

Convergent validity of virtual reality neurocognitive assessment: a meta-analytic approach

ALEXANDRA NEGUT¹

SILVIU-ANDREI MATU²

FLORIN ALIN SAVA³

DANIEL DAVID⁴

Abstract

A new paradigm for neuropsychological assessment is virtual reality-based assessment which is considered to be an alternative for classical neuropsychological assessment. Fourteen studies met our inclusion criteria: included correlational analysis between classical or computerized measurement instruments and virtual reality assessment tools of the same cognitive process. We computed mean effect sizes from fourteen studies (N= 553) using correlation coefficient r . Based on a random effects model, results point out a positive significant medium correlation between virtual reality measures and classical or computerized measures ($r = .51$). For executive functions, memory and other neurocognitive measures subgroup analysis revealed medium effect sizes for the association between classical or computerized measures and virtual-reality-based measures. Moderation analysis was performed and revealed that participant's mean age and gender, as well as type of control measurement instrument are significant moderators. The current meta-analysis brings evidence in favor of the convergent validity of virtual reality-based measures.

Keywords

neuropsychological assessment, virtual reality, ecological validity