PUBLISHING INSTITUTE
Journal Website

Article history:
Received 25 July 2025
Revised 07 November 2025
Accepted 14 November 2025
Published 10 December 2025

Journal of Adolescent and Youth Psychological Studies

Open peer-review report

E-ISSN: 2981-2526

Predicting Adolescent Emotional Dysregulation Using Ensemble Machine Learning Models Integrating Family, School, and Digital Behavior Indicators

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1. Round 1

1.1. Reviewer 1

Reviewer:

The paragraph beginning with "Adolescence represents a critical developmental period…" provides a strong theoretical grounding. However, it would be strengthened by explicitly linking emotional dysregulation to prediction and prevention, thereby creating a clearer bridge to the machine learning rationale introduced later.

In the paragraph starting "Within the family context, parenting practices…", the manuscript discusses family dynamics extensively but does not clearly indicate which aspects are expected to be most predictive. A short hypothesis-oriented sentence would improve conceptual focus.

The sentence "Cross-national evidence demonstrates that school stress and dissatisfaction are positively associated with excessive screen use…" is compelling, but the authors should clarify whether school variables are expected to exert direct or indirect effects on emotional dysregulation within the proposed predictive framework.

The sentence “Feature selection was conducted using a combination of correlation-based filtering and model-driven importance ranking” should be expanded to specify thresholds, criteria, and whether feature selection was nested within cross-validation to avoid information leakage.

Authors uploaded the revised manuscript.

1.2. Reviewer 2

Reviewer:

The paragraph beginning “Over the past decade, adolescents’ emotional lives have become increasingly intertwined with digital media…” is well written, but it would benefit from distinguishing between quantity (screen time) and quality (problematic use) more explicitly, as these constructs later appear separately in the models.

The statement “much of the existing research relies on linear statistical models…” is accurate, but the authors should cite at least one concrete example of such studies to empirically justify the claimed methodological gap.

The sentence “Accordingly, the aim of the present study was to predict adolescent emotional dysregulation…” is clear, but it would be stronger if it also stated what this prediction contributes theoretically or practically (e.g., early identification, targeted interventions).

In “The present study employed a cross-sectional, predictive-analytic design…”, the authors should explicitly justify why a cross-sectional design is acceptable for predictive modeling, particularly given the developmental nature of emotional regulation.

The exclusion criterion “diagnosed neurodevelopmental disorders or severe psychiatric conditions” requires clarification. Please specify how these diagnoses were identified (school records, parent report, self-report) to assess potential selection bias.

The phrase “operationalized through a multidimensional self-report scale” lacks specificity. Please provide the name of the scale, number of items, response format, and reliability coefficients within this sample.

In describing “problematic or compulsive digital use behaviors”, it is unclear whether these were measured via a validated scale or ad hoc items. This distinction is critical for evaluating construct validity.

Authors uploaded the revised manuscript.

2. Revised

Editor’s decision after revisions: Accepted.

Editor in Chief’s decision: Accepted.

JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526