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A Network-Informed Machine Learning Model of How Trait Negative Affectivity and Pain Catastrophizing Predict Somatic Symptom Intensity

Maia. Bolashvili[1], Nino. Beridze[2*]

[1] Georgian Association for Mental Health, Tbilisi, Georgia
[2] Department of Psychology, Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia

*** Corresponding author email address**: nino.beridze@tsu.ge

Editor	Reviewers
Ali Aghaziarati Department of Psychology and Counseling, KMAN Research Institute, Richmond Hill, Ontario, Canada aliaghaziarati@kmanresce.ca	**Reviewer 1:** Yirsa Meza Villanueva Department of Social Psychology and Quantitative Psychology, Faculty of Psychology, University of Barcelona, 08007 Barcelona, Spain. Email: yirsa.mezavillanueva@uvic.cat **Reviewer 2:** Tristan McKay-Tempest School of Advanced International Studies Europe, Johns Hopkins University, Bologna, Italy. tristan.mckay-tempest@gmail.com

1. Round 1

1.1. Reviewer 1

Reviewer:

The literature review is conceptually rich but somewhat descriptive and fragmented. It would benefit from a more analytical structure that leads logically to your hypotheses/research questions. Consider organizing the review around key constructs or mechanisms and, for each, synthesizing the main agreements, contradictions, and unresolved issues in the literature. Then, explicitly show how each cluster of studies motivates a specific hypothesis, possibly using a summary table that maps prior findings, context, and your proposed extensions.

The discussion section could be more tightly integrated with both theory and prior empirical work. At times, it reads as a simple restatement of the results. To improve it, systematically relate each key finding back to the theoretical framework and the studies cited in the literature review, highlighting where your results confirm, refine, or contradict existing knowledge. Also, explicitly articulate the theoretical implications—how should current models or theoretical assumptions be updated in light of your findings?

The treatment of limitations is somewhat brief and generalized. A more nuanced reflection on methodological, theoretical, and contextual limitations would improve the paper's credibility. For example, discuss potential biases (e.g., self-report, common method variance, sample representativeness), the constraints of your measures, and the extent to which the findings can be generalized. Importantly, link each limitation to concrete suggestions for future research, indicating how subsequent studies might address or overcome these constraints.

The practical/managerial/policy implications, while mentioned, would benefit from being more specific and actionable. Instead of general recommendations, translate your key empirical findings into concrete guidelines or decision-relevant insights for practitioners in the studied context. Where appropriate, differentiate implications for different stakeholder groups and indicate the boundary conditions under which your recommendations are likely to hold, thus avoiding over-generalization.

Authors revised the manuscript and uploaded the document.

1.2. Reviewer 2

Reviewer:

The theoretical framework is mentioned, but the connection between theory and empirical model is not consistently explicit. For each main hypothesis, it would strengthen the paper to state clearly which theoretical assumptions or mechanisms underpin the expected direction of the effect and why alternative outcomes might be plausible. This will make your hypotheses more theoretically grounded and help position your work as a theory-informed contribution rather than primarily an empirical exercise.

The methodology section lacks some important details needed for full reproducibility and rigorous evaluation. Please provide more information on sampling procedures (e.g., inclusion/exclusion criteria, response rate, handling of missing data), measurement scales (e.g., exact items, sources, translation/adaptation process if applicable), and any pre-testing or reliability checks performed. Including a table with all constructs, items, scale anchors, and reliability indices (Cronbach's alpha, composite reliability, AVE if using SEM) would greatly enhance transparency.

The statistical analysis is generally appropriate but needs a more explicit justification and clearer reporting of diagnostics. For instance, if you employ regression or structural equation modeling, detail the assumptions you tested (normality, multicollinearity, homoscedasticity, model fit indices, etc.) and how any violations were addressed. Reporting key statistics such as VIF values, fit indices (CFI, TLI, RMSEA, SRMR), and robustness checks (e.g., alternative specifications, subsample analyses) would significantly strengthen the credibility of the empirical results.

The presentation of results is informative, but the interpretation sometimes remains at the level of whether coefficients are significant or not, without sufficiently discussing effect sizes and practical relevance. I recommend emphasizing the magnitude of the effects, confidence intervals, and their substantive implications. In tables, clearly distinguish between statistically significant and non-significant estimates, and in the text, discuss what these findings mean in real terms for the studied context rather than focusing solely on p-values.

Authors revised the manuscript and uploaded the document.

2. Revised

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

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