

## Could Screen Use Disorder exist? Item Response Theory Analysis of the DSM-5 Substance Use Criteria Adapted to Screen use

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**Aim:** Excessive screen use may share common mechanisms with addictions. In a context where the line between pathological and recreational use is blurred, the development of diagnostic tools is essential to better understand these behaviors.

**Objective:** To evaluate the psychometric properties of a Screen Use Disorder (ScUD) scale composed of the 11 DSM-5 Substance Use Disorder (SUD) criteria adapted to screen.

**Method:** These 11 ScUD criteria have been assessed through a self-administered questionnaire among adult participants recruited online in French general population. Unidimensionality, local independence, and psychometric properties of the scale was explored by confirmatory factor analysis (CFA) and a two-parameter Item Response Theory (IRT) model (2PL) to assess discrimination ( $a$ , the item's ability to distinguish severity) and difficulty ( $b$ , the severity level at which the item is endorsed) of each item.

**Results:** The sample included 3,038 participants, (73.4% women; age 42.2 (SD = 13.9)). Among them, 79.1% ( $n = 2,403$ ) reported at least one ScUD criterion, and 16.3% ( $n = 494$ ) reported five or more criteria. CFA confirms unidimensionality. The most frequently reported criterion was "larger/longer" (67.3%), whereas the least reported was "tolerance" (4.7%). The IRT model shows good discrimination for most items ( $a \approx 1.9-2.4$ ), with difficulty parameters spanning a wide continuum ( $b = -0.60$  to 2.15). The "craving" criterion shows strong discrimination ( $a = 1.87$ ) and difficulty level in the core range of the severity continuum ( $b = 1.43$ ).

**Conclusion:** Results shown that the 11 ScUD criteria constituted a globally consistent, unidimensional, and psychometrically robust scale, suggesting they may be useful indicators of various severity of ScUD. Further analyses should explore if alternative subsets of items may offer different diagnostic potential.

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**Conflict of interest:** I certify that the work presented is independent of any conflicts of interest with the pharmaceutical, tobacco, alcohol, and electronic cigarette industries, as well as with gaming companies.