

## Identifying Latent Psychological Subtypes of Adolescents With Internet Addiction Using Unsupervised Machine Learning Techniques

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### 1. Round 1

#### 1.1. Reviewer 1

Reviewer:

In the paragraph beginning “A substantial body of empirical research has established robust associations...”, the manuscript summarizes correlational evidence. Please add one sentence explicitly distinguishing correlation from causation, as this distinction is important for framing later interpretations.

The paragraph starting “Despite the growing consensus that internet addiction is a multidimensional phenomenon...” clearly motivates person-centered analysis. However, the authors should explicitly contrast variable-centered vs. person-centered paradigms with a brief theoretical citation to strengthen the conceptual transition.

The paragraph beginning “Subsequently, multiple unsupervised clustering algorithms were implemented...” would benefit from a theoretical or empirical justification for comparing k-means, hierarchical clustering, and GMM, rather than treating them interchangeably.

Authors uploaded the revised manuscript.

**1.2. Reviewer 2**

Reviewer:

The sentence “Recent research has increasingly emphasized the role of self-esteem and resilience...” would benefit from clarification of why self-esteem was treated as a core clustering variable rather than an outcome, given its frequent conceptualization as a mediator.

In “Machine learning approaches offer powerful tools for modeling complex, nonlinear relationships...”, please clarify whether the study assumes linearity or non-linearity in the clustering stage, and how this assumption influenced algorithm selection.

The stated aim is appropriate; however, it would be strengthened by explicitly indicating whether the goal is descriptive, exploratory, or theory-generating, particularly given the unsupervised framework.

While internal consistency is mentioned, Cronbach’s alpha (or omega) values for each scale should be reported explicitly, either in text or a supplementary table.

In the sentence “Missing data were handled using multiple imputation procedures”, please report the percentage of missing data, number of imputations, and variables included in the imputation model.

The use of PCA is described, but the manuscript should specify component retention criteria (eigenvalues, scree plot, parallel analysis) to enhance transparency.

Authors uploaded the revised manuscript.

**2. Revised**

Editor’s decision after revisions: Accepted.

Editor in Chief’s decision: Accepted.