

## MASSIVELY MULTIPLAYER ONLINE ROLE-PLAYING GAMES: COMPARISON OF PROBLEMATIC VS NON-PROBLEMATICS GAMERS

M. Nicolier<sup>1,2</sup>, S. Achab<sup>3,4</sup>, J. Monnin<sup>1,2</sup>, G. Tio<sup>1,2</sup>, C. Cappe<sup>1</sup>, F. Mauny<sup>5</sup>, P. Vandel<sup>1,4</sup>, D. Sechter<sup>1,4</sup>, P. Gorwood<sup>6,7</sup>, E. Haffen<sup>1,2,4</sup>

<sup>1</sup>Clinical Psychiatry, <sup>2</sup>CIC-IT 808 Inserm, University Hospital, Besançon, France, <sup>3</sup>Clinical Psychiatry, Addictology Unit, Geneva University Hospital, Geneva, Switzerland, <sup>4</sup>EA 481, Neurosciences, <sup>5</sup>UMR CNRS 6249 Chrono Environnement, University of Franche-Comté, Besançon, <sup>6</sup>Clinical Psychiatry, Sainte Anne Hospital, <sup>7</sup>Inserm U894, University of Paris Descartes, Paris, France

**Objectives:** Although the participant number in online role-playing games (MMORPGs) increase significantly, international validated instruments to assess excessive gaming are lacking.

**Methods:** Apart from sociodemographical data and behavioral gamer patterns, 3 different addiction scales were therefore tested in 453 French adult MMORPG gamers recruited during 10 consecutive months to determine characteristics, online habits and problematic overuse. The DSM-IV-TR substance scale (adapted for MMORPG and named DAS), the qualitative Goldberg Internet Addiction Disorder scale (GIAD) and the quantitative Orman Internet Stress Scale (ISS) were analyzed.

**Results:** The 453 participating adult gamers were typically young adult graduates living alone in urban areas. For all scales, cyberdependence were high (respectively 27.5%, 44.3% and 32.5%). The DAS appeared as a pertinent discriminating instrument as DAS dependent gamers had a 3 times increased tolerance phenomenon, declared significantly more social, financial (OR:4.85), couple (OR:4.61), family (OR:4.69) or work difficulties (OR:4.42) than non-dependent gamers. Furthermore, they were 3 times more irritable, having more daytime sleepiness and more sleep deprivation to play.

**Conclusions:** The results highlight that the DAS did not overestimate proportion of online video gamers addicted and was associated with several behavioral disorders such as low mood, emotional changes, disturbance of sleep. This study confirms the necessity of setting up a relevant prevention program against MMORPG overuse (Achab *et al.*, 2011, *BMC Psychiatry*, PMID: 21871089).