PUBLISHING INSTITUTE
Journal Website

Article history:
Received 29 July 2025
Revised 11 November 2025
Accepted 18 November 2025
Published 10 December 2025

Journal of Adolescent and Youth Psychological Studies

Open peer-review report

E-ISSN: 2981-2526

A Deep Neural Network Model for Predicting Stress Sensitivity in Adolescents Using Multidimensional Psychological Data

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1. Round 1

1.1. Reviewer 1

Reviewer:

In the paragraph beginning “The conceptualization of stress sensitivity is grounded in stress sensitization frameworks…”, the authors cite neurobiological mechanisms but do not clarify whether the current study is theoretically aligned with a diathesis–stress or stress-sensitization model. Explicit positioning would strengthen theoretical coherence.

Figure 1 is referenced but lacks sufficient annotation. Please label input dimensions, hidden layer sizes, and output node, and indicate where regularization is applied.

Table 1 reports descriptive statistics but omits skewness and kurtosis, which are relevant given the use of neural networks and normalization procedures. Consider adding these or briefly commenting on distributional properties.

The authors report strong performance ($R^2 = 0.71$). Please clarify whether this value refers to explained variance or coefficient of determination, and whether it is computed on standardized or raw scores.

The claim “limited overfitting” would be strengthened by reporting the training–test performance gap numerically or by including a learning curve in supplementary materials.

Authors uploaded the revised manuscript.

1.2. Reviewer 2

Reviewer:

The discussion of sex and gender differences is well supported; however, the manuscript later reports that "demographic variables contributed minimally". Please add a bridging sentence here acknowledging that demographic effects may be indirect or mediated, preparing readers for the later findings.

The aim is clearly stated; however, it would be methodologically stronger to explicitly state the primary outcome metric (e.g., continuous stress sensitivity score) and the comparative modeling approach (DNN vs. classical ML) within the aim sentence.

The phrase "urban and semi-urban regions of Malaysia" lacks specificity. Please clarify how many states were included, and whether school selection accounted for regional socioeconomic variation.

The exclusion criterion "no self-reported history of diagnosed psychiatric conditions requiring intensive clinical intervention" is vague. Please clarify how this was assessed (single item? checklist?) and discuss potential misclassification bias.

While the architecture is described conceptually, the manuscript omits exact hyperparameters (number of layers, neurons per layer, dropout rate, L2 coefficient). These should be explicitly reported, preferably in a table.

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
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