and pathological gambling) would be the most impulsive.

PARTICIPANTS

Participants were 111 male adults recruited via advertisements at substance abuse treatment centres, low-income housing projects, and social services agencies in Connecticut. Substance abusers reported a lifetime history of alcohol, cocaine or heroin abuse. Control participants reported no history of substance abuse. Control participants were matched on age, race, and educational history to substance abusers. Pathological gamblers scored at least 5 on the South Oaks Gambling Screen.

PROCEDURE

Interested participants were screened via telephone. Eligible participants took part in the study at a lab. First, they provided breath and urine samples to test for alcohol, opioids, cocaine, and marijuana. Next,

they completed self-report measures of addiction severity (substance abusers only) and impulsivity (all participants). Participants then completed a card selection task to measure impulsivity. For this task, participants selected cards from four decks and could earn hypothetical money based on the outcome of the card selected. Selecting cards from two of the decks resulted in overall losses but frequent small rewards and the other two decks resulted in overall wins but lower earnings per card. Participants were free to switch between decks as often as they wished and the task continued for 100 card selections. Participants received \$50 and could earn a bonus \$10 based on their performance on the card selection task.

MAIN OUTCOME MEASURES

Impulsivity was measured using several self-report questionnaires including the Stanford Time Perception Inventory, the Zuckerman Sensation Seeking Scale, the Eysenck Impulsivity Scale, and the Barratt Impulsivity Scale. Participants' performance on the Card task was used as a behavioural measure of impulsivity. The task measures preferences for immediate reward that result in long-term negative consequences.

KEY RESULTS

Ninety participants were classified as substance abusers, and twenty-one participants were classified as controls. Of the substance abusers, 30% (N = 27) were also pathological gamblers. Substance abusers, especially those who were also classified as pathological gamblers, were more impulsive and more concerned with the present moment than were control participants. Controls did not differ from substance abusers on novelty seeking. Consistent with the hypotheses, substance abusers performed less well on the card selection task than control participants and participants with a dual diagnosis of substance abuse and pathological gambling performed the least well on the task. These results indicate that substance abusing pathological gamblers prefer large immediate rewards over long-term net gains, indicative of high impulsivity.

LIMITATIONS

Participants self-selected into the study and may not represent all substance abusers and pathological gamblers.

CONCLUSIONS

This study provides evidence that individuals with gambling and substance abuse problems are more impulsive than participants with no such problems or with substance abuse problems only. Impulsivity was measured using several self-report questionnaires and a behavioural task, providing strong support for

the link between impulsivity, gambling problems and substance abuse. However, the study did not investigate whether impulsivity is a risk factor for problem gambling and substance abuse, or a consequence of these addictive behaviours. Future research could investigate the origins of impulsivity and its relationship to pathological gambling and substance abuse.

KEYWORDS: substance abuse, gambling, impulsivity, comorbidity

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