

Support Vector Machine Classification of Dysfunctional Family Systems Based on Psychological Assessment Data

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1. Round 1

1.1. Reviewer 1

Reviewer:

In “Existing studies predominantly rely on conventional correlational or regression-based approaches...”, please provide one concrete example of a limitation (e.g., inability to model non-linearity) to make the methodological gap more explicit.

The exclusion criterion “families currently undergoing acute psychiatric crisis” requires justification. Please explain how ‘acute psychiatric crisis’ was operationally defined and assessed during screening.

When listing the instruments, include sample item examples and the Likert response ranges for at least two major scales (e.g., Family Assessment Device, Parenting Stress Index) to enhance replicability.

The claim “superiority of the SVM model” should be carefully rephrased to avoid overgeneralization, acknowledging dependence on this dataset and context.

Response: Revised and uploaded the manuscript.

1.2. Reviewer 2

Reviewer:

The sentence “Internal consistency coefficients ranged from .78 to .91” should specify which scale achieved which value rather than presenting only the range.

The manuscript mentions “recursive feature elimination” but does not report the final number of retained features. This information is essential for transparency.

For the variable “Composite Family Dysfunction Index”, clarify the interpretive meaning of the range (-2.14 to 2.89). What constitutes a clinically meaningful difference?

The claim “approximated a standardized normal form” should be supported by either normality statistics (e.g., skewness, kurtosis) or a reference to supplementary diagnostics.

The sentence “McNemar’s test revealed that the improvement...was statistically significant” would benefit from reporting the test statistic and exact p-values.

For each SHAP feature, briefly indicate whether the relationship with dysfunction was positive or negative to improve interpretability.

The manuscript states “non-linear relationships captured by the SVM”. Please include a short technical explanation of what type of non-linearity was observed in the SHAP distribution.

Response: Revised and uploaded the manuscript.

2. Revised

Editor’s decision after revisions: Accepted.

Editor in Chief’s decision: Accepted.