

intensive use of first-person shooter games on the brain function of young male adults, particularly looking at both the possible impact of such games on morphological and functional structure of the brain and its relation to processing cognitive tasks. Subjects had to complete questionnaires and underwent fMRI scanning while they relaxed.

The groups differed in the aggression scores, with the FPSG players showing significantly higher levels of felt aggression. The research also showed differences in brain activity during cognitive and motor resting periods between the FPSG users and the control group. "This frontal increase in default-mode network (DMN) may indicate executive dysfunctions of FPSG users having influence on the high scores in the aggression questionnaire," the researchers concluded.



Excess Mortality Risk Associated With Most Illicit Drugs

Persons who have been treated for cannabis, cocaine, amphetamine, and opioid use disorders have a significantly increased risk of dying within several years, according to a Danish nationwide registry.

The study estimated the standardized mortality ratios (SMRs) among 20,581 persons who underwent substance abuse treatment for cannabis, cocaine, amphetamine, MDMA (ecstasy), heroin, and other opioids (morphine,

methadone, buprenorphine) between 1996 and 2006 in Denmark. The registry was linked with Danish mortality registries, and SMRs were calculated for the drug abusers versus the gender- and age-matched Danish population.

"Risk was more pronounced for females than for men. We found a high degree of excess mortality except among primary users of ecstasy," said Signe O.W. Jensen, MSc, Aalborg Psychiatric Hospital, Aalborg, Denmark. "Females had slightly higher SMRs than men, especially for heroin and cocaine users, indicating that substance abuse may have a worse impact on females."

The SMR is the ratio of observed deaths to expected deaths. The overall SMR was 7.8 for any substance abuse, meaning nearly an 800% increase.

For the individual classes of drugs, the SMRs were 9.1 for heroin (95% CI, 8.5 to 9.8); 7.7 for other opioids (95% CI, 6.6 to 8.9); 6.4 for cocaine (95% CI, 3.9 to 10.0); 6.0 for amphetamines (95% CI, 4.2 to 8.3); 4.9 for cannabis (95% CI, 4.2 to 5.8), and 2.7 for MDMA (95% CI, 0.5 to 9.1; Figure 1). The highest SMR was for female cocaine users, 16.3 (95% CI, 6.8 to 39.2), and female heroin users, 12.2 (95% CI, 10.3 to 14.4).

"Although the SMR of primary users of cannabis is slightly smaller than what was found for cocaine, amphetamine, and opioids, it is still noteworthy," commented Mikkel Arendt, MD, Aarhus University Hospital, Risskov, Denmark. Increased mortality that is associated with cannabis was an unexpected finding, Dr. Arendt said, but might be explained by a higher rate of vehicular accidents and other reckless behavior.

Figure 1. SMRs by Drug Class.

