The Impact of Childhood Trauma on Adolescent Resilience: An Explainable Machine Learning Analysis of Protective Factors in Low-Socioeconomic Contexts

Ahmed Abdulkadhim. Johni[1], Zainab. Al-Obaidi[2*]

[1] Department of Psychology, University of Al-Qadisiya, Al-Qadisiya, Iraq
[2] Department of Psychology, University of Baghdad, Baghdad, Iraq

* Corresponding author email address: zainab.alobaidi@uobaghdad.edu.iq

Editor	Reviewers
Gholamreza Rajabi Professor of Counseling Department, Shahid Chamran University, Ahvaz, Iran rajabireza@scu.ac.ir	**Reviewer 1:** Devendra Raj Moktan Department of Psychology, Ramdayalu Singh College, Babasaheb Bhimrao Ambedkar Bihar University, Muzaffarpur, India. Email: rajmokhtan@gmail.com **Reviewer 2:** Syarifah Maisarah Faculty of Social Sciences & Liberal Arts, Department of Psychology, UCSI University, Kuala Lumpur, Malaysia. Email: symaisarah@ucsiuniversity.edu.my

1. Round 1

1.1. Reviewer 1

Reviewer:

The description of the sampling frame and procedure indicates stratified random selection from low-SES schools, which is commendable, but more operational detail is needed to judge selection bias. For instance, the precise inclusion/exclusion process at the school and classroom level, response rates, and any comparison between participants and non-participants are not fully elaborated. Without these, it is difficult to assess how representative the sample is of low-SES adolescents in the wider Iraqi context.

The measures section is generally solid in naming standard instruments (CTQ-SF, CD-RISC, READ), yet the manuscript would benefit from more precise psychometric reporting for the current sample: exact Cronbach's alpha values for each subscale, any item adaptations, and confirmatory factor analyses (if performed) are either absent or only briefly mentioned. Given the cultural and linguistic adaptation to Arabic, readers need more evidence that the constructs retained their factorial structure and measurement invariance in this context.

The discussion integrates the findings with relevant literatures on emotional maltreatment, attachment, and intergenerational trauma in a generally convincing manner, but at times the narrative becomes broad and somewhat repetitive, especially around the primacy of family cohesion. A more focused discussion that explicitly contrasts the current findings with studies from

higher-income or non-conflict settings—and that identifies where the Iraqi low-SES context yields distinct patterns—would showcase the contextual contribution more clearly and avoid generic restatements.

Authors uploaded the revised manuscript.

1.2.   Reviewer 2

Reviewer:

The analytic pipeline using a two-phase approach (conventional statistics followed by XGBoost with SHAP) is well conceived, but the description of model tuning and validation remains somewhat high-level. The manuscript should explicitly report train/test split proportions, the final selected hyperparameters, the exact R^2/RMSE/MAE values (with confidence intervals where possible), and any steps taken to handle multicollinearity and imbalance. Additionally, a brief justification for choosing XGBoost over alternative models (e.g., Random Forests, elastic net, GAMs) would strengthen the methodological rigor.

The results section provides a coherent narrative—emotional abuse and neglect as primary risk factors and family cohesion as the paramount protective factor—but the reporting could be more numerically transparent. Correlations are described qualitatively ("strongest," "moderate") without consistently providing exact coefficients and confidence intervals. Similarly, SHAP summaries are conceptually rich but would benefit from at least one concrete numerical example (e.g., typical SHAP value ranges for high vs. low family cohesion) and clearer visual referencing (figure numbers, captions).

The interpretation of the peer-support threshold effect is a particularly interesting contribution, yet it currently rests on qualitative descriptions of SHAP dependence plots. To avoid over-interpretation, the authors should more carefully delimit what the data demonstrably show versus what is theoretically inferred. For example, the claim that severe emotional neglect "disables" the use of peer support, while plausible, might be rephrased in more cautious terms and supported by either post-hoc subgroup analyses or sensitivity checks (e.g., stratifying models by levels of emotional neglect).

Authors uploaded the revised manuscript.

2.   Revised

Editor's decision after revisions: Accepted.
Editor in Chief's decision: Accepted.